

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Edward Balassanian
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Title: METHOD AND SYSTEM FOR
DATA DEMULTIPLEXING

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PRELIMINARY AMENDMENT

Please enter the following preliminary amendment in the above-captioned case.

Please amend the case as listed below.

IN THE SPECIFICATION:

Please amend the specification by replacing the first paragraph after the title with the following amended paragraph:

[0001] ~~This~~ The present application is a continuation of U.S. ~~patent application Ser. Appl. No. 13/236,090, filed September 19, 2011, which is a continuation of US. Appl. No. 10/636,314, filed August 6, 2003 (now U.S. Patent No. 8,055,786), titled Method and System for Data Demultiplexing, for all purposes including but not limited to the right of priority and benefit of earlier filing date, and expressly incorporates by reference the entire content of Patent Application Serial No.10/636,314 for all purposes. U.S. patent application Ser. No.10/636,314 which is a continuation of U.S. Appl. patent application Ser. No. 09/474,664, filed December 29, 1999 (now U.S. Patent No. 6,629,163);, filed December 29, 1999, titled Method and System for Demultiplexing a First Sequence of Packet Components to Identify Specific Components Wherein Subsequent Components Are Processed Without Re-Identifying Components. This application claims the benefit of the following applications for all purposes including but not limited to the right of priority and benefit of earlier filing date, and expressly incorporates by reference the entire content of the following applications for all purposes: U.S. patent application Ser. No. 10/636,314; and U.S. patent application Ser. No. 09/474,664 the disclosures of each of the above-referenced applications are incorporated by reference herein in their entireties.~~

IN THE CLAIMS:

The following is a current listing of claims and will replace all prior versions and listings of claims in the application. Please amend the claims as follows:

1-25. (Canceled)

26. (New) An apparatus, comprising:

a processing unit; and

a memory storing instructions executable by the processing unit to:

create, based on an identification of information in a packet of a message, a path that includes a sequence of routines for processing packets in the message; and

process packets in the message using the sequence of routines in the created path, wherein the sequence includes a routine that is used to execute a Transmission Control Protocol (TCP) to convert packets having a TCP format into a different format.

27. (New) The apparatus of claim 26, wherein the sequence includes:

a second routine that is used to execute a second, different protocol to convert packets of the different format into another format; and

a third routine that is used to execute a third, different protocol to further convert the packets.

28. (New) The apparatus of claim 27, wherein the second protocol is an Internet Protocol (IP) and the third protocol is an Ethernet Protocol.

29. (New) The apparatus of claim 26, wherein the memory stores instructions executable by the processing unit to maintain state information associated with one or more routines in the sequence of routines, and wherein the state information is specific to the message.

30. (New) The apparatus of claim 26, wherein the sequence of routines includes a routine that is executable to process the packets without converting a format of the packets.

31. (New) The apparatus of claim 26, wherein the routine is not executable to convert packets having the different format, and wherein the different format is an Internet Protocol (IP) format.

32. (New) The apparatus of claim 26, wherein the memory stores instructions executable by the processing unit to identify an address associated with the information, wherein the address indicates the routines in the sequence of routines of the created path.

33. (New) A non-transitory, computer-readable medium comprising software instructions for processing a message, wherein the software instructions, when executed, cause a computer system to:

obtain information from an initial packet of the message;

use the obtained information to identify an address comprising a list of conversion routines;

create a path that includes a sequence of sessions, wherein sessions in the sequence include respective ones of the conversion routines in the list;

store the created path; and

process packets of the message by routing packets through sessions in the created path, including:

a session in which a transport layer protocol is executed to convert packets in a transport layer format into a different format; and

another session in which a different protocol corresponding to the different format is executed.

34. (New) The medium of claim 33, wherein one or more of the sessions comprises state information for one or more of the conversion routines, and wherein the state information is specific to the message.

35. (New) The medium of claim 33, wherein the different protocol is associated with a layer selected from the group consisting of an application layer and a network layer.

36. (New) The medium of claim 33, wherein at least one of the routines associated with at least one of the sessions is not used to convert the packets.
37. (New) The medium of claim 33, wherein the transport layer protocol is a Transmission Control Protocol (TCP).
38. (New) The medium of claim 37, wherein the message comprises a stream of data.
39. (New) The medium of claim 33, wherein using the obtained information to identify the address includes determining a plurality of protocols by analyzing headers of the initial packet, and wherein the plurality of protocols includes protocols executable at the transport layer and an application layer.
40. (New) The medium of claim 33, wherein the different format is not compatible with the transport layer protocol, and wherein the different format is a network layer format.
41. (New) An apparatus, comprising:
a processing unit; and
memory storing instructions that are executable by the processing unit to:
obtain and analyze information from a packet of a message;
identify an address based on the obtained information, wherein the address comprises a list of routines;
create a sequence of sessions, wherein sessions in the sequence are associated with respective ones of the routines in the list; and
process packets of the message using the sequence, wherein one of the sessions in the sequence is associated with a particular routine that is used to execute a protocol to convert the packets from an input format to an output format, wherein the particular routine is not executable to convert packets having the output format.
42. (New) The apparatus of claim 41, wherein a different session is associated with a different routine that is used to execute a second, different protocol to convert the packets from the output format to a different output format, and wherein another session is associated with

another routine that is used to execute a third, different protocol corresponding to the different output format.

43. (New) The apparatus of claim 42, wherein the protocols include a Transmission Control Protocol (TCP), an Internet Protocol (IP), and an Ethernet Protocol.

44. (New) The apparatus of claim 41, wherein at least one of the sessions is associated with a routine that is executable to process packets of the message without converting the packets.

45. (New) The apparatus of claim 41, wherein the particular routine is executable to convert packets by removing an outermost header of the packets.

46. (New) The apparatus of claim 41, wherein the protocol is a transport layer protocol.

47. (New) The apparatus of claim 46, wherein the transport layer protocol is a Transmission Control Protocol (TCP), and wherein the message comprises a stream of data.

48. (New) The apparatus of claim 41, wherein the obtained information includes information from headers of the packet that are associated with a network layer and a transport layer.

49. (New) The apparatus of claim 48, wherein the memory stores instructions executable by the processing unit to maintain state information associated with one or more routines in the sequence of sessions, and wherein the state information is specific to the message.

50. (New) A non-transitory, computer-readable medium comprising program instructions executable by a computer system to:

identify information from different headers associated with various layers of a packet of a message;

create, using the identified information, a sequence of sessions of routines; and

process packets of the message, including by removing an outermost header of a given packet using a first session corresponding to a protocol in a first layer and by removing the resulting outermost header using a second session corresponding to a different protocol in a different layer.

51. (New) The medium of claim 50, wherein the protocol in the first layer is a Transmission Control Protocol (TCP), and the message comprises a stream of data.
52. (New) The medium of claim 50, wherein the protocol in the first layer is a transport layer protocol and the different protocol in the different layer is an application layer protocol.
53. (New) The medium of claim 50, wherein processing packets of the message further includes removing the resulting outermost header using a third session corresponding to another protocol in another layer, and wherein the layers include a network layer, a transport layer, and an application layer.
54. (New) The medium of claim 50, wherein at least one of the routines associated with at least one of sessions is not used to remove a header of the packets.
55. (New) The medium of claim 50, wherein the outermost header has a format that is incompatible with a format of the resulting outermost header, and wherein the outermost header is associated with a network layer protocol.

REMARKS:

Claims 1-25 were pending in this application. Claims 1-25 have been canceled. Claims 26-55 have been added. Therefore, claims 26-55 are now pending in this application.

Reexaminations of Related Cases

Three reexaminations have been filed against cases related to the present case. In reexamination Control No. 90/010,356, *ex parte* reexamination was ordered on January 17, 2009, against U.S. Patent No. 6,629,163, which issued from the great-grandparent application of the present case. That reexamination largely concerned the reference “Scout: A Path-Based Operating System” by David Mosberger. In that proceeding, Patent Owner amended the claims to distinguish over Mosberger, resulting in a reexamination certificate being issued for the ’163 patent on June 22, 2010.

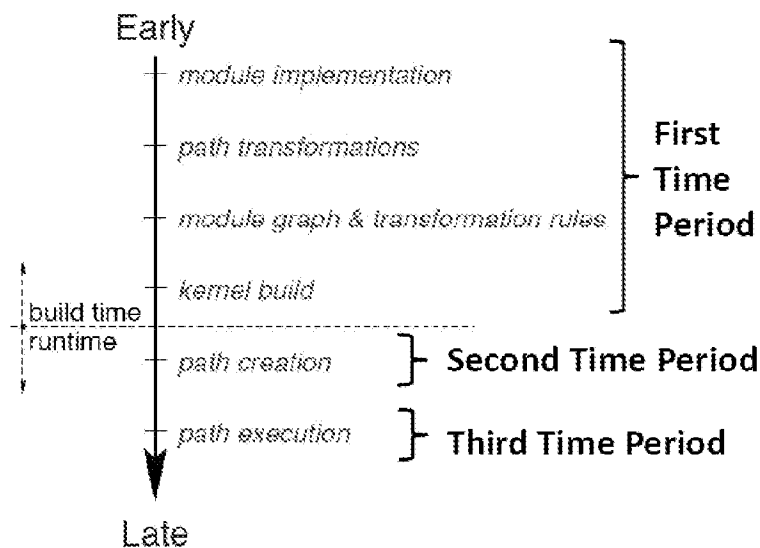
In reexamination Control No. 95/000,659, *inter partes* reexamination was ordered against the ’163 patent on April 3, 2012. Rejections in that proceeding, which is still pending, are largely based on the reference “Router Plugins: A Software Architecture for Next Generation Routers,” by Dan Decasper et al. Similarly, in reexamination Control No. 95/000,660, an *inter partes* reexamination was ordered on May 10, 2012, for U.S. Patent No. 7,711,857, which issued from a continuation of the grandparent of the present application. Rejections in that proceeding, which remains pending, are also based on Decasper.

Applicant plans to submit an Information Disclosure Statement in this application that includes Mosberger, Decasper, and other references from the above-noted reexaminations and the related litigations. The claims in this application are believed to distinguish over Mosberger and Decasper for at least the reasons set forth below.

Mosberger

With respect to claim 26, Applicant submits that Mosberger does not teach or suggest “a memory storing instructions executable by the processing unit to: **create, based on an identification of information in a packet of a message, a path that includes a sequence of routines for processing packets in the message.**”

As shown in the figure reproduced below, Mosberger teaches that there are three key “epochs” or time periods during the development and operation of the Scout path-based operating system. *See* Mosberger at 60-61. The first is “build time,” when the programmer designs the individual modules, decides what kinds of paths are likely to be important to system performance, develops the module graph and builds the system kernel. *See id.* The second time period is “path creation,” which occurs at “runtime” during system initialization when the system creates paths in anticipation of receiving packets. *See id.* at 60-61, 80-82. At this point, the paths have been created or defined and await packets. The third and final time period is “path execution,” which also occurs at “runtime” (but after “path creation”) when the system receives messages, chooses which of the predefined paths is appropriate for a particular message and then executes the modules in that predefined path. *See id.* at 60-61, 85, 100-101. These three time periods are illustrated in the following annotated figure from page 61 of Mosberger (the annotations include the brackets and language to the far right which are added for emphasis):



Section 3.3 of Mosberger describes how the paths in Scout are “realized.” *See* Mosberger at 71-85. The first part of Section 3.3 explains the basic components of a path (*i.e.*, “modules,”

“stages” and “interfaces”). *See id.* at 71-80. A “module” is a “unit of program development in Scout” that “provide[s] a well-defined and independent functionality.” *See id.* at 61-62. And “there is one stage per module that the path traverses.” *See id.* at 73. Finally, “an interface provides a controlled (type-checked) way to move data from one stage to the next one.” *See id.* at 75. Figure 3.5 on page 74 of Mosberger illustrates the relationship between the various components in the path:

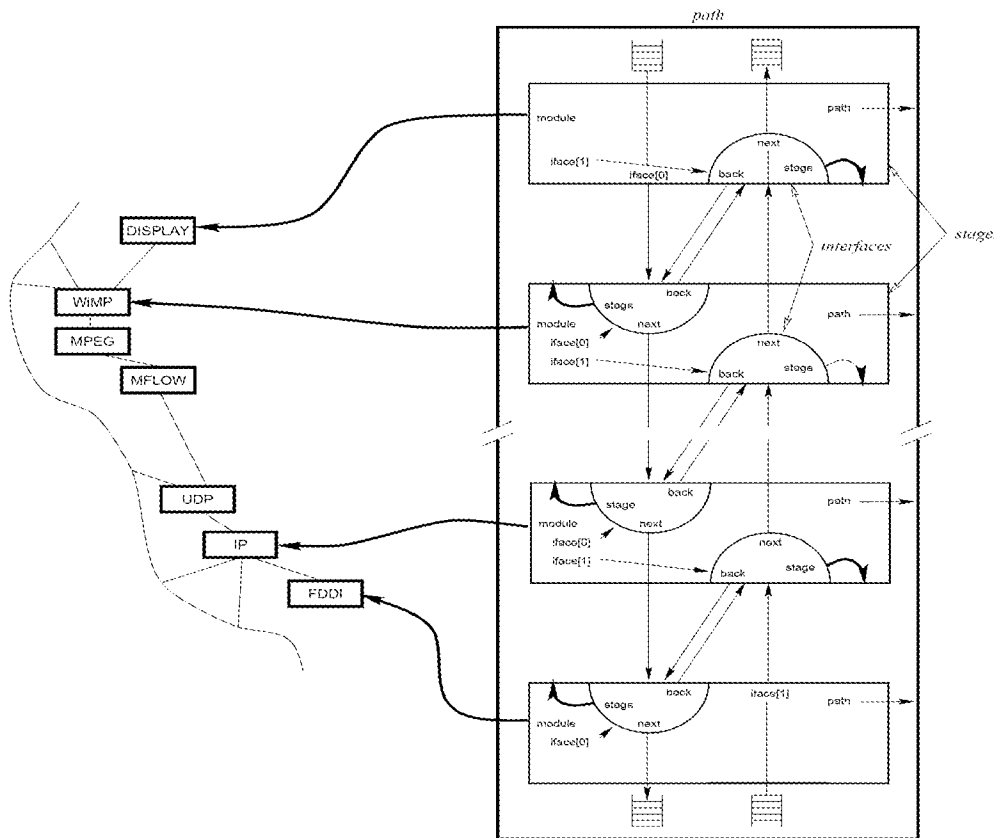


Figure 3.5: Path Structure

The next part of Section 3.3 (titled “3.3.6 Creation”) describes how paths are created during the “path creation” time period. *See Mosberger at 80-82.* Mosberger teaches that the “pathCreate” software function actually creates the paths. *See id.* at 80. The C-programming language prototype of the “pathCreate” software function is:

```
Path pathCreate (Module m, Attrs a);
```

See id. As its prototype suggests, a path is created by invoking the “pathCreate” software function on a module “m” with an attribute set¹ “a.” *See id.* Notably, the “pathCreate” software function does not take a message as a parameter, showing that the paths are created independently of the messages. *See id.*

The “pathCreate” software function eventually invokes the “createStage” software function, which has the following prototype:

```
Stage (*CreateStageFunc) (Module m, int s, Attrs a, ModuleLink*  
                          n);
```

See Mosberger at 80. This prototype shows that the parameters for the “createStage” software function are a module “m,” a service index “s,” a set of attributes “a,” and a pointer “ModuleLink*” to the service index of the next stage in the path. *See id.* Like the “pathCreate” software function, the “createStage” function also does not have an input parameter for a message, which further shows that the stages are created without regard to the particular messages. *See id.*

The end result of invoking the “pathCreate” software function is that Scout will create a set of paths comprising various sequences of modules. *See Mosberger at 81* (“At this point, the pathCreate function creates the actual path object, inserts the stages into it, and establishes the various chains through the path structure”). The knowledge of which modules to connect together is compiled into the Scout kernel at compile time. This knowledge does not exist outside of the modules themselves. Importantly, this set of paths is finite; Mosberger does not teach creation of new paths after initialization. *See id.*

The next section of Mosberger (Section 3.4), entitled “Demultiplexing,” describes how to select the appropriate path from amongst the finite set of previously-created paths based on the contents of a particular message. *See Mosberger at 85-99.* This point is underscored by the first sentence of section 3.4: “**So far**, we have not discussed the issue of how the appropriate path **is found** for a given message.” *See id.* at 85 (emphasis added). This sentence unequivocally establishes that the prior sections of Mosberger regarding creating paths are limited to “path creation” and do not relate to selecting (or “finding”) the appropriate (predefined) path for a particular message. *See id.* Instead, Section 3.4 teaches for the first time in Mosberger that,

¹ “The attribute set describes the kind of path that is desired. That is, the invariants ... are passed in this set.” Mosberger at 80.

upon the receipt of a message, Scout uses a demultiplexing process to find the correct previously-created path to process the message. *See id.* at 85-92 (“a packet classifier that factors all demultiplexing operations ... lets Scout pick a path and start processing a packet...” and “a classifier to decide whether a packet should be processed using path p1, p2, or p3”). Thus, Mosberger does not teach or suggest “instructions executable by [a] processing unit to: create, based on an identification of information in a packet of a message, a path that includes a sequence of routines for processing packets in the message” as recited in claim 26 (emphasis added). Rather, Mosberger teaches that when a message is received, a path is selected (or “found” or “picked”) from a set of possible paths, which were created *before* the message was received. *See id.* The “path” of claim 26, on the other hand, is “create[d]” “based on an identification of information in a packet of a message”—in other words, after a packet of the message exists and is received.

For at least the reasons given above, Applicant respectfully submits that Mosberger does not teach or suggest the combination of features recited in claim 26. Accordingly, Applicant submits that claim 26 and its dependent claims are patentably distinct over Mosberger. Claims 33, 41, and 50 include features that are similar to the features recited in claim 26. Thus, Applicant submits claims 33, 41, and 50, along with their respective dependent claims, are patentably distinct over Mosberger for at least the reasons given above.

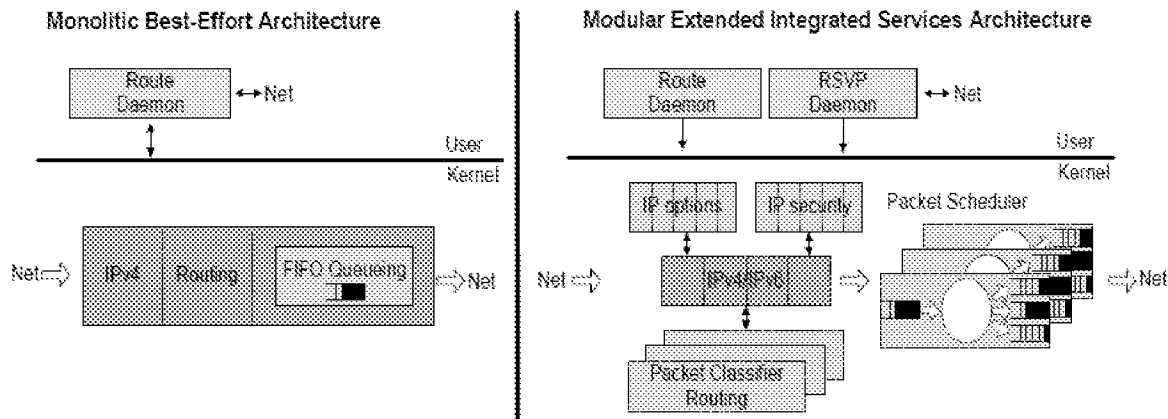
Decasper

As described in detail below, Decasper includes an “IP core” that uses modules called “plugins” to operate on IP packets. Decasper therefore does not teach or suggest a path having a sequence of routines, “wherein the sequence includes a routine that is used to execute a Transmission Control Protocol (TCP) to convert packets having a TCP format into a different format,” as recited in claim 26. Because Decasper operates on IP packets only (and thus executes the IP protocol but not other protocols), that reference does not teach or suggest “process[ing] packets of [a] message, including by removing an outermost header of a given packet using a first session **corresponding to a protocol in a first layer** and by removing the resulting outermost header using a second session corresponding to **a different protocol in a different layer.**”

Decasper Overview

Decasper is directed to “a high performance, modular, extended integrated services router software architecture.” Decasper at § 1 (p. 1, first col., ¶ 1).² Decasper states that “In the past, the main task of a router was to simply forward packets based on a destination address lookup.” *Id.* at § 2 (p. 1, first col., ¶ 3). This type of traditional router implementation is shown in the left half of Figure 1 of Decasper, which is reproduced below. In this “Monolit[h]ic Best-Effort Architecture,” packets are shown as being received from the “Net” (i.e., the Internet), processed according to an Internet Protocol (specifically IPv4), and output back onto the “Net.” *See id.* at Fig. 1. This prior art router architecture can thus be understood to execute an IP protocol in order to route packets to other locations in a network such as the Internet. Notably, the diagram in the left half of Decasper’s Figure 1 does not disclose that these prior art routers execute any type of networking protocols other than IP (e.g., TCP).

² Decasper does not include page numbers. The primary citations to this reference are given by section number (§), with parenthetical citations by page number, column, and paragraph number. In determining paragraph numbers, each bullet point is considered a separate paragraph. Additionally, a split paragraph that begins a column is considered the first paragraph for that column.



**Figure 1. : Best Effort vs
Extended Integrated Services Router (EISR)**

The “Extended Integrated Services Router” (EISR) shown in the right half of Decasper’s Figure 1 has an interface similar to the disclosed prior best-effort router architecture depicted in the left half of that figure. That is, Decasper’s EISR receives packets from the “Net,” processes these packets according to an Internet Protocol (specifically IPv4 or IPv6), and then outputs these packets back to the “Net.” *See id.* at Fig. 1. Accordingly, the improved EISR architecture that is shown in Figure 1 and described at length in Decasper generally can also be understood to execute an IP protocol. As with the diagram on the left half of Figure 1, the diagram on the right half of Figure 1 does not disclose that the EISR architecture executes any type of networking protocols other than IP.³

Figure 1 shows additional components that have been added to the kernel to implement the EISR architecture. *See id.* at Fig. 1. These additional components add to the functionality of a traditional router—for example, by adding additional “security” and “QoS” modules. *See id.* at § 2 (p. 1, second col., ¶¶ 2, 3). The additional kernel components shown in Figure 1 include a packet scheduler, a packet classifier, IP options, and security mechanisms. *See id.* at Fig. 1. These components may be “replaced and upgraded frequently” and are implemented in the form of “modules called plugins” in contrast to “code that remains relatively stable.” *See id.* at § 2 (p.

³ Decasper distinguishes various “research projects” from EISR by noting that those research projects are “focused on the implementation of modular **end-system** networking subsystems instead of routing architectures.” Decasper at § 2 (p. 2, second col., ¶ 5) (emphasis in original). This statement provides further evidence that Decasper’s EISR architecture is not focused on communication “end-systems” that implement protocols such as TCP.

1, second col., ¶ 6). The relatively stable code is referred to as the “core,” *see id.*, and is described in § 3.1 of Decasper, and depicted in Figures 2 and 3. The relationship between the core and the plugins in Decasper is described in more detail in the next section.

Decasper Control Path

Decasper’s Figure 2 shows the control path for the disclosed EISR architecture. This architecture includes, among other things, an IP core, plugins, and a plugin control unit.

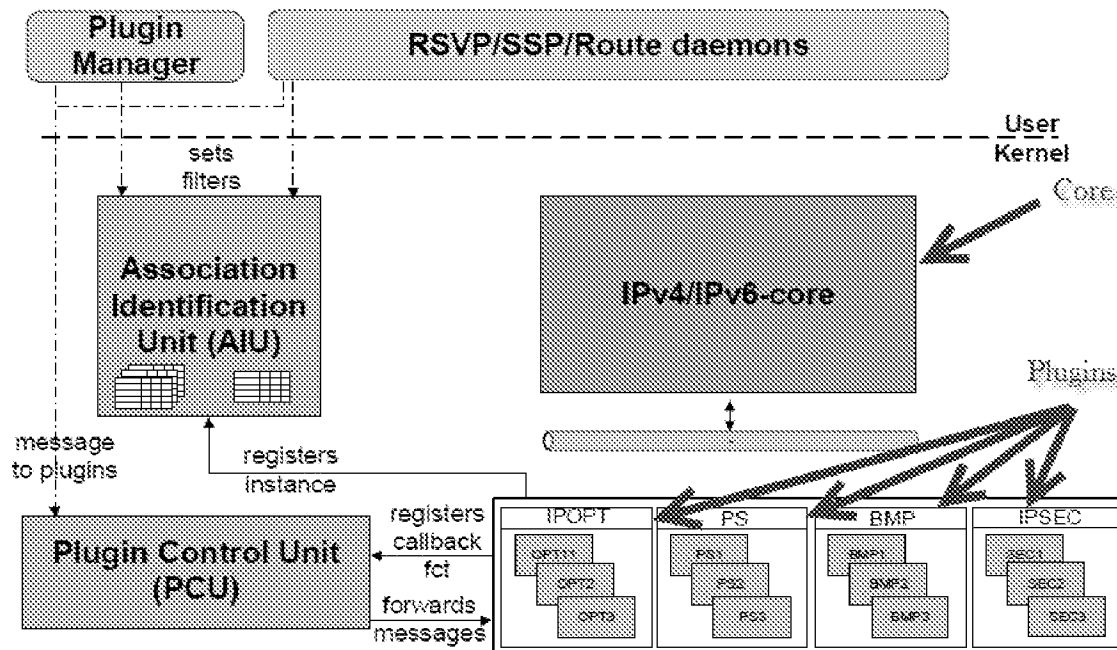


Figure 2. : System Architecture and Control Path

As shown, the core implements Internet Protocols (specifically, IPv4 and IPv6). *See* Decasper at § 3.1 (p. 3, second col., ¶ 7) (referring to a “stream-lined IPv4/IPv6 implementation”). Decasper further explains that the core contains components that are not “dynamically loadable”:

[The core] contains the (few) components required for packet processing which do not come in the form of dynamically loadable modules. These are mainly functions that interact with network devices. The core is also responsible for demultiplexing individual packets to plugins.

See id. Accordingly, as a received packet flows through the core, the core initiates the process by which the packet is assigned to one or more plugins. The fact that Decasper’s core is an “IP” core is further evidence that Decasper’s EISR executes an IP protocol and not other networking protocols such as TCP.

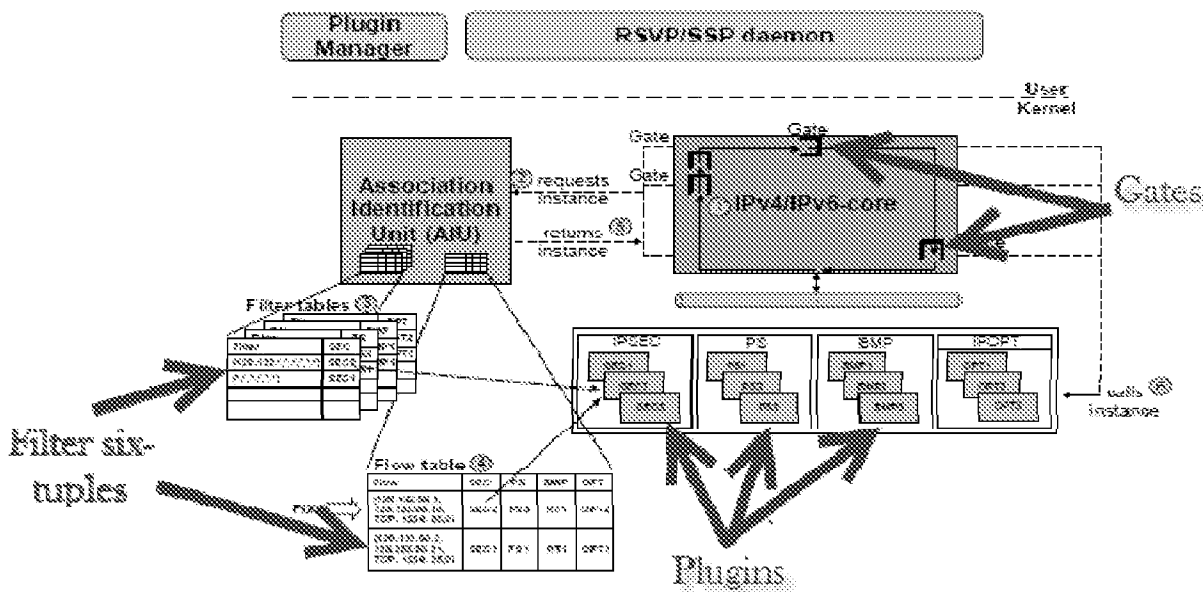
Figure 2 also depicts four plugins. The IPOPT plugin “implement[s] IPv6 options,” the PS plugin performs “packet scheduling,” the BMP plugin “calculate[s] the best-matching prefix ... used for packet classification and routing” and the IPSEC plugin is “for IP security.” See Decasper at § 3.1 (p. 4, first col., ¶ 1). Decasper uses a “packet classification algorithm” that “efficiently maps packets to code modules (plugins).” *Id.* at § 2 (p. 2, second col., ¶ 6). As will be discussed in further detail below, Decasper’s method of mapping a packet to a plugin requires the presence of an IP header in order to perform the classification. Accordingly, it follows that each of the plugins disclosed in Decasper operates on an IP packet (i.e., a packet with an IP header). This conclusion makes sense given that the process of mapping a packet to one or more plugins is initiated by different points (referred to as “gates”) within the IP core. Stated another way, it would be expected that plugins called from different points in the control path that implements an Internet Protocol would operate on IP packets.

Decasper’s Packet Classification Scheme

Decasper discloses that “[i]nstances of plugins can be created, configured, and *bound to specific flows*” (i.e., a group of related packets). Decasper at § 2 (p. 2, first col., ¶ 2) (emphasis in original). Specifically, the Association Identification Unit (AIU) shown in Figures 2 and 3 “implements an innovative algorithm for packet classification which efficiently maps packets to code modules (plugins).” *Id.* at § 2 (p. 2, second col., ¶ 6). The mapping between a packet and a plugin is governed by a “filter,” which Decasper discloses is specified by the following “six-tuple”:

<source address, destination address, protocol, source port, destination port, incoming interface>.

Id. at § 5.1 (p. 7, first col., ¶ 6). Values in a six-tuple field may include a wildcard character (a “*”), indicating that any value is acceptable for filter-matching purposes. See *id.* § 3 (p. 3, second col., ¶ 1). Thus, one filter may be specified by source address 129.132.*, with the remaining tuple values being wildcards. In such an example, any flow from source address 129.132.* will be mapped to the plugin specified by that filter. See Decasper at Fig. 3 (first filter table entry, which is mapped to IPSEC plugin “SEC2”).



The packet matching process begins at various points in the IP core referred to as “gates”:

A packet matching a particular filter will be passed to the plugin instance that has been bound to that filter. This [occurs] whenever the packet reaches a ‘gate’ in the IP stack; a gate can be thought of as the entry point for a plugin.”

Id. at § 3 (p. 3, second col., ¶ 2). *See also id.* at § 3.2 (p. 5, second col., ¶ 5) (description of step 1 depicted in Fig. 3). Various gates in the control path for a given IP packet are highlighted in the annotated version of Figure 3 shown above.

Decasper discloses two different types of data structures that use filters: filter tables and flow tables. *See* Decasper at § 3.2 (p. 5, first col., ¶¶ 2, 3). When a packet arrives at a gate, the “task of [the] gate is to find the plugin instance” that is responsible for applying the processing corresponding to that gate. *See id.* at § 3.2 (p. 5, second col., ¶ 5) (description of step 1 depicted in Fig. 3). In order to find the right plugin, an identification unit (AIU in the above Figure) first accesses a flow table to determine if a matching six-tuple for the packet has already been cached. *Id.* at § 3.2 (p. 5, second col., ¶ 7) (description of step 3 depicted in Fig. 3). “Flow tables allow for very fast lookup times for arriving packets that belong to cached flows.” *Id.* at § 3.2 (p. 5, first col., ¶ 2). In the disclosed embodiment, “entries in the flow table are identified by the same six tuple used to specify filters, but without masks or wildcards.” *Id.* at § 3.2 (p. 5, second col., ¶ 7) (description of step 3 depicted in Fig. 3). For example, as indicated in the flow table shown in

Figure 3, a packet having the six tuple (129.133.50.50.2, 128.252.50.21, TCP, 1234, 25, 0) maps to the following plugins: SEC1, PS1, RT1, OPT1.

If there is no cached entry in a flow table, a filter table is accessed and “the resulting plugin instance pointer is returned to the calling gate.” *See* Decasper at § 3.2 (p. 5, second col., ¶ 7) (description of step 3 depicted in Fig. 3). The gate then “calls the plugin instance, passing the packet as an argument.” *Id.* This process is repeated at each gate in the IP core for a given packet. *See id.* at § 3.2 (p. 5, second col., ¶ 11) (description of step 7 depicted in Fig. 3). Figure 3 depicts a separate filter table for each of four types of plugins: IPSEC, PS, BMP, IPOPT. *See id.* at Fig. 3. Instance pointers accessed from the filter table are cached in the flow table. *See id.* at § 3.2 (p. 5, second col., ¶ 8) (description of step 4 depicted in Fig. 3). Subsequently, “[w]hen a packet from a cached flow encounters the first gate” in the IP core, a “pointer to the [plugin] instance requested is already in the flow table.” *See id.* at § 3.2 (p. 6, first col., ¶ 3). “No filter table lookups are required.” *See id.*

Decasper’s Packet Classification Requires IP Packet Headers

As described above, Decasper uses both filter tables and flow tables to classify packets. With respect to filter table implementations (used for finding the appropriate plugin when a packet for an uncached flow reaches a gate in the IP core), Decasper “requires packets to be classified based upon the same five packet header fields and the interface on which the packet was received.” *See* Decasper at § 5.1 (p. 7, first col., ¶ 6). This six tuple includes the source address and destination address of the packet—information that is located in both IPv4 and IPv6 headers. Internet Protocol RFC 791, 11 (Jon Postel ed., September 1981) (included in an IDS submitted with this response). Similarly, Decasper’s flow table implementation also uses the source and destination IP addresses from the packet to calculate the hash index used to perform the lookup function. *See id.* at § 3.2 (p. 5, second col., ¶ 8) (description of step 4 depicted in Fig. 3), § 5.2 (p. 9, first col., ¶ 1, 2). Decasper emphasizes that all tuple values used to look up a filter in the flow table are fully specified—that is, no wildcards. *See id.* at § 3.2 (p. 5, second col., ¶ 8) (description of step 4 depicted in Fig. 3). Given the use of IP header information to implement both filter table and flow table lookups, Decasper does not contemplate classifying packets other than IP packets. For example, nothing in Decasper contemplates processing a non-IP packet format such as a TCP packet, since such headers do not have the source and destination IP

addresses needed for Decasper's packet classification scheme.⁴ Because each gate in Decasper's IP core must receive an IP packet in order to perform such classification, it follows that Decasper's plugins do not convert an IP packet into a non-IP format (e.g., a TCP format). An initial gate in Decasper's IP core, for example, must produce an output packet that can be processed by a subsequent gate. If the plugin tied to the initial gate in Decasper's IP core removed the IP header portion of a packet, for example, the resulting output packet would not be able to be classified at the subsequent gate. The conclusion that Decasper contemplates processing only IP packets is consistent with Decasper's implementation of an IP router using an IP core that executes an IP protocol.

Claim 26

Given the preceding discussion, Applicant submits that Decasper does not teach or suggest "process[ing] packets in the message using [a] sequence of routines in the created path, **wherein the sequence includes a routine that is used to execute a Transmission Control Protocol (TCP) to convert packets having a TCP format into a different format,**" as recited in claim 26.

Assuming *arguendo* that Decasper's plugins or flows correspond to the "sequence of routines" of claim 26 (which Applicant does not concede), Decasper does not teach or suggest that any of the plugins operates on "packets having a TCP format" let alone "convert[ing]" such packets "into a different format," as recited in that claim. Rather, as discussed at length above, Decasper's packet classification scheme relies on IP headers remaining with packets throughout the IP core. For at least these reasons, Applicant respectfully submits that Decasper does not teach or suggest the combination of features recited in claim 26. Accordingly, Applicant submits that claim 26 and its dependent claims are patentably distinct over Decasper. Independent claims 33 and 41 include features that are similar to those recited in claim 26. Thus, Applicant submits

⁴ Additionally, it is well known that the Transmission Control Protocol (TCP) is implemented at the endpoints of a connection. Decasper, on the other hand, discloses a router architecture that stands in contrast to "modular end-system networking subsystems." See Decasper § 2 (p. 2, second col., ¶ 5). Accordingly, the fact that Decasper refers to a plugin that can monitor "TCP congestion backoff behavior," *see id.* § 3 (p. 4, first col., ¶ 1), does not refer to a plugin that executes the TCP protocol (i.e., operates on a packet whose outermost header is a TCP header). Given the discussion of Decasper's classification scheme provided above, plugins in Decasper's routing architecture operate on IP packets. The monitoring of TCP congestion backoff behavior in Decasper can thus be considered akin to the statistics gathering functions of other disclosed plugins, and not as the implementation of the TCP protocol.

claims 33 and 41, along with their respective dependent claims, are patentably distinct over Decasper for at least reasons similar to those provided in support of claim 26.

Claim 50

With respect to claim 50, Applicant submits that Decasper does not teach or suggest “process[ing] packets of the message, including by **removing an outermost header of a given packet using a first session** corresponding to a protocol in a first layer and by **removing the resulting outermost header using a second session corresponding to a different protocol** in a different layer.” Each of the gates in Decasper operates on a packet having an IP header. In fact, as explained above, Decasper’s gates *rely* on the presence of IP headers in the packets to properly classify the packets. It therefore follows that Decasper’s plugins do not operate to “remov[e] an outermost header of a given packet” and “remov[e] the resulting outermost header.” Further, Decasper does not teach or suggest “using a second session corresponding to a different protocol” to “remov[e] the resulting outermost header” at least because Decasper does not teach sessions corresponding to different protocols.

For at least the reasons given above, Applicant respectfully submits that Decasper does not teach or suggest the combination of features recited in claim 50. Accordingly, Applicant submits that claim 50 and its dependent claims are patentably distinct over Decasper.

CONCLUSION

Applicants submit the application is in condition for allowance, and an early notice to that effect is requested.

The Commissioner is authorized to charge any fees that may be required, or credit any overpayment, to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 501505/6743-00105/DMM.

Respectfully submitted,

Date: June 6, 2013

By: /Dean M. Munyon/
Dean M. Munyon
Reg. No. 42,914

Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.
P. O. Box 398
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(512) 853-8847

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Filer:	Dean M. Munyon/Deena Beasley
Attorney Docket Number:	6743-00105

Filed as Large Entity

Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility application filing	1011	1	280	280
Utility Search Fee	1111	1	600	600
Utility Examination Fee	1311	1	720	720
Request for Prioritized Examination	1817	1	4000	4000
Pages:				
Claims:				
Claims in Excess of 20	1202	10	80	800
Independent claims in excess of 3	1201	1	420	420

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous-Filing:				
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300
OTHER PUBLICATION PROCESSING FEE	1808	1	130	130
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				7250

Electronic Acknowledgement Receipt

EFS ID:	15966847
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon/Deena Beasley
Filer Authorized By:	Dean M. Munyon
Attorney Docket Number:	6743-00105
Receipt Date:	06-JUN-2013
Filing Date:	
Time Stamp:	13:33:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$7250
RAM confirmation Number	11345
Deposit Account	501505
Authorized User	MUNYON, DEAN M.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Juniper Ex. 1004-p. 24

Juniper v Implicit

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	TrackOne Request	Certification_and_Request_for_Prioritized_Examination.pdf	145206 d36f55b297b704cb19884283147af08acbaaa02a	no	2

Warnings:

Information:

2		6743-00105_Continuation_Application.pdf	1679600 21100422737f0217bcc489623ef08dcdcbdd71a4	yes	29
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Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	24
Claims	25	28
Abstract	29	29

Warnings:

Information:

3	Drawings-only black and white line drawings	6743-00105_Drawings.pdf	274667 1c392197091517c3dc8ae22ffcad5183429589ed	no	16
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Warnings:

Information:

4	Oath or Declaration filed	6743-00105_Declaration.pdf	36499 c2ba64adfe9c8b97c727349b8ecceb314db97c61	no	2
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Warnings:

Information:

5	Power of Attorney	POA_AIA82A.pdf	50768 863d8a42e4929fb6581e00acf0011fa6ba8e94bd	no	3
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Warnings:

Information:

6	Application Data Sheet	6743-00105_ADS.pdf	1503097 73c4404a9f935411c4344f4de4f5bae097f0d41d	no	6
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Warnings:

Information:					
7	Information Disclosure Statement (IDS) Form (SB08)	6743-00105_IDS.pdf	611733 9fade266e49ebc782ddd7a2d0e5c0182b64c87ae	no	4
Warnings:					
Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
8	Non Patent Literature	N1_rfc791.pdf	76924 3496b3868195fb3077d59a16ba0f9eca5483d0d8	no	52
Warnings:					
Information:					
9		6743-00105_Preliminary_Amendment.pdf	832583 f1273eb79bd080700854dac1dba9639b6f6b4a9d	yes	21
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Preliminary Amendment		1	1	
	Specification		2	2	
	Claims		3	7	
	Applicant Arguments/Remarks Made in an Amendment		8	21	
Warnings:					
Information:					
10	Fee Worksheet (SB06)	fee-info.pdf	43111 10898a8a465a3344aa49e369b3c0602cf8f54212	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			5254188		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION
 UNDER 37 CFR 1.102(e)** (Page 1 of 1)

First Named Inventor:	Edward Balassanian	Nonprovisional Application Number (if known):	
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i), the prioritized examination fee set forth in 37 CFR 1.17(c), and if not already paid, the publication fee set forth in 37 CFR 1.18(d) have been filed with the request. The basic filing fee, search fee, examination fee, and any required excess claims and application size fees are filed with the request or have been already been paid.
2. The application contains or is amended to contain no more than four independent claims and no more than thirty total claims, and no multiple dependent claims.

3. The applicable box is checked below:

I. Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

- i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.
 ---OR---
 (b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
- ii. An executed oath or declaration under 37 CFR 1.63 is filed with the application.

II. Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

- i. A request for continued examination has been filed with, or prior to, this form.
- ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
- iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
- iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
- v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Dean M. Munyon/	Date June 6, 2013
Name (Print/Typed) Dean M. Munyon	Practitioner Registration Number 42914

Note: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature. If necessary, submit multiple forms for more than one signature, see below*.

*Total of _____ forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

METHOD AND SYSTEM FOR DATA DEMULTIPLEXING

5

CROSS REFERENCES TO RELATED APPLICATIONS

10 [0001] This application is a continuation of U.S. patent application Ser. No. 10/636,314,
filed August 6, 2003, titled Method and System for Data Demultiplexing, for all purposes
including but not limited to the right of priority and benefit of earlier filing date, and expressly
incorporates by reference the entire content of Patent Application Serial No. 10/636,314 for all
purposes. U.S. patent application Ser. No. 10/636,314 is a continuation of U.S. patent application
15 Ser. No. 09/474,664 (now U.S. Patent No. 6,629,163), filed December 29, 1999, titled Method
and System for Demultiplexing a First Sequence of Packet Components to Identify Specific
Components Wherein Subsequent Components Are Processed Without Re-Identifying
Components. This application claims the benefit of the following applications for all purposes
including but not limited to the right of priority and benefit of earlier filing date, and expressly
20 incorporates by reference the entire content of the following applications for all purposes: U.S.
patent application Ser. No. 10/636,314; and U.S. patent application Ser. No. 09/474,664.

TECHNICAL FIELD

[0002] The present invention relates generally to a computer system for data demultiplexing.

BACKGROUND

25 [0003] Computer systems, which are becoming increasingly pervasive, generate data in a
wide variety of formats. The Internet is an example of interconnected computer systems that
generate data in many different formats. Indeed, when data is generated on one computer system
and is transmitted to another computer system to be displayed, the data may be converted in

many different intermediate formats before it is eventually displayed. For example, the generating computer system may initially store the data in a bitmap format. To send the data to another computer system, the computer system may first compress the bitmap data and then encrypt the compressed data. The computer system may then convert that compressed data into a TCP format and then into an IP format. The IP formatted data may be converted into a transmission format, such as an ethernet format. The data in the transmission format is then sent to a receiving computer system. The receiving computer system would need to perform each of these conversions in reverse order to convert the data in the bitmap format. In addition, the receiving computer system may need to convert the bitmap data into a format that is appropriate for rendering on output device.

[0004] In order to process data in such a wide variety of formats, both sending and receiving computer systems need to have many conversion routines available to support the various formats. These computer systems typically use predefined configuration information to load the correct combination of conversion routines for processing data. These computer systems also use a process-oriented approach when processing data with these conversion routines. When using a process-oriented approach, a computer system may create a separate process for each conversion that needs to take place. A computer system in certain situations, however, can be expected to receive data and to provide data in many different formats that may not be known until the data is received. The overhead of statically providing each possible series of conversion routines is very high. For example, a computer system that serves as a central controller for data received within a home would be expected to process data received via telephone lines, cable TV lines, and satellite connections in many different formats. The central controller would be expected to output the data to computer displays, television displays, entertainment centers, speakers, recording devices, and so on in many different formats. Moreover, since the various conversion routines may be developed by different organizations, it may not be easy to identify

that the output format of one conversion routine is compatible with the input format of another conversion routine.

[0005] It would be desirable to have a technique for dynamically identifying a series of conversion routines for processing data. In addition, it would be desirable to have a technique in which the output format of one conversion routine can be identified as being compatible with the input format of another conversion routine. It would also be desirable to store the identification of a series of conversion routines so that the series can be quickly identified when data is received.

BRIEF DESCRIPTION OF THE DRAWINGS

10 [0006] Figure 1 is a block diagram illustrating example processing of a message by the conversion system.

[0007] Figure 2 is a block diagram illustrating a sequence of edges.

[0008] Figure 3 is a block diagram illustrating components of the conversion system in one embodiment.

15 [0009] Figure 4 is a block diagram illustrating example path data structures in one embodiment.

[0010] Figure 5 is a block diagram that illustrates the interrelationship of the data structures of a path.

[0011] Figure 6 is a block diagram that illustrates the interrelationship of the data structures associated with a session.

[0012] Figures 7 A, 7B, and 7C comprise a flow diagram illustrating the processing of the message send routine.

[0013] Figure 8 is a flow diagram of the demux routine.

[0014] Figure 9 is a flow diagram of the initialize demux routine.

[0015] Figure 10 is a flow diagram of the init end routine.

[0016] Figure 11 is a flow diagram of a routine to get the next binding.

[0017] Figure 12 is a flow diagram of the get key routine.

5 [0018] Figure 13 is a flow diagram of the get session routine.

[0019] Figure 14 is a flow diagram of the nail binding routine.

[0020] Figure 15 is a flow diagram of the find path routine.

[0021] Figure 16 is a flow diagram of the process of path hopping routine.

DETAILED DESCRIPTION

10 [0022] A method and system for converting a message that may contain multiple packets from an source format into a target format. When a packet of a message is received, the conversion system in one embodiment searches for and identifies a sequence of conversion routines (or more generally message handlers) for processing the packets of the message by comparing the input and output formats of the conversion routines. (A message is a collection of
15 data that is related in some way, such as stream of video or audio data or an email message.) The identified sequence of conversion routines is used to convert the message from the source format to the target format using various intermediate formats. The conversion system then queues the packet for processing by the identified sequence of conversion routines. The conversion system stores the identified sequence so that the sequence can be quickly found (without searching)
20 when the next packet in the message is received. When subsequent packets of the message are received, the conversion system identifies the sequence and queues the packets for pressing by the sequence. Because the conversion system receives multiple messages with different source and target formats and identifies a sequence of conversion routines for each message, the

conversion systems effectively "demultiplexes" the messages. That is, the conversion system demultiplexes the messages by receiving the message, identifying the sequence of conversion routines, and controlling the processing of each message by the identified sequence. Moreover, since the conversion routines may need to retain state information between the receipt of one
5 packet of a message and the next packet of that message, the conversion system maintains state information as an instance or session of the conversion routine. The conversion system routes all packets for a message through the same session of each conversion routine so that the same state or instance information can be used by all packets of the message. A sequence of sessions of conversion routines is referred to as a "path." In one embodiment, each path has a path thread
10 associated with it for processing of each packet destined for that path.

[0023] In one embodiment, the packets of the messages are initially received by "drivers," such as an Ethernet driver. When a driver receives a packet, it forwards the packet to a forwarding component of the conversion system. The forwarding component is responsible for identifying the session of the conversion routine that should next process the packet and invoking
15 that conversion routine. When invoked by a driver, the forwarding component may use a demultiplexing ("demux") component to identify the session of the first conversion routine of the path that is to process the packet and then queues the packet for processing by the path. A path thread is associated with each path. Each path thread is responsible for retrieving packets from the queue of its path and forwarding the packets to the forwarding component. When the
20 forwarding component is invoked by a path thread, it initially invokes the first conversion routine in the path. That conversion routine processes the packet and forwards the processed packet to the forwarding component, which then invokes the second conversion routine in the path. The process of invoking the conversion routines and forwarding the processed packet to the next conversion routine continues until the last conversion routine in the path is invoked. A
25 conversion routine may defer invocation of the forwarding component until it aggregates

multiple packets or may invoke the forwarding component multiple times for a packet once for each sub-packet.

[0024] The forwarding component identifies the next conversion routine in the path using the demux component and stores that identification so that the forwarding component can quickly
5 identify the conversion routine when subsequent packets of the same message are received. The demux component searches for the conversion routine and session that is to next process a packet. The demux component then stores the identification of the session and conversion routine as part of a path data structure so that the conversion system does not need to search for the session and conversion routine when requested to demultiplex subsequent packets of the
10 same message. When searching for the next conversion routine, the demux component invokes a label map get component that identifies the next conversion routine. Once the conversion routine is found, the demux component identifies the session associated with that message by, in one embodiment, invoking code associated with the conversion routine. In general, the code of the conversion routine determines what session should be associated with a message. In certain
15 situations, multiple messages may share the same session. The demux component then extends the path for processing that packet to include that session and conversion routine. The sessions are identified so that each packet is associated with the appropriate state information. The dynamic identification of conversion routines is described in U.S. Patent Application No. 11,933,093, filed on Oct. 31, 2007 (now U.S. Patent No. 7,730,211), entitled "Method and System
20 for Generating a Mapping Between Types of Data," which is hereby incorporated by reference.

[0025] Figure 1 is a block diagram illustrating example processing of a message by the conversion system. The driver 101 receives the packets of the message from a network. The driver performs any appropriate processing of the packet and invokes a message send routine passing the processed packet along with a reference path entry 150. The message send routine is
25 an embodiment of the forwarding component. A path is represented by a series of path entries,

which are represented by triangles. Each member path entry represents a session and conversion routine of the path, and a reference path entry represents the overall path. The passed reference path entry 150 indicates to the message send routine that it is being invoked by a driver. The message send routine invokes the demux routine 102 to search for and identify the path of sessions that is to process the packet. The demux routine may in turn invoke the label map get routine 104 to identify a sequence of conversion routines for processing the packet. In this example, the label map get routine identifies the first three conversion routines, and the demux routine creates the member path entries 151, 152, 153 of the path for these conversion routines. Each path entry identifies a session for a conversion routine, and the sequence of path entries 151-155 identifies a path. The message send routine then queues the packet on the queue 149 for the path that is to process the packets of the message. The path thread 105 for the path retrieves the packet from the queue and invokes the message send routine 106 passing the packet and an indication of the path. The message send routine determines that the next session and conversion routine as indicated by path entry 151 has already been found. The message send routine then invokes the instance of the conversion routine for the session. The conversion routine processes the packet and then invokes the message send routine 107. This processing continues until the message send routine invokes the demux routine 110 after the packet is processed by the conversion routine represented by path entry 153. The demux routine examines the path and determines that it has no more path entries. The demux routine then invokes the label map get routine 111 to identify the conversion routines for further processing of the packet. When the conversion routines are identified, the demux routine adds path entries 154, 155 to the path. The message send routine invokes the conversion routine associated with path entry 154. Eventually, the conversion routine associated with path entry 155 performs the final processing for the path.

[0026] The label map get routine identifies a sequence of "edges" for converting data in one format into another format. Each edge corresponds to a conversion routine for converting data

from one format to another. Each edge is part of a "protocol" (or more generally a component) that may include multiple related edges. For example, a protocol may have edges that each convert data in one format into several different formats. Each edge has an input format and an output format. The label map get routine identifies a sequence of edges such that the output
5 format of each edge is compatible with the input format of another edge in the sequence, except for the input format of the first edge in the sequence and the output format of the last edge in the sequence. Figure 2 is a block diagram illustrating a sequence of edges. Protocol P1 includes an edge for converting format D1 to format D2 and an edge for converting format D1 to format D3; protocol P2 includes an edge for converting format D2 to format D5, and so on. A sequence
10 for converting format D 1 to format D 15 is shown by the curved lines and is defined by the address "P 1 : I, P2: 1, P3 :2, P4:7." When a packet of data in format D I is processed by this sequence, it is converted to format D I5. During the process, the packet of data is sequentially converted to format D2, D5, and D13. The output format of protocol P2, edge 1 (*i.e.*, P2: 1) is format D5, but the input format of P3:2 is format D10. The label map get routine uses an aliasing
15 mechanism by which two formats, such as D5 and D10 are identified as being compatible. The use of aliasing allows different names of the same format or compatible formats to be correlated.

[0027] Figure 3 is a block diagram illustrating components of the conversion system in one embodiment. The conversion system 300 can operate on a computer system with a central processing unit 301, I/O devices 302, and memory 303. The 110 devices may include an Internet
20 connection, a connection to various output devices such as a television, and a connection to various input devices such as a television receiver. The media mapping system may be stored as instructions on a computer-readable medium, such as a disk drive, memory, or data transmission medium. The data structures of the media mapping system may also be stored on a computer-readable medium. The conversion system includes drivers 304, a forwarding component 305, a
25 demux component 306, a label map get component 307, path data structures 308, conversion

routines 309, and instance data 310. Each driver receives data in a source format and forwards the data to the forwarding component. The forwarding component identifies the next conversion routine in the path and invokes that conversion routine to process a packet. The forwarding component may invoke the demux component to search for the next conversion routine and add
5 that conversion routine to the path. The demux component may invoke the label map get component to identify the next conversion routine to process the packet. The demux component stores information defining the paths in the path structures. The conversion routines store their state information in the instance data.

[0028] Figure 4 is a block diagram illustrating example path data structures in one
10 embodiment. The demux component identifies a sequence of "edges" for converting data in one format into another format by invoking the label map get component. Each edge corresponds to a conversion routine for converting data from one format to another. As discussed above, each edge is part of a "protocol" that may include multiple related edges. For example, a protocol may have edges that each convert data in one format into several different formats. Each edge has as
15 an input format ("input label") and an output format ("output label"). Each rectangle represents a session 410, 420, 430, 440, 450 for a protocol. A session corresponds to an instance of a protocol. That is, the session includes the protocol and state information associated with that instance of the protocol. Session 410 corresponds to a session for an Ethernet protocol; session 420 corresponds to a session for an IP protocol; and sessions 430, 440, 450 correspond to
20 sessions for a TCP protocol. Figure 4 illustrates three paths 461, 462, 463. Each path includes edges 411, 421, 431. The paths share the same Ethernet session 410 and IP session 420, but each path has a unique TCP session 430, 440, 450. Thus, path 461 includes sessions 410, 420, and 430; path 462 includes sessions 410, 420, and 440; and path 463 includes sessions 410, 420, and 450. The conversion system represents each path by a sequence of path entry structures. Each
25 path entry structure is represented by a triangle. Thus, path 461 is represented by path entries

415, 425, and 433. The conversion system represents the path entries of a path by a stack list. Each path also has a queue 471, 472, 473 associated with it. Each queue stores the messages that are to be processed by the conversion routines of the edges of the path. Each session includes a binding 412, 422, 432, 442, 452 that is represented by an oblong shape adjacent to the
5 corresponding edge. A binding for an edge of a session represents those paths that include the edge. The binding 412 indicates that three paths are bound (or "nailed") to edge 411 of the Ethernet session 410. The conversion system uses a path list to track the paths that are bound to a binding. The path list of binding 412 identifies path entries 413, 414, and 415.

[0029] Figure 5 is a block diagram that illustrates the interrelationship of the data structures
10 of a path. Each path has a corresponding path structure 501 that contains status information and pointers to a message queue structure 502, a stack list structure 503, and a path address structure 504. The status of a path can be extend, continue, or end. Each message handler returns a status for the path. The status of extend means that additional path entries should be added to the path. The status of end means that this path should end at this point and subsequent processing should
15 continue at a new path. The status of continue means that the protocol does not care how the path is handled. In one embodiment, when a path has a status of continue, the system creates a copy of the path and extends the copy. The message queue structure identifies the messages (or packets of a message) that are queued up for processing by the path and identifies the path entry at where the processing should start. The stack list structure contains a list of pointers to the path
20 entry structures 505 that comprise the path. Each path entry structure contains a pointer to the corresponding path data structure, a pointer to a map structure 507, a pointer to a multiplex list 508, a pointer to the corresponding path address structure, and a pointer to a member structure 509. A map structure identifies the output label of the edge of the path entry and optionally a target label and a target key. A target key identifies the session associated with the protocol that
25 converts the packet to the target label. (The terms "media," "label," and "format" are used

interchangeably to refer to the output of a protocol.) The multiplex list is used during the demux process to track possible next edges when a path is being identified as having more than one next edge. The member structure indicates that the path entry represents an edge of a path and contains a pointer to a binding structure to which the path entry is associated (or "nailed"), a stack list entry is the position of the path entry within the associated stack list, a path list entry is the position of the path entry within the associated path list of a binding and an address entry is the position of the binding within the associated path address. A path address of a path identifies the bindings to which the path entries are bound. The path address structure contains a URL for the path, the name of the path identified by the address, a pointer to a binding list structure 506, and the identification of the current binding within the binding list. The URL (*e.g.*, "protocol://tcp(0)/ip(0)/eth(0)") identifies conversion routines (*e.g.*, protocols and edges) of a path in a human-readable format. The URL (universal resource locator) includes a type field (*e.g.*, "protocol") followed by a sequence of items (*e.g.*, "tcp(0)"). The type field specifies the format of the following information in the URL, that specifies that the type field is followed by a sequence of items. Each item identifies a protocol and an edge (*e.g.*, the protocol is "tcp" and the edge is "0"). In one embodiment, the items of a URL may also contain an identifier of state information that is to be used when processing a message. These URLs can be used to illustrate to a user various paths that are available for processing a message. The current binding is the last binding in the path as the path is being built. The binding list structure contains a list of pointers to the binding structures associated with the path. Each binding structure 510 contains a pointer to a session structure, a pointer to an edge structure, a key, a path list structure, and a list of active paths through the binding. The key identifies the state information for a session of a protocol. A path list structure contains pointers to the path entry structures associated with the binding.

[0030] Figure 6 is a block diagram that illustrates the interrelationship of the data structures associated with a session. A session structure 601 contains the context for the session, a pointer

to a protocol structure for the session, a pointer to a binding table structure 602 for the bindings associated with the session, and the key. The binding table structure contains a list of pointers to the binding structures 510 for the session. The binding structure is described above with reference to Figure 5. The path list structure 603 of the binding structure contains a list of pointers to path entry structures 505. The path entry structures are described with reference to Figure 5.

[0031] Figures 7 A, 7B, and 7C comprise a flow diagram illustrating the processing of the message send routine. The message send routine is passed a message along with the path entry associated with the session that last processed the message. The message send routine invokes the message handler of the next edge in the path or queues the message for processing by a path. The message handler invokes the demux routine to identify the next path entry of the path. When a driver receives a message, it invokes the message send routine passing a reference path entry. The message send routine examines the passed path entry to determine (1) whether multiple paths branch from the path of the passed path entry, (2) whether the passed path entry is a reference with an associated path, or (3) whether the passed path entry is a member with a next path entry. If multiple paths branch from the path of the passed path entry, then the routine recursively invokes the message send routine for each path. If the path entry is a reference with an associated path, then the driver previously invoked the message send routine, which associated a path with the reference path entry, and the routine places the message on the queue for the path. If the passed path entry is a member with a next path entry, then the routine invokes the message handler (*i.e.*, conversion routine of the edge) associated with the next path entry. If the passed path entry is a reference without an associated path or is a member without a next path entry, then the routine invokes the demux routine to identify the next path entry. The routine then recursively invokes the messages send routine passing that next path entry. In decision block 701, if the passed path entry has a multiplex list, then the path branches off into multiple paths

and the routine continues at block 709, else the routine continues at block 702. A packet may be processed by several different paths. For example, if a certain message is directed to two different output devices, then the message is processed by two different paths. Also, a message may need to be processed by multiple partial paths when searching for a complete path. In
5 decision block 702, if the passed path entry is a member, then either the next path entry indicates a nailed binding or the path needs to be extended and the routine continues at block 704, else the routine continues at block 703. A nailed binding is a binding (e.g., edge and protocol) is associated with a session. In decision block 703, the passed path entry is a reference and if the passed path entry has an associated path, then the routine can queue the message for the
10 associated path and the routine continues at block 703A, else the routine needs to identify a path and the routine continues at block 707. In block 703A, the routine sets the entry to the first path entry in the path and continues at block 717. In block 704, the routine sets the variable position to the stack list entry of the passed path entry. In decision block 705, the routine sets the variable next entry to the next path entry in the path. If there is a next entry in the path, then the next
15 session and edge of the protocol have been identified and the routine continues at block 706, else the routine continues at block 707. In block 706, the routine passes the message to the message handler of the edge associated with the next entry and then returns. In block 706, the routine invokes the demux routine passing the passed message, the address of the passed path entry, and the passed path entry. The demux routine returns a list of candidate paths for processing of the
20 message. In decision block 708, if at least one candidate path is returned, then the routine continues at block 709, else the routine returns.

[0032] Blocks 709-716 illustrate the processing of a list of candidate paths that extend from the passed path entry. In blocks 710-716, the routine loops selecting each candidate path and sending the message to be process by each candidate path. In block 710, the routine sets the next
25 entry to the first path entry of the next candidate path. In decision block 711, if all the candidate

paths have not yet been processed, then the routine continues at block 712, else the routine returns. In decision block 712, if the next entry is equal to the passed path entry, then the path is to be extended and the routine continues at block 705, else the routine continues at block 713. The candidate paths include a first path entry that is a reference path entry for new paths or that is the last path entry of a path being extended. In decision block 713, if the number of candidate paths is greater than one, then the routine continues at block 714, else the routine continues at block 718. In decision block 714, if the passed path entry has a multiplex list associated with it, then the routine continues at block 716, else the routine continues at block 715. In block 715, the routine associates the list of candidate path with the multiplex list of the passed path entry and continues at block 716. In block 716, the routine sends the message to the next entry by recursively invoking the message send routine. The routine then loops to block 710 to select the next entry associated with the next candidate path.

[0033] Blocks 717-718 are performed when the passed path entry is a reference path entry that has a path associated with it. In block 717, if there is a path associated with the next entry, then the routine continues at block 718, else the routine returns. In block 718, the routine queues the message for the path of the next entry and then returns.

[0034] Figure 8 is a flow diagram of the demux routine. This routine is passed the packet (message) that is received, an address structure, and a path entry structure. The demux routine extends a path, creating one if necessary. The routine loops identifying the next binding (edge and protocol) that is to process the message and "nailing" the binding to a session for the message, if not already nailed. After identifying the nailed binding, the routine searches for the shortest path through the nailed binding, creating a path if none exists. In block 801, the routine invokes the initialize demux routine. In blocks 802-810, the routine loops identifying a path or portion of a path for processing the passed message. In decision block 802, if there is a current status, which was returned by the demuxkey routine that was last invoked (*e.g.*, continue, extend,

end, or postpone), then the routine continues at block 803, else the routine continues at block 811. In block 803, the routine invokes the get next binding routine. The get next binding routine returns the next binding in the path. The binding is the edge of a protocol. That routine extends the path as appropriate to include the binding. The routine returns a return status of break,
5 binding, or multiple. The return status of binding indicates that the next binding in the path was found by extending the path as appropriate and the routine continues to "nail" the binding to a session as appropriate. The return status of multiple means that multiple trails (*e.g.*, candidate paths) were identified as possible extensions of the path. In a decision block 804, if the return status is break, then the routine continues at block 811. If the return status is multiple, then the
10 routine returns. If the return status is binding, then the routine continues at block 805. In decision block 805, if the retrieved binding is nailed as indicated by being assigned to a session, then the routine loops to block 802, else the routine continues at block 806. In block 806, the routine invokes the get key routine of the edge associated with the binding. The get key routine creates the key for the session associated with the message. If a key cannot be created until subsequent
15 bindings are processed or because the current binding is to be removed, then the get key routine returns a next binding status, else it returns a continue status. In decision block 807, if the return status of the get key routine is next binding, then the routine loops to block 802 to get the next binding, else the routine continues at block 808. In block 808, the routine invokes the routine get session. The routine get session returns the session associated with the key, creating a new
20 session if necessary. In block 809, the routine invokes the routine nail binding. The routine nail binding retrieves the binding if one is already nailed to the session. Otherwise, that routine nails the binding to the session. In decision block 810, if the nail binding routine returns a status of simplex, then the routine continues at block 811 because only one path can use the session, else the routine loops to block 802. Immediately upon return from the nail binding routine, the
25 routine may invoke a set map routine of the edge passing the session and a map to allow the edge

to set its map. In block 811, the routine invokes the find path routine, which finds the shortest path through the binding list and creates a path if necessary. In block 812, the routine invokes the process path hopping routine, which determines whether the identified path is part of a different path. Path hopping occurs when, for example, IP fragments are built up along separate paths, but
5 once the fragments are built up they can be processed by the same subsequent path.

[0035] Figure 9 is a flow diagram of the initialize demux routine. This routine is invoked to initialize the local data structures that are used in the demux process and to identify the initial binding. The demux routine finds the shortest path from the initial binding to the final binding. If the current status is demux extend, then the routine is to extend the path of the passed path entry
10 by adding additional path entries. If the current status is demux end, then the demux routine is ending the current path. If the current status is demux continue, then the demux routine is in the process of continuing to extend or in the process of starting a path identified by the passed address. In block 901, the routine sets the local map structure to the map structure in the passed path entry structure. The map structure identifies the output label, the target label, and the target
15 key. In the block 902, the routine initializes the local message structure to the passed message structure and initializes the pointers path and address element to null. In block 903, the routine sets of the variable saved status to 0 and the variable status to demux continue. The variable saved status is used to track the status of the demux process when backtracking to nail a binding whose nail was postponed. In decision block 904, if the passed path entry is associated with a
20 path, then the routine continues at block 905, else the routine continues at block 906. In block 905, the routine sets the variable status to the status of that path. In block 906, if the variable status is demux continue, then the routine continues at block 907. If the variable status is demux end, then the routine continues at block 908. If the variable status is demux extend, then the routine continues at block 909. In block 907, the status is demux continue, and the routine sets
25 the local pointer path address to the passed address and continues at block 911. In block 908, the

status is demux end, and the routine invokes the init end routine and continues at block 911. In block 909, the status is demux extend, and the routine sets the local path address to the address of the path that contains the passed path entry. In block 910, the routine sets the address element and the current binding of the path address pointed to by the local pointer path address to the address entry of the member structure of the passed path entry. In the block 911, the routine sets the local variable status to demux continue and sets the local binding list structure to the binding list structure from the local path address structure. In block 912, the routine sets the local pointer current binding to the address of the current binding pointed to by local pointer path address and sets the local variable postpone to 0. In block 913, the routine sets the function traverse to the function that retrieves the next data in a list and sets the local pointer session to null. The routine then returns.

[0036] Figure 10 is a flow diagram of the init end routine. If the path is simplex, then the routine creates a new path from where the other one ended, else the routine creates a copy of the path. In block 1001, if the binding of the passed path entry is simplex (*i.e.*, only one path can be bound to this binding), then the routine continues at block 1002, else the routine continues at block 1003. In block 1002, the routine sets the local pointer path address to point to an address structure that is a copy of the address structure associated with the passed path entry structure with its current binding to the address entry associated with the passed path entry structure, and then returns. In block 1003, the routine sets the local pointer path address to point to an address structure that contains the URL of the path that contains the passed path entry. In block 1004, the routine sets the local pointer element to null to initialize the selection of the bindings. In blocks 1005 through 1007, the routine loops adding all the bindings for the address of the passed path entry that include and are before the passed path entry to the address pointed to by the local path address. In block 1005, the routine retrieves the next binding from the binding list starting with the first. If there is no such binding, then the routine returns, else the routine continues at block

1006. In block 1006, the routine adds the binding to the binding list of the local path address structure and sets the current binding of the local variable path address. In the block 1007, if the local pointer element is equal to the address entry of the passed path entry, then the routine returns, else the routine loops to block 1005 to select the next binding.

5 [0037] Figure 11 is a flow diagram of a routine to get the next binding. This routine returns the next binding from the local binding list. If there is no next binding, then the routine invokes the routine label map get to identify the list of edges ("trails") that will map the output label to the target label. If only one trail is identified, then the binding list of path address is extended by the edges of the trail. If multiple trails are identified, then a path is created for each trail and the routine returns so that the demux process can be invoked for each created path. In block 11 01,
10 the routine sets the local pointer binding to point to the next or previous (as indicated by the traverse function) binding in the local binding list. In block 1102, if a binding was found, then the routine returns an indication that a binding was found, else the routine continues at block 1103. In block 1103, the routine invokes the label map get function passing the output label and
15 target label of the local map structure. The label map get function returns a trail list. A trail is a list of edges from the output label to the target label. In decision block 1104, if the size of the trail list is one, then the routine continues at block 1105, else the routine continues at block 1112. In blocks 1105-1111, the routine extends the binding list by adding a binding data structure for each edge in the trail. The routine then sets the local binding to the last binding in the binding
20 list. In block 1108, the routine sets the local pointer current binding to point to the last binding in the local binding list. In block 1106, the routine sets the local variable temp trail to the trail in the trail list. In block 1107, the routine extends the binding list by temp trail by adding a binding for each edge in the trail. These bindings are not yet nailed. In block 1108, the routine sets the local binding to point to the last binding in the local binding list. In decision block 1109, if the local
25 binding does not have a key for a session and the local map has a target key for a session, then

the routine sets the key for the binding to the target key of the local map and continues at block 1110, else the routine loops to block 1101 to retrieve the next binding in path. In block 1110, the routine sets the key of the local binding to the target key of the local map. In block 1111, the routine sets the target key of the local map to null and then loop to block 1101 to return the next
5 binding. In decision block 1112, if the local session is set, then the demultiplexing is already in progress and the routine returns a break status. In block 1113, the routine invokes a prepare multicast paths routine to prepare a path entry for each trail in the trail list. The routine then returns a multiple status.

[0038] Figure 12 is a flow diagram of the get key routine. The get key routine invokes an
10 edge's demuxkey routine to retrieve a key for the session associated with the message. The key identifies the session of a protocol. The demux key routine creates the appropriate key for the message. The demux key routine returns a status of remove, postpone, or other. The status of remove indicates that the current binding should be removed from the path. The status of postpone indicates that the demux key routine cannot create the key because it needs information
15 provided by subsequent protocols in the path. For example, a TCP session is defined by a combination of a remote and local port address and an IP address. Thus, the TCP protocol postpones the creating of a key until the IP protocol identifies the IP address. The get key routine returns a next binding status to continue at the next binding in the path. Otherwise, the routine returns a continue status. In block 1201, the routine sets the local edge to the edge of the local
20 binding (current binding) and sets the local protocol to the protocol of the local edge. In block 1202, the routine invokes the demux key routine of the local edge passing the local message, local path address, and local map. The demux key routine sets the key in the local binding. In decision block 1203, if the demux key routine returns a status of remove, then the routine continues at block 1204. If the demux key routine returns a status of postpone, then the routine
25 continues at block 1205, else the routine continues at block 1206. In block 1204, the routine sets

the flag of the local binding to indicate that the binding is to be removed and continues at block 1206. In block 1205, the routine sets the variable traverse to the function to list the next data, increments the variable postpone, and then returns a next binding status. In blocks 1206-1214, the routine processes the postponing of the creating of a key. In blocks 1207-1210, if the creating of a key has been postponed, then the routine indicates to backtrack on the path, save the demux status, and set the demux status to demux continue. In blocks 1211-1213, if the creating of a key has not been postponed, then the routine indicates to continue forward in the path and to restore any saved demux status. The save demux status is the status associated by the binding where the backtrack started. In decision block 1206, if the variable postpone is set, then the routine continues at block 1207, else the routine continues at block 1211. In block 1207, the routine decrements the variable postpone and sets the variable traverse to the list previous data function. In decision block 1208, if the variable saved status is set, then the routine continues at block 1210, else the routine continues at block 1209. The variable saved status contains the status of the demux process when the demux process started to backtrack. In block 1209, the routine sets the variable saved status to the variable status. In block 1210, the routine sets the variable status to demux continue and continues at block 1214. In block 1211, the routine sets the variable traverse to the list next data function. In decision block 1212, if the variable saved status is set, then the routine continues at block 1213, else the routine continues at block 1214. In block 1213, the routine sets the variable status to the variable saved status and sets the variable saved status to 0. In decision block 1214, if the local binding indicates that it is to be removed, then the routine returns a next binding status, else the routine returns a continue status.

[0039] Figure 13 is a flow diagram of the get session routine. This routine retrieves the session data structure, creating a data structure session if necessary, for the key indicated by the binding. In block 1301, the routine retrieves the session from the session table of the local protocol indicated by the key of the local binding. Each protocol maintains a mapping from each

key to the session associated with the key. In decision block 1302, if there is no session, then the routine continues at block 1303, else the routine returns. In block 1303, the routine creates a session for the local protocol. In block 1304, the routine initializes the key for the local session based on the key of the local binding. In block 1305, the routine puts the session into the session table of the local protocol. In block 1306, the routine invokes the create session function of the protocol to allow the protocol to initialize its context and then returns.

[0040] Figure 14 is a flow diagram of the nail binding routine. This routine determines whether a binding is already associated with ("nailed to") the session. If so, the routine returns that binding. If not, the routine associates the binding with the session. The routine returns a status of simplex to indicate that only one path can extend through the nailed binding. In decision block 1401, if the binding table of the session contains an entry for the edge, then the routine continues at block 1402, else the routine continues at block 1405. In block 1402, the routine sets the binding to the entry from the binding table of the local session for the edge. In block 1403, the routine sets the current binding to point to the binding from the session. In block 1404, if the binding is simplex, then the routine returns a simplex status, else the routine returns. Blocks 1405 through 1410 are performed when there is no binding in the session for the edge. In block 1405, the routine sets the session of the binding to the variable session. In block 1406, the routine sets the key of the binding to the key from the session. In block 1407, the routine sets the entry for the edge in the binding table of the local session to the binding. In block 1408, the routine invokes the create binding function of the edge of the binding passing the binding so the edge can initialize the binding. If that function returns a status of remove, the routine continues at block 1409. In block 1409, the routine sets the binding to be removed and then returns.

[0041] Figure 15 is a flow diagram of the find path routine. The find path routine identifies the shortest path through the binding list. If no such path exists, then the routine extends a path to include the binding list. In decision block 1501, if the binding is simplex and a path already goes

through this binding (returned as an entry), then the routine continues at block 1502, else the routine continues at block 1503. In block 1502, the routine sets the path to the path of the entry and returns. In block 1503, the routine initializes the pointers element and short entry to null. In block 1504, the routine sets the path to the path of the passed path entry. If the local path is not null and its status is demux extend, then the routine continues at block 1509, else the routine continues at block 1505. In blocks 1505-1508, the routine loops identifying the shortest path through the bindings in the binding list. The routine loops selecting each path through the binding. The selected path is eligible if it starts at the first binding in the binding list and the path ends at the binding. The routine loops setting the short entry to the shortest eligible path found so far. In block 1505, the routine sets the variable first binding to the first binding in the binding list of the path address. In block 1506, the routine selects the next path (entry) in the path list of the binding starting with the first. If a path is selected (indicating that there are more paths in the binding), then the routine continues at block 1507, else the routine continues at block 1509. In block 1507, the routine determines whether the selected path starts at the first binding in the binding list, whether the selected path ends at the last binding in the binding list, and whether the number of path entries in the selected path is less than the number of path entries in the shortest path selected so far. If these conditions are all satisfied, then the routine continues at block 1508, else the routine loops to block 1506 to select the next path (entry). In block 1508, the routine sets the shortest path (short entry) to the selected path and loops to block 1506 to select the next path through the binding. In block 1509, the routine sets the selected path (entry) to the shortest path. In decision block 1510, if a path has been found, then the routine continues at block 1511, else the routine continues at block 1512. In block 1511, the routine sets the path to the path of the selected path entry and returns. Blocks 1512-1516 are performed when no paths have been found. In block 1512, the routine sets the path to the path of the passed path entry. If the passed path entry has a path and its status is demux extend, then the routine continues at block 1515,

else the routine continues at block 1513. In block 1513, the routine creates a path for the path address. In block 1514, the routine sets the variable element to null and sets the path entry to the first element in the stack list of the path. In block 1515, the routine sets the variable element to be address entry of the member of the passed path entry and sets the path entry to the passed path entry. In block 1516, the routine invokes the extend path routine to extend the path and then returns. The extend path routine creates a path through the bindings of the binding list and sets the path status to the current demux status.

[0042] Figure 16 is a flow diagram of the process of path hopping routine. Path hopping occurs when the path through the binding list is not the same path as that of the passed path entry. In decision block 1601, if the path of the passed path entry is set, then the routine continues at block 1602, else the routine continues at block 1609. In decision block 1602, if the path of the passed path entry is equal to the local path, then the routine continues at 1612, else path hopping is occurring and the routine continues at block 1603. In blocks 1603-1607, the routine loops positioning pointers at the first path entries of the paths that are not at the same binding. In block 1603, the routine sets the variable old stack to the stack list of the path of the passed path entry. In block 1604, the routine sets the variable new stack to the stack list of the local path. In block 1605, the routine sets the variable old element to the next element in the old stack. In block 1606, the routine sets the variable element to the next element in the new stack. In decision block 1607, the routine loops until the path entry that is not in the same binding is located. In decision block 1608, if the variable old entry is set, then the routine is not at the end of the hopped from path and the routine continues at block 1609, else routine continues at block 1612. In block 1609, the routine sets the variable entry to the previous entry in the hopped-to path. In block 1610, the routine sets the path of the passed path entry to the local path. In block 1611, the routine sets the local entry to the first path entry of the stack list of the local path. In block 1612, the routine inserts an entry into return list and then returns.

[0043] Although the conversion system has been described in terms of various embodiments, the invention is not limited to these embodiments. Modification within the spirit of the invention will be apparent to those skilled in the art. For example, a conversion routine may be used for routing a message and may perform no conversion of the message. Also, a reference to a single
5 copy of the message can be passed to each conversion routine or demuxkey routine. These routines can advance the reference past the header information for the protocol so that the reference is positioned at the next header. After the demux process, the reference can be reset to point to the first header for processing by the conversion routines in sequence. The scope of the invention is defined by the claims that follow.

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CLAIMS

What is claimed is:

1. A non-transitory computer-readable medium containing instructions for processing packets of a message, the instructions comprising:
 - 5 at least one computer-executable module configured to:
 - receive packets of a message;
 - identify one or more processing components for processing the incoming packets based on information provided by the processing components;
 - 10 create a path based on the one or more processing components identified for processing the packets of the message;
 - store the path in computer memory;
 - associate the path with state information; and
 - process the packets using the path and the state information.
- 15 2. The computer-readable medium of claim 1 wherein the identifying is based on searching for the next set of processing components based on output formats and input formats specified by the processing components.
3. The computer-readable medium of claim 1 wherein the identifying is based on matching input formats with output formats.
- 20 4. The computer-readable medium of claim 3, wherein matching includes a label get map

routine employing aliasing when the input formats and output formats are compatible but have different names.

5. The computer-readable medium of claim 1 wherein the identifying is based on mapping definitions.

5 6. The computer-readable medium of claim 5 wherein mapping definitions are specified by components.

7. The computer-readable medium of claim 1 wherein the identifying is based on one or more link layer addresses such as ethernet MAC addresses.

8. The computer-readable medium of claim 1 wherein the identifying is based on one or
10 more Internet layer addresses such as Internet Protocol addresses.

9. The computer-readable medium of claim 1, wherein the identifying is based on one or more transport layer addresses such as TCP port addresses.

10. The computer-readable medium of claim 1 wherein the identifying is based on one or more content identifiers such as a MIME type.

15 11. The computer-readable medium of claim 1, wherein the identifying is based on one or more application identifiers.

12. The computer-readable medium of claim 1, wherein the identifying is based on one or more user identifiers.

13. The computer-readable medium of claim 1 wherein associating a path with state
20 information is based on identifying a key defined by the processing component.

14. The computer-readable medium of claim 1 wherein associating a path with state information is based on identifying if an existing association of the same path with the same state information already exists.
15. The computer-readable medium of claim 1, wherein identifying the path requires
5 modifying packets of a message by one or more processing components such that each processing component modifies information associated with the packet such that the subsequent processing components can process the packet.
16. The computer-readable medium of claim 14, wherein identifying includes using an existing path.
- 10 17. The computer-readable medium of claim 14, wherein identifying includes creating a copy of the existing path.
18. The computer-readable medium of claim 14, wherein identifying includes extending an existing path.
19. The computer-readable medium of claim 14, wherein identifying includes creating a new
15 path.
20. The computer-readable medium of claim 1, wherein identifying includes blocking an existing path from being created.
21. The computer-readable medium of claim 1, wherein the state information is used by the path to process subsequent packets of the same message.
- 20 22. The computer-readable medium of claim 1, wherein the processing includes a path thread and a message queue.

23. The computer-readable medium of claim 21, wherein the path thread removes packets from the message queue and calls a forwarding routine.

24. The computer-readable medium of claim 21, wherein the forwarding routine calls the first component in the path with the associated state information and a message packet.

5 25. The computer-readable medium of claim 21, wherein each component recursively calls the forwarding component when it is done processing the packet.

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ABSTRACT

A method and system for demultiplexing packets of a message is provided.

The demultiplexing system receives packets of a message, identifies a sequence of message handlers for processing the message, identifies state information associated with the message for each message handler, and invokes the message handlers passing the message and the associated state information. The system identifies the message handlers based on the initial data type of the message and a target data type. The identified message handlers effect the conversion of the data to the target data type through various intermediate data types.

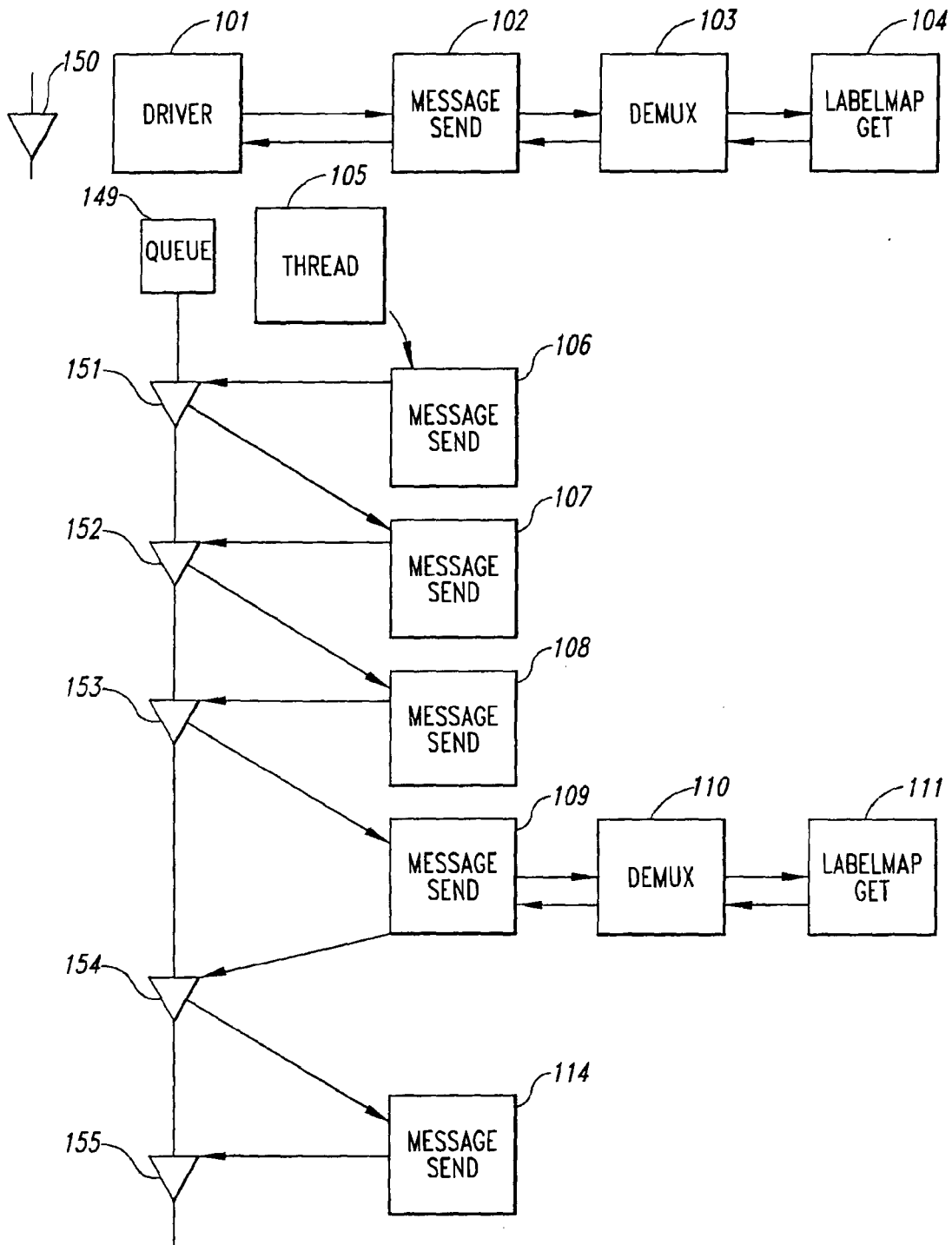


Fig. 1

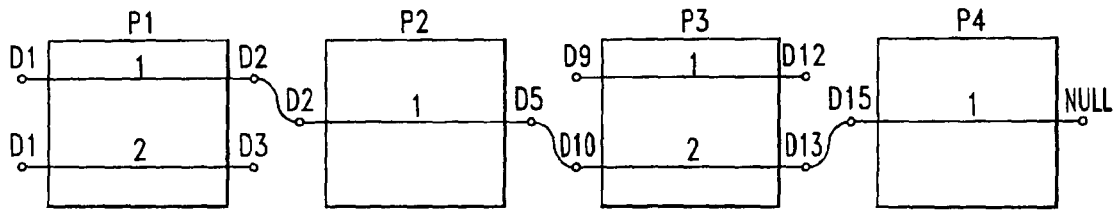


Fig. 2

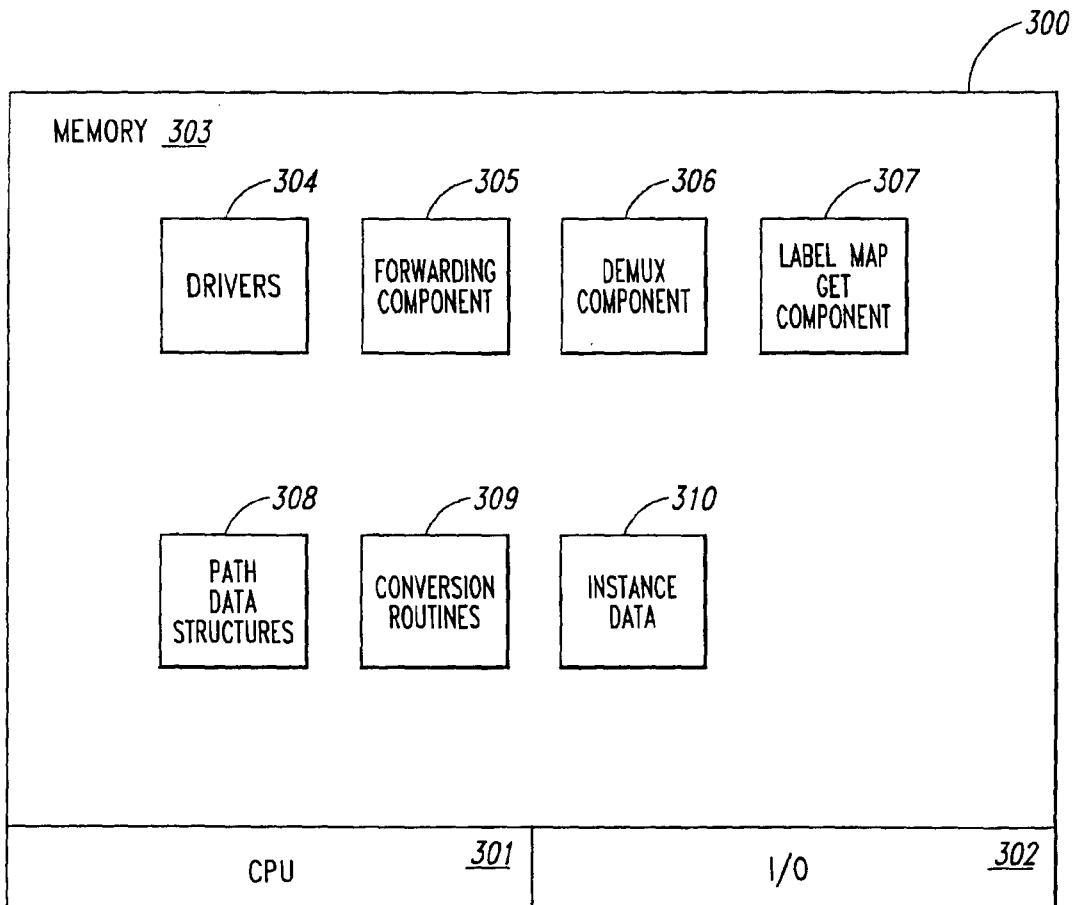


Fig. 3

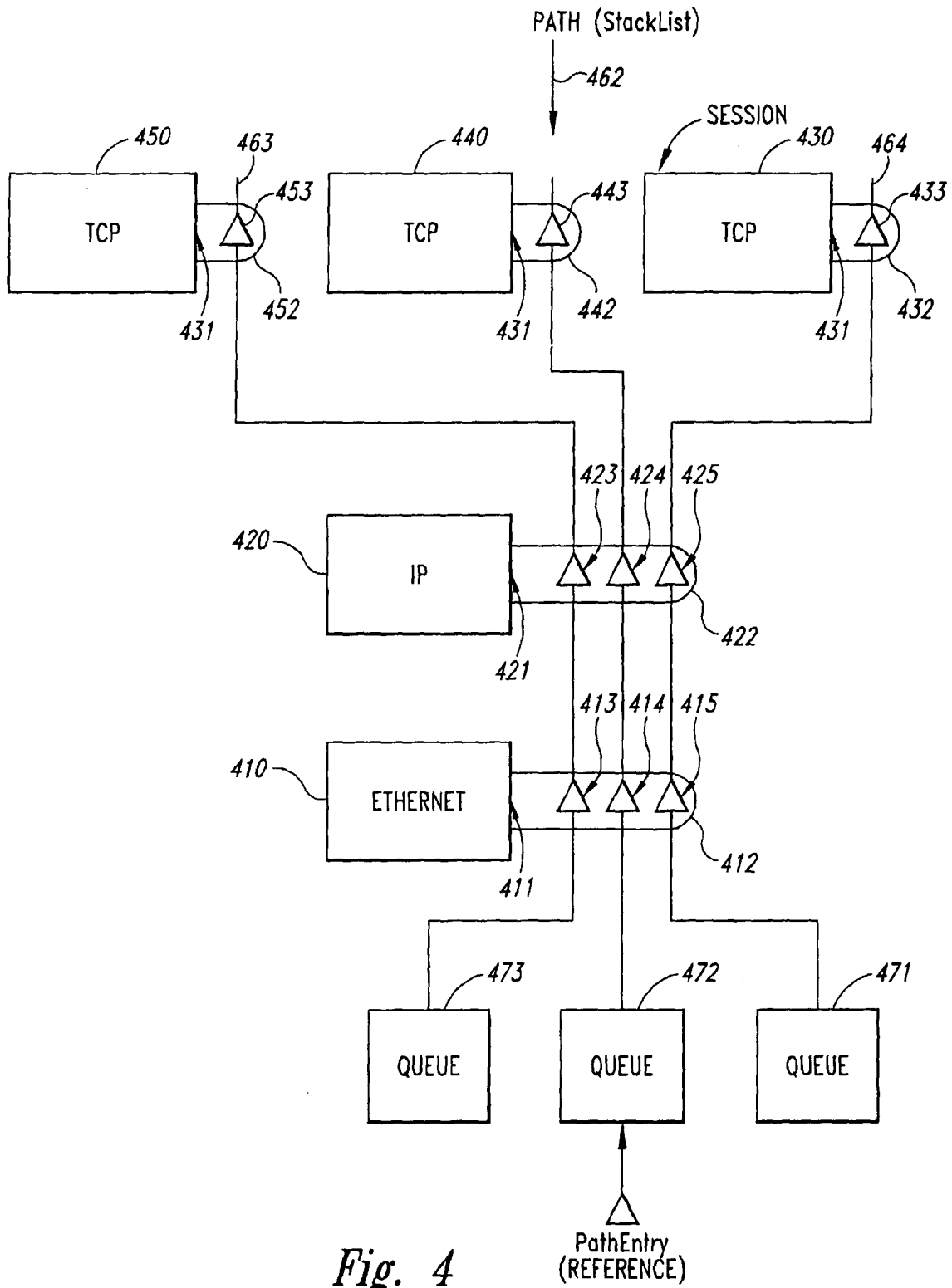


Fig. 4

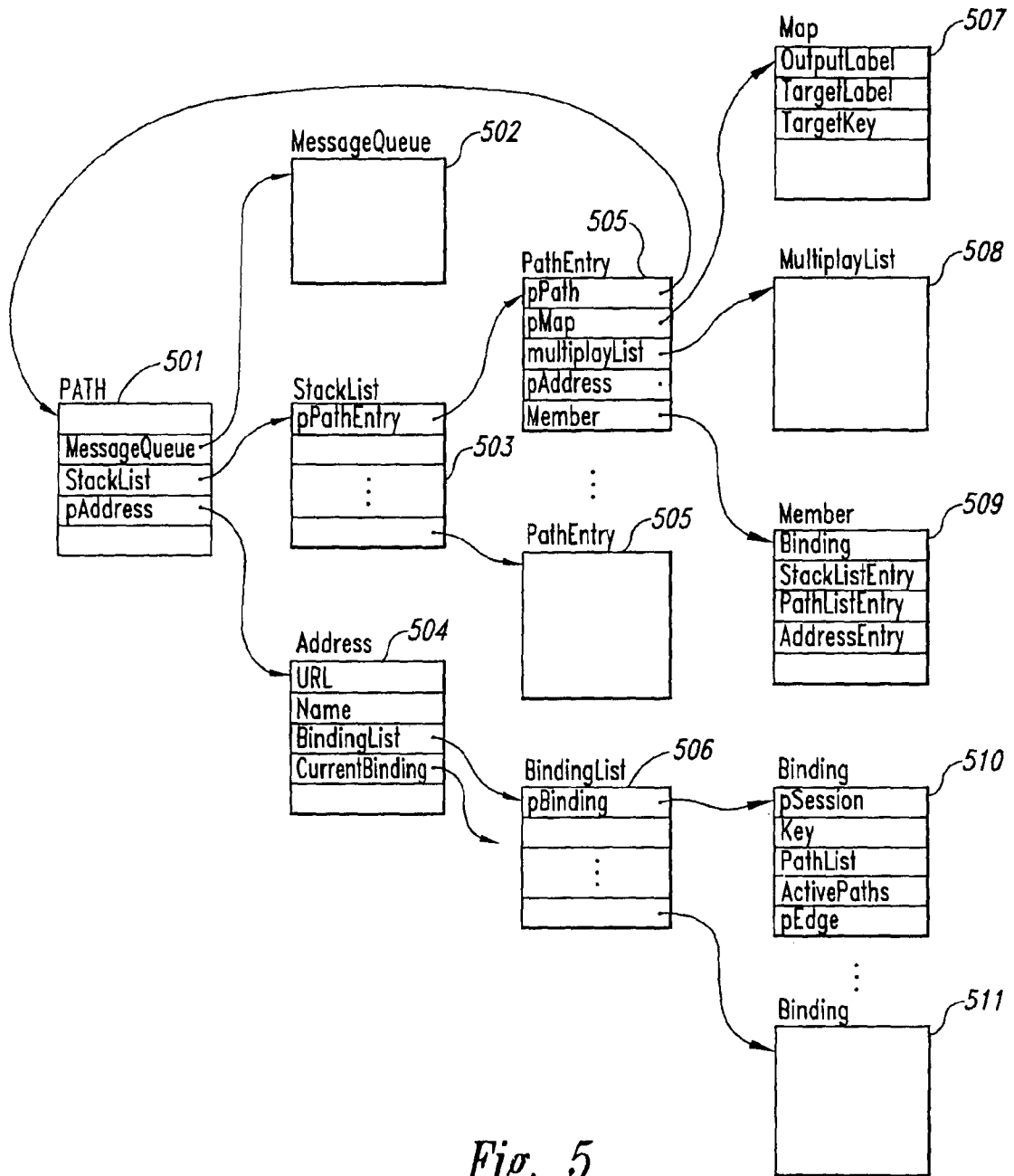


Fig. 5

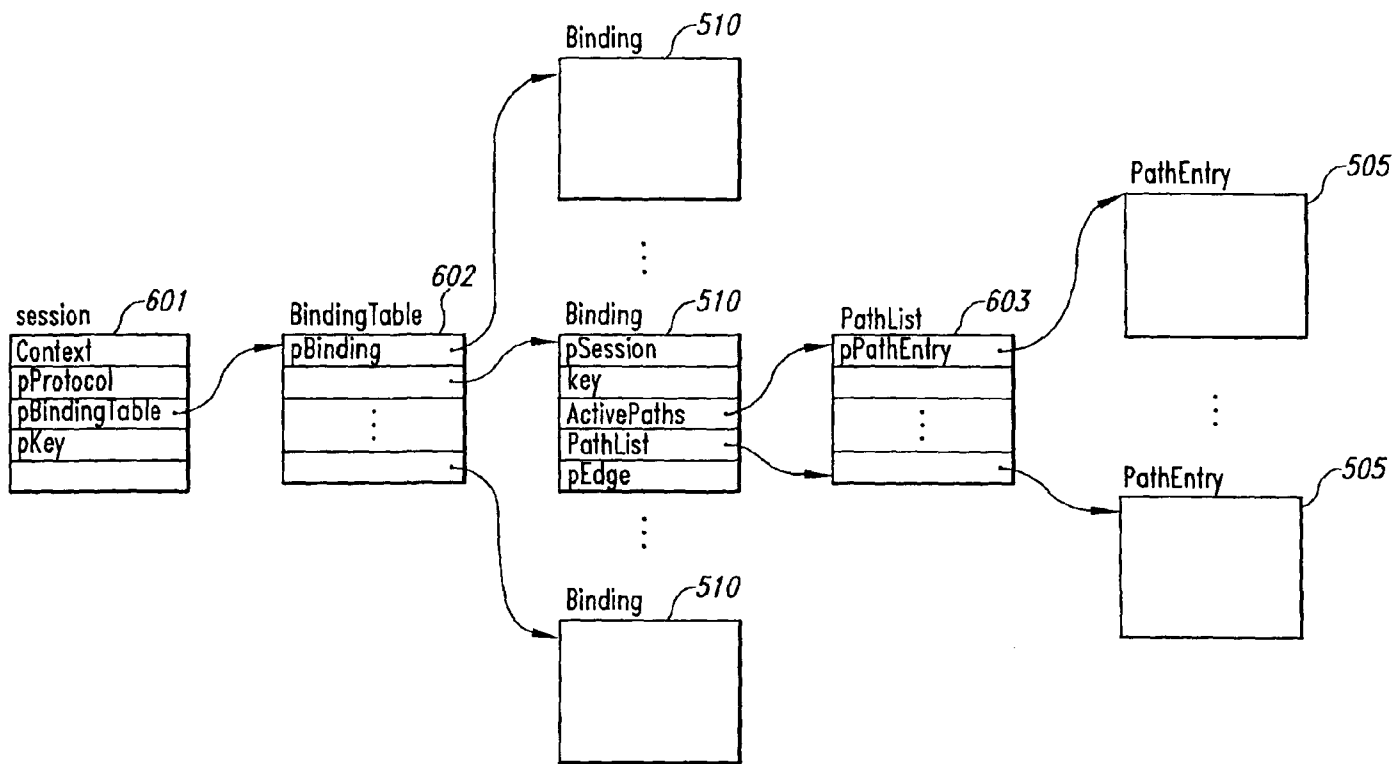


Fig. 6

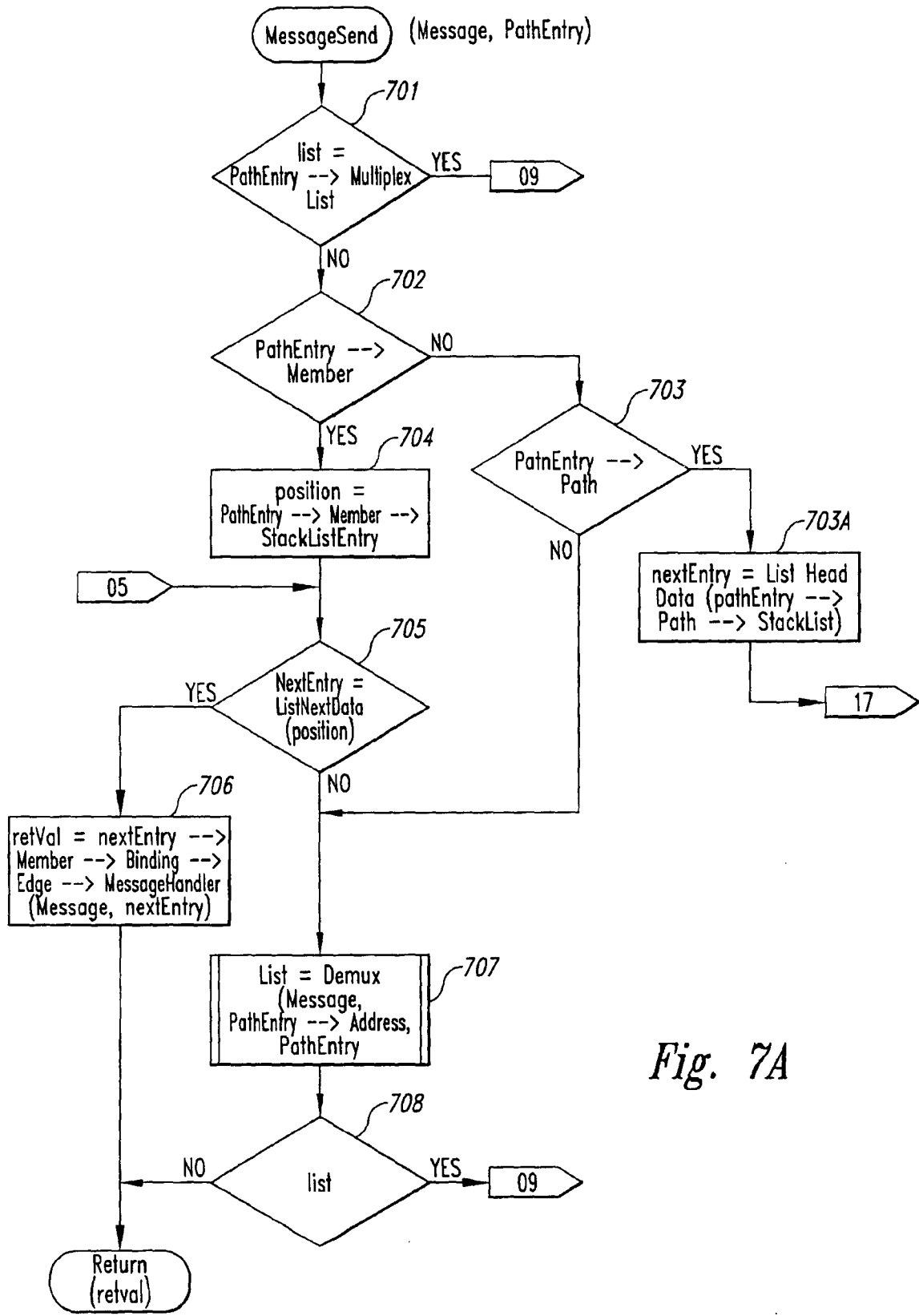


Fig. 7A

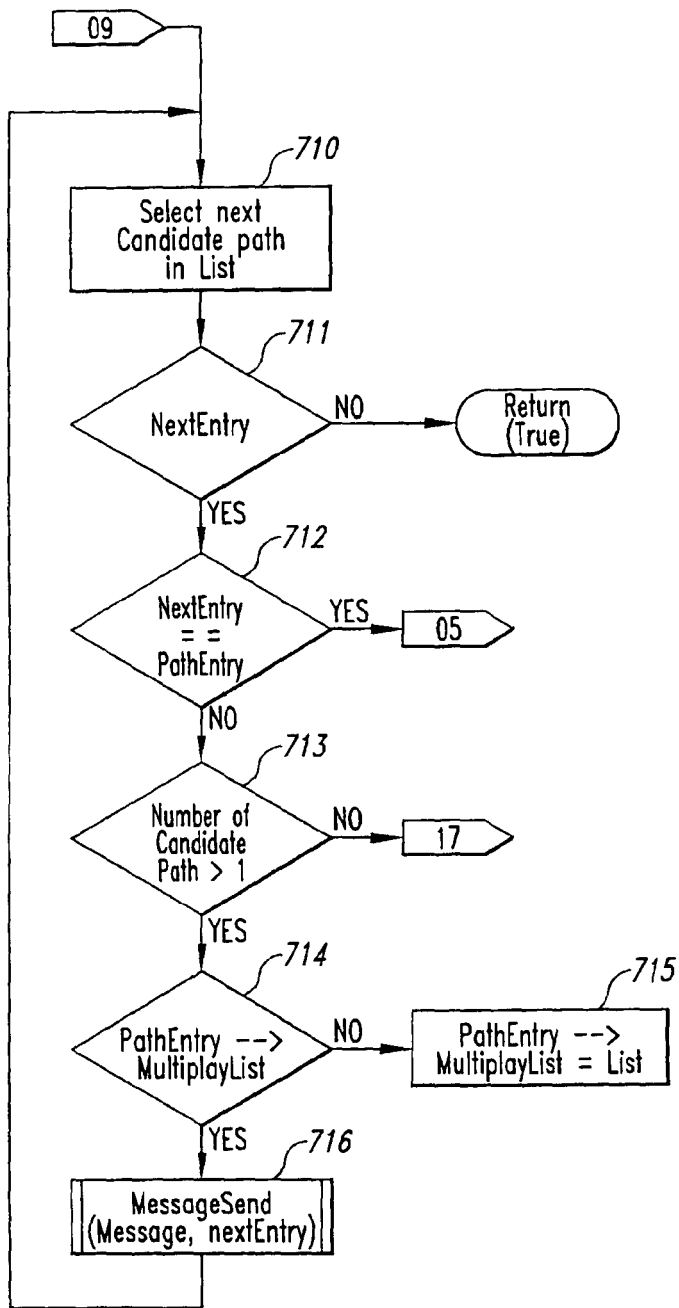


Fig. 7B

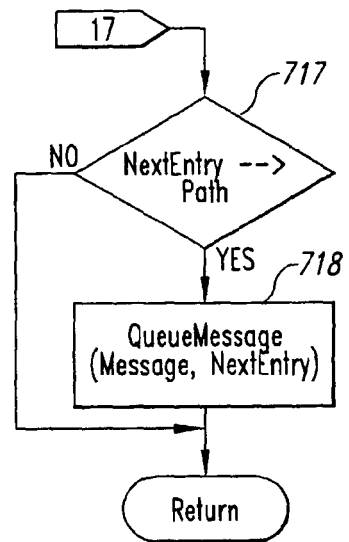


Fig. 7C

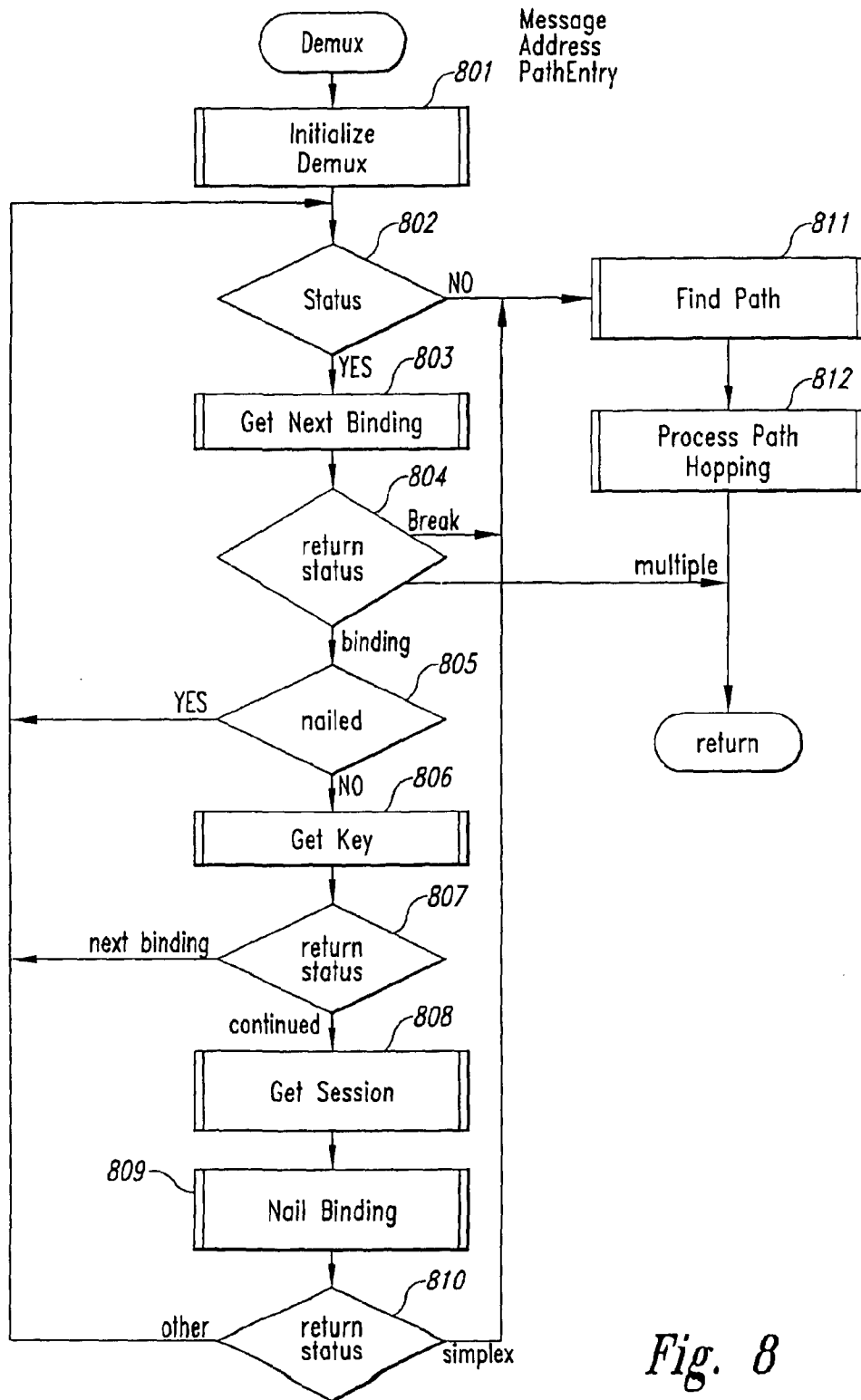


Fig. 8

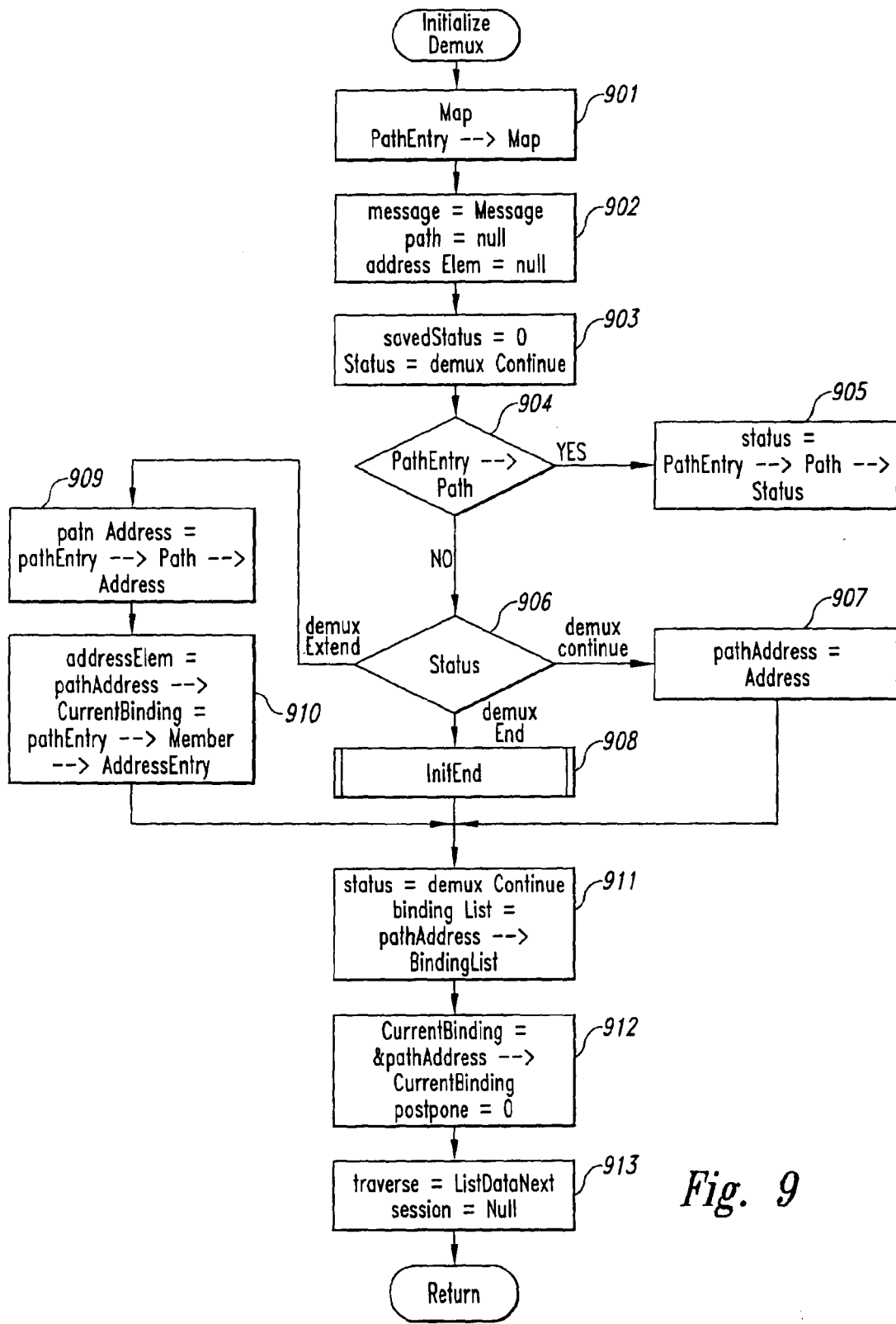


Fig. 9

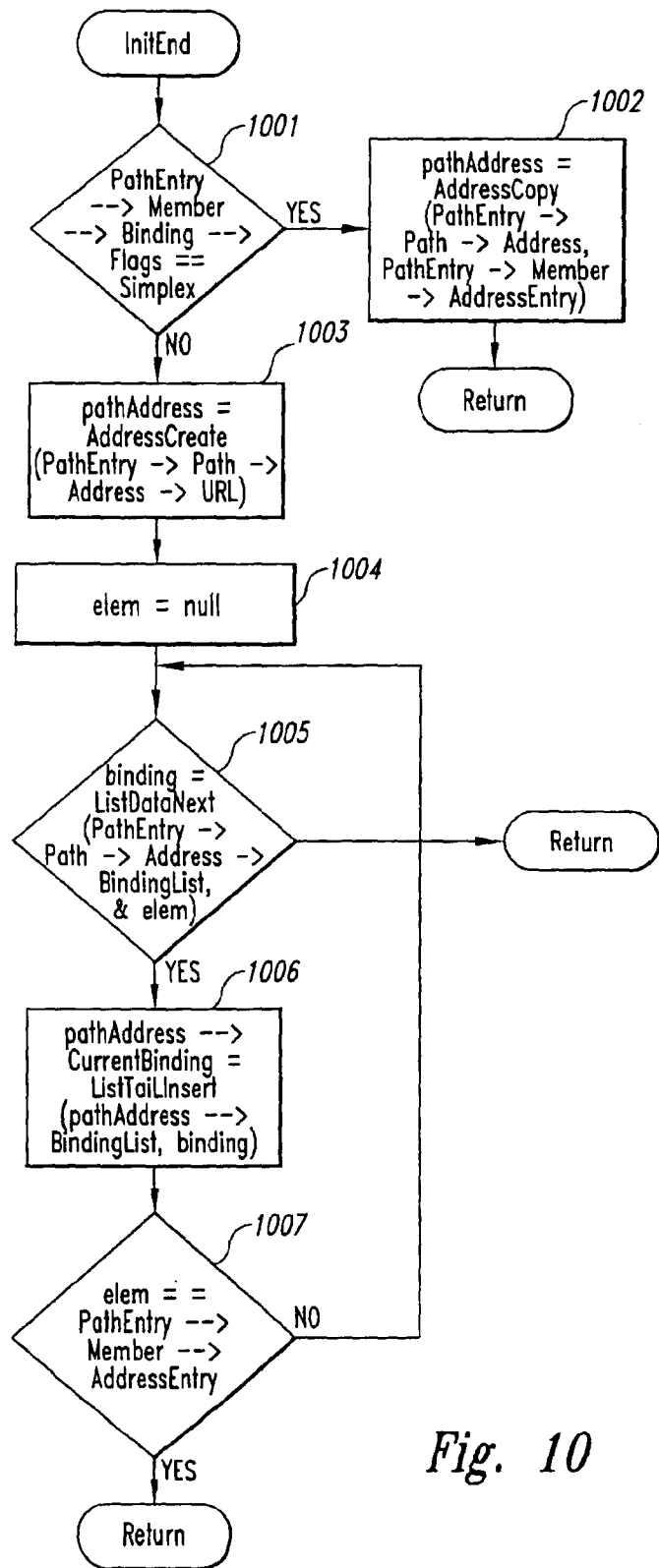


Fig. 10

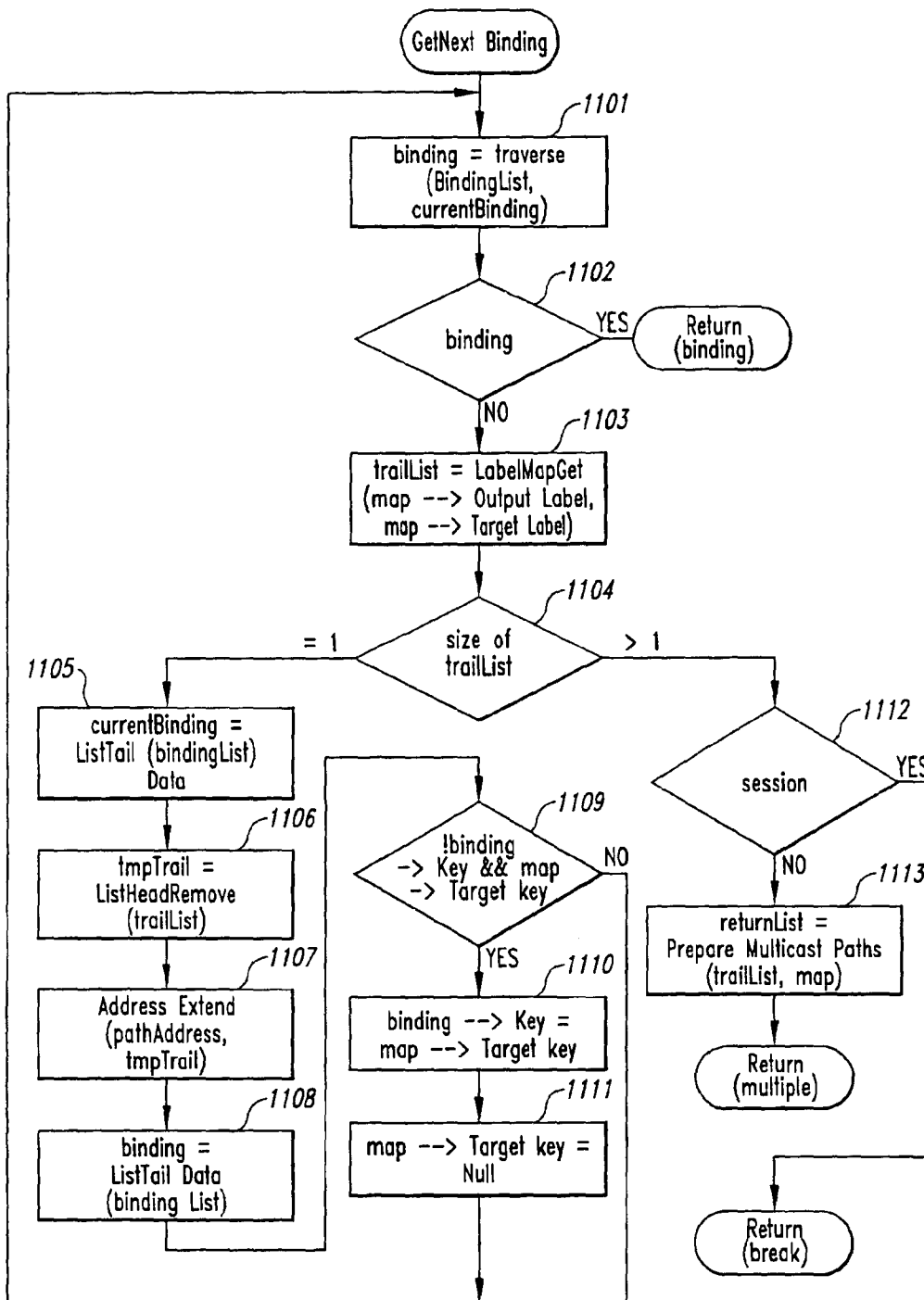
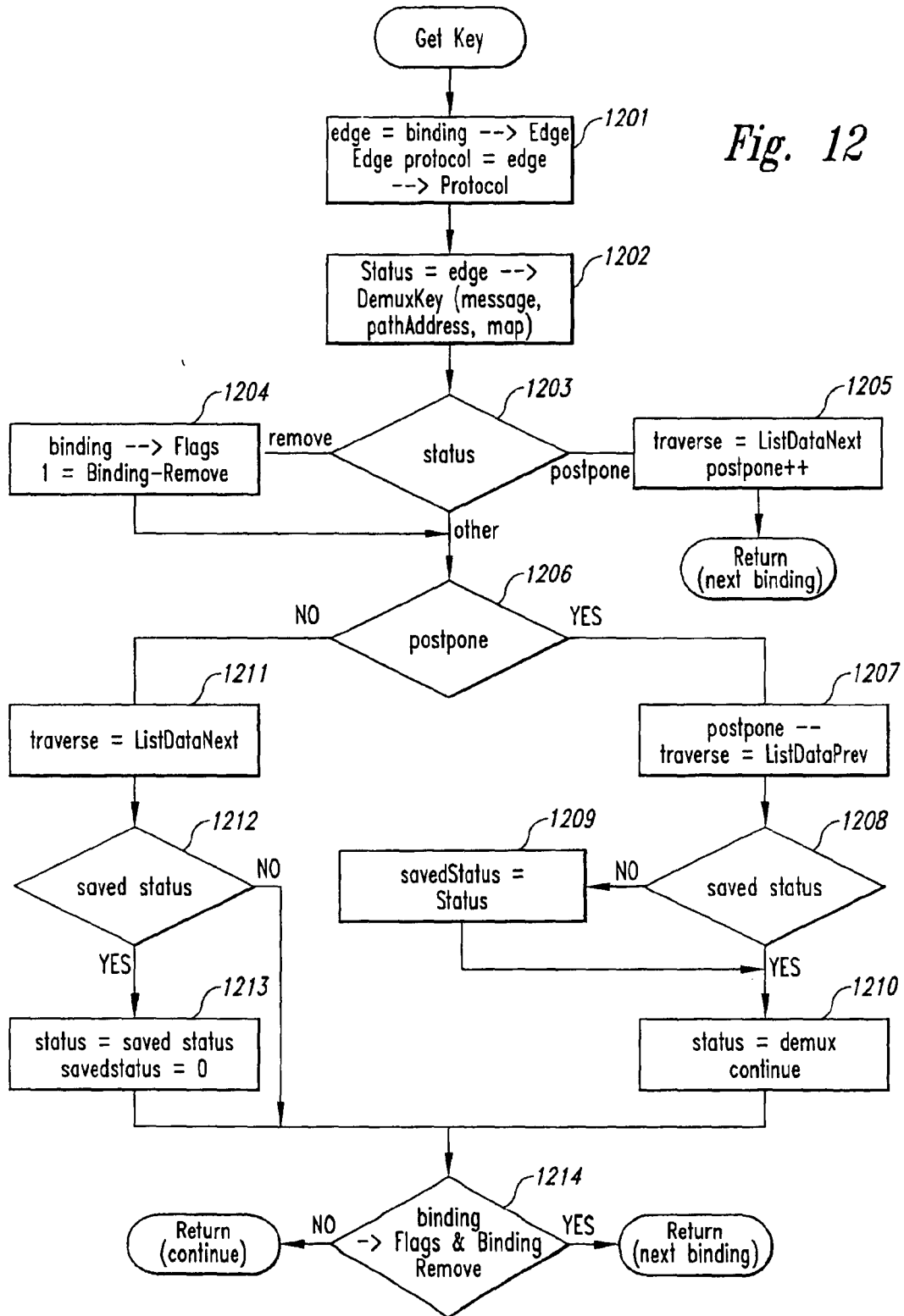


Fig. 11

Fig. 12



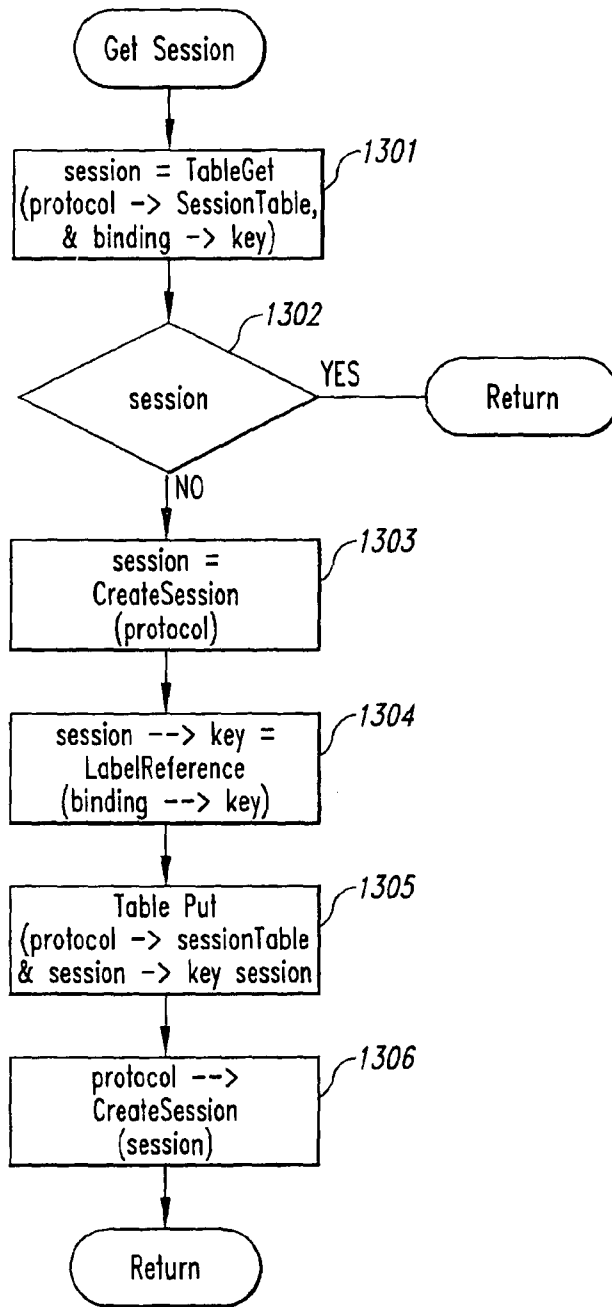


Fig. 13

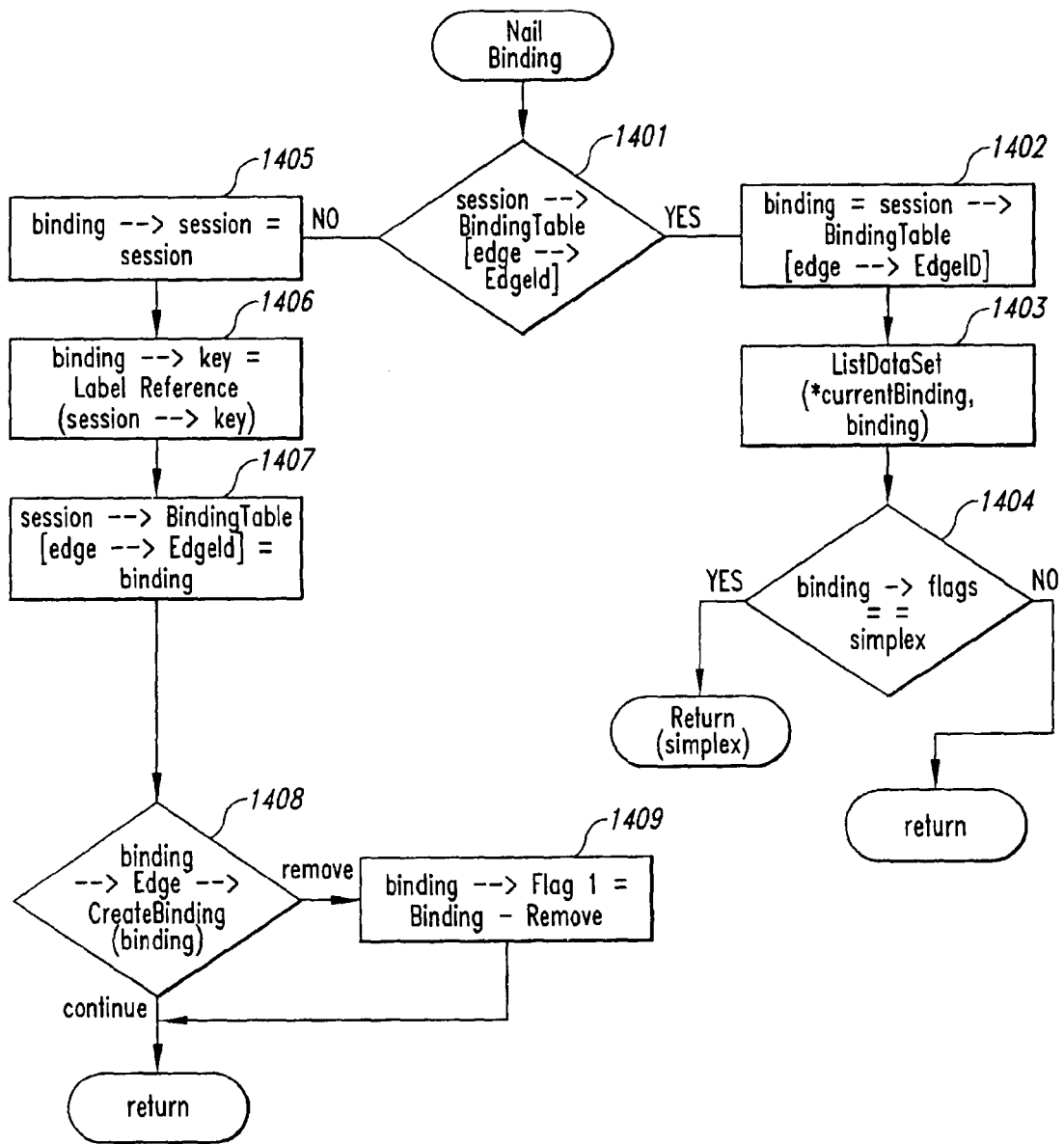


Fig. 14

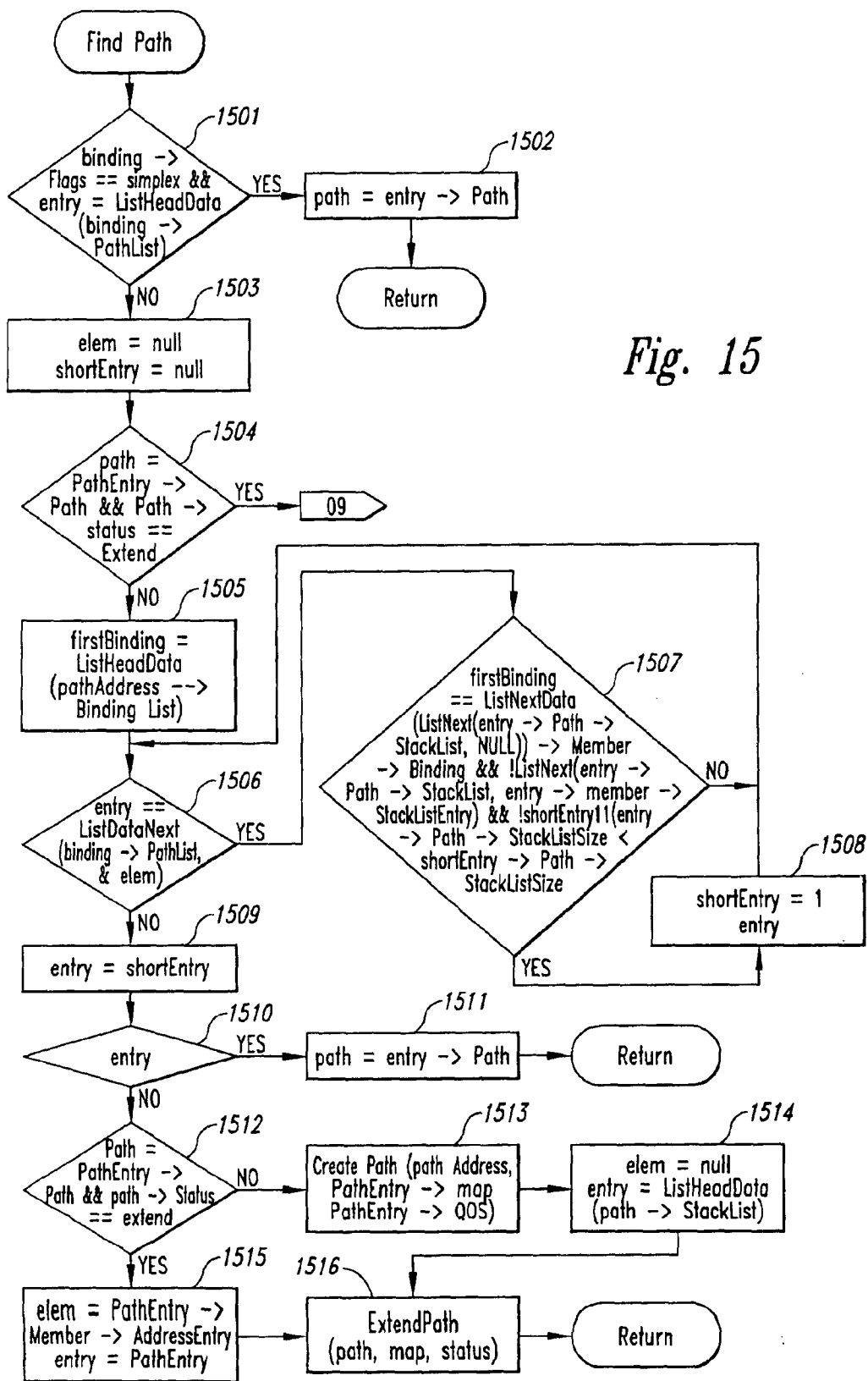


Fig. 15

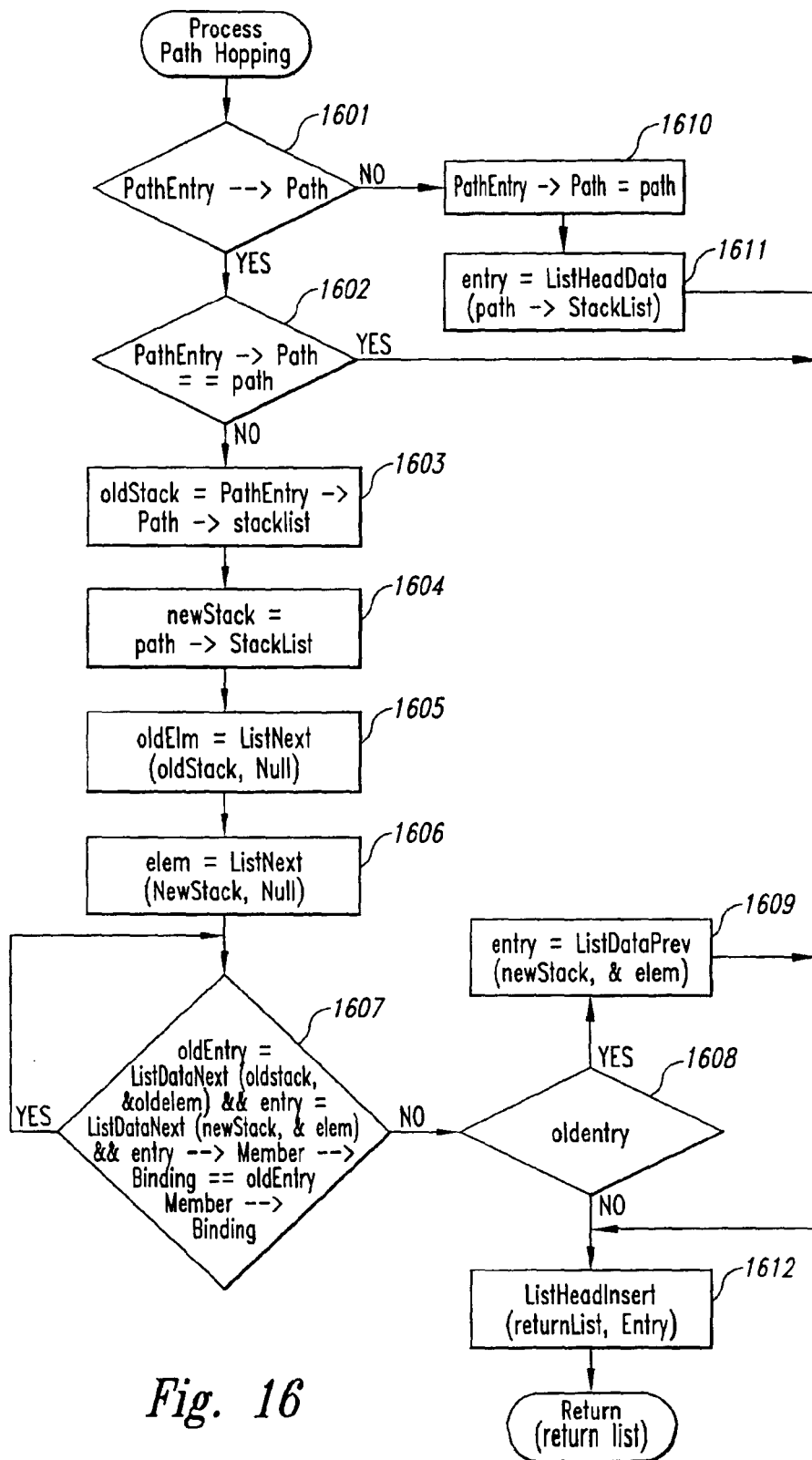


Fig. 16

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

**Title of
Invention**

METHOD AND SYSTEM FOR DATA DEMULTIPLEXING

As the below named inventor, I hereby declare that:

This declaration is directed to: The attached application, or
 United States application or PCT international application number _____
 filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Edward Balassanian Date (Optional) : _____

Signature:  _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Juniper Ex. 1004-p. 75

Juniper v Implicit

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B or equivalent) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5. If the Power of Attorney by Applicant form is not accompanied by this transmittal form or an equivalent, the Power of Attorney will not be recognized in the application.

Application Number	
Filing Date	June 6, 2013
First Named Inventor	Edward Balassanian
Title	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
Art Unit	
Examiner Name	
Attorney Docket Number	6743-00105

SIGNATURE of Applicant or Patent Practitioner

Signature	/Dean M. Munyon/	Date	June 6, 2013
Name	Dean M. Munyon	Telephone	512-853-8800
Registration Number	42914		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.

*Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in the attached transmittal letter.

I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

35690

OR

I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A or equivalent):

Name	Registration Number	Name	Registration Number

Please recognize or change the correspondence address for the application identified in the attached transmittal letter to:

The address associated with the above-mentioned Customer Number.

OR

The address associated with Customer Number:

OR

<input type="checkbox"/> Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

I am the Applicant:

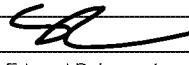
Inventor or Joint Inventor

Legal Representative of a Deceased or Legally Incapacitated Inventor

Assignee or Person to Whom the Inventor is Under an Obligation to Assign

Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document)

SIGNATURE of Applicant for Patent

Signature		Date	3/29/13
Name	Edward Balassarian	Telephone	
Title and Company	President & CEO, Implicit Networks, Inc.		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms for more than one signature, see below *.

*Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6743-00105
		Application Number	
Title of Invention	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

<input type="checkbox"/> Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Edward		Balassanian		
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
City	Seattle	State/Province	WA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1	516 Yale Ave N, #400				
Address 2					
City	Seattle	State/Province	WA		
Postal Code	98109	Country i	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
<input type="checkbox"/> An Address is being provided for the correspondence Information of this application.	
Customer Number	35690
Email Address	Add Email Remove Email

Application Information:

Title of the Invention	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING		
Attorney Docket Number	6743-00105	Small Entity Status Claimed	<input type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6743-00105
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING	

Publication Information:

Request Early Publication (Fee required at time of Request 37 CFR 1.219)

Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	35690		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status	Pending		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
	Continuation of	13236090	2011-09-19		
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13236090	Continuation of	10636314	2003-08-06	8055786	2011-11-08
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
10636314	Continuation of	09474664	1999-12-29	6629163	2003-09-30
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					Add

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6743-00105
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING	

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

Authorization to Permit Access:

Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6743-00105
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear

Assignee
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Person to whom the inventor is obligated to assign.
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6743-00105
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING	

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Signature	/Dean M. Munyon/		Date (YYYY-MM-DD)	2013-06-06
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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number			
	Filing Date		2013-06-06	
	First Named Inventor	Edward Balassanian		
	Art Unit			
	Examiner Name			
	Attorney Docket Number		6743-00105	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number			
	Filing Date		2013-06-06	
	First Named Inventor	Edward Balassanian		
	Art Unit			
	Examiner Name			
	Attorney Docket Number		6743-00105	

1	RFC: 791, Internet Protocol: DARPA Internet Program Protocol Specification, September 1981, prepared for Defense Advanced Research Projects Agency Information Processing Techniques Office by Information Sciences Institute University of Southern California, 52 pages.	<input type="checkbox"/>
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2013-06-06
First Named Inventor	Edward Balassanian	
Art Unit		
Examiner Name		
Attorney Docket Number		6743-00105

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

None

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Dean M. Munyon/	Date (YYYY-MM-DD)	2013-06-06
Name/Print	Dean M. Munyon	Registration Number	42914

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Sheet 1 of 14)***Complete if Known*

Application Number	13/911,324
Filing Date	2013-06-06
First Named Inventor	Edward BALASSANIAN
Group Art Unit	2192
Examiner Name	

U.S. PATENTS

Examiner Initial	Cite No.	Patent Number	Name of Patentee Or Applicant Of Cited Document	Issue Date
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Examiner Initial	Cite No.	Foreign Document No.	Country Code	Name of Patentee or Applicant of cited Document	Publication Date
	27	0817031	EP	Brad Fowlow	01/07/1998

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 2 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
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	28	Alexander, D. et al., "The SwitchWare Active Network Architecture", June 6, 1998, IEEE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 3 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

		Networks Laboratory, ETH Zurich, Switzerland
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 4 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

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	91	Kelsey, J. et al., "Authenticating Outputs of Computer Software Using a Cryptographic Coprocessor", September 1996, CARDIS
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	100	Muhugusa, M., et al., "COMSCRIPT: An Environment for the Implementation of Protocol Stacks and their Dynamic Reconfiguration", December 1994
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 5 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

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Examiner Initials*	Cite No.1	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 6 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

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		<i>Implicit Networks, Inc. v. Advanced Micro Devices, Inc. et al.</i>; C08-0184 JLR; USDC for the Western District of Washington, Seattle Division:
	143	2/4/08 Plaintiff's Original Complaint
	144	8/26/08 Defendant NVIDIA Corporation's Answer to Complaint
	145	8/26/08 Defendant Sun Microsystems, Inc.'s Answer to Complaint
	146	8/27/08 Defendant Advanced Micro Devices, Inc.'s Answer to Complaint for Patent Infringement
	147	8/27/08 RealNetworks, Inc.'s Answer to Implicit Networks, Inc.'s Original Complaint for Patent Infringement, Affirmative Defenses, and Counterclaims
	148	8/27/08 Intel Corp.'s Answer, Defenses and Counterclaims
	149	8/27/08 Defendant RMI Corporation's Answer to Plaintiff's Original Complaint
	150	9/15/08 Plaintiff's Reply to NVIDIA Corporation's Counterclaims
	151	9/15/08 Plaintiff's Reply to Sun Microsystems Inc.'s Counterclaims
	152	9/16/08 Plaintiff's Reply to RealNetworks, Inc.'s Counterclaims
	153	9/16/08 Plaintiff's Reply to Intel Corp.'s Counterclaims
	154	12/10/08 Order granting Stipulated Motion for Dismissal with Prejudice re NVIDIA Corporation, Inc.
	155	12/16/08 Defendants AMD, RealNetworks, RMI, and Sun's Motion to Stay Pending the Patent and Trademark Office's Reexamination of the '163 Patent
	156	12/29/08 Order granting Stipulated Motion for Dismissal without Prejudice of Claims re Sun Microsystems, Inc.
	157	1/5/09 Plaintiff's Opposition to Defendants AMD, RealNetworks, RMI, and Sun's Motion to Stay Pending Reexamination and Exhibit A
	158	1/9/09 Reply of Defendants AMD, RealNetworks, RMI, and Sun's Motion to Stay Pending the Patent and Trademark Office's Reexamination of the '163 Patent
	159	2/9/09 Order Granting Stay Pending the United States Patent and Trademark Office's Reexamination of U.S. Patent No. 6,629,163
	160	2/17/09 Order Granting Stipulated Motion for Dismissal of Advanced Micro Devices, Inc. with Prejudice
	161	5/14/09 Order Granting Stipulated Motion for Dismissal of RMI Corporation with Prejudice
	162	10/13/09 Order Granting Stipulated Motion for Dismissal of Claims Against and Counterclaims by Intel Corporation
	163	10/30/09 Executed Order for Stipulated Motion for Dismissal of Claims Against and Counterclaims by RealNetworks, Inc.
		<i>Implicit Networks, Inc. v. Microsoft Corp.</i>, C09-5628 HLR; USDC for the Northern District of California, San Francisco Division
	164	11/30/09 Plaintiff's Original Complaint, <i>Implicit v Microsoft</i> , Case No. 09-5628
	165	01/22/10 Order Dismissing Case, <i>Implicit v Microsoft</i> , Case No. 09-5628
		<i>Implicit Networks, Inc. v. Cisco Systems, Inc.</i>, C10-3606 HRL; USDC for the Northern District of California, San Francisco Division
	166	08/16/10 Plaintiff's Original Complaint, <i>Implicit v Cisco</i> , Case No. 10-3606
	167	11/22/10 Defendant Cisco Systems, Inc.'s Answer and Counterclaims, <i>Implicit v Cisco</i> , Case No. 10-3606
	168	12/13/10 Plaintiff, <i>Implicit Networks, Inc.</i> 's, Answer to Counterclaims, <i>Implicit v Cisco</i> , Case No. 10-3606
	169	10/04/11 Order of Dismissal with Prejudice, <i>Implicit v Cisco</i> , Case No. 10-3606
		<i>Implicit Networks, Inc. v. Citrix Systems, Inc.</i>, C10-3766 JL; USDC for the Northern District of California, San Francisco Division
	170	08/24/10 Plaintiff's Original Complaint, <i>Implicit v Citrix</i> , Case No. 10-3766
	171	12/01/10 Plaintiff's First Amended Complaint, <i>Implicit v Citrix</i> , Case No. 10-3766

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 7 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

	172	01/14/11 Defendant Citrix Systems, Inc.'s Answer, Defenses and Counter-complaint for Declaratory Judgment, <i>Implicit v Citrix</i> , Case No. 10-3766
	173	02/18/11 Plaintiff, <i>Implicit Networks, Inc.</i> 's, Answer to Defendants Counterclaims, <i>Implicit v Citrix</i> , Case No. 10-3766
Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	174	05/02/11 Order of Dismissal, <i>Implicit v Citrix</i> , Case No. 10-3766
		<i>Implicit Networks, Inc. v.F5 Networks, Inc., C10-3365 JCS; USDC for the Northern District of California, San Francisco Division</i>
	175	07/30/10 Plaintiff's Original Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	176	10/13/10 Defendants' Answer and Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	177	11/03/10 Plaintiff's Answer to Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	178	12/10/10 Plaintiff's First Amended Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	179	01/14/11 Defendants' Answer to 1 st Amended Complaint and Counterclaim, <i>Implicit v F5</i> , Case No. 10-3365
	180	02/18/11 Plaintiff's Answer to F5's Amended Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	181	04/18/11 Defendants' Amended Answer to 1 st Amended Complaint and Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	182	05/05/11 Plaintiff's Answer to F5's Amended Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	183	07/22/11 F5 Networks, Inc.'s Invalidation Contentions, <i>Implicit v F5</i> , Case No. 10-3365
	184	07/22/11 F5 Networks, Inc.'s Invalidation Contentions, Exhibit A, <i>Implicit v F5</i> , Case No. 10-3365 (31 documents)
	185	07/22/11 F5 Networks, Inc.'s Invalidation Contentions, Exhibit B, <i>Implicit v F5</i> , Case No. 10-3365
	186	10/18/11 Joint Claim Construction & Pre-Hearing Statement (PR 4-3), <i>Implicit v F5</i> , Case No. 10-3365
	187	10/18/11 Joint Claim Construction & Pre-Hearing Statement (PR 4-3) Exhibit A, <i>Implicit v F5</i> , Case No. 10-3365 (2 documents)
	188	11/28/11 Plaintiff's Opening Claim Construction Brief, <i>Implicit v F5</i> , Case No. 10-3365
	189	11/29/11 Amended Joint Claim Construction & Pre-Hearing Statement, <i>Implicit v F5</i> , Case No. 10-3365
	190	11/29/11 Amended Joint Claim Construction & Pre-Hearing Statement, Exhibit A, <i>Implicit v F5</i> , Case No. 10-3365
	191	12/12/11 Defendants' Claim Construction Brief, <i>Implicit v F5</i> , Case No. 10-3365
	192	12/19/11 Plaintiff's Reply to Defendants' (F5, HP, Juniper) Responsive Claim Construction Brief (4-5), <i>Implicit v F5</i> , Case No. 10-3365
	193	01/27/12 Transcript of Proceeding Held on 1-17-12; <i>Implicit v F5</i> , Case No. 10-3365
	194	01/27/12 Transcript of Proceeding Held on 1-18-12; <i>Implicit v F5</i> , Case No. 10-3365
	195	01/27/12 Transcript of Proceeding Held on 1-19-12; <i>Implicit v F5</i> , Case No. 10-3365
	196	02/29/12 Claim Construction Order
	197	08/15/12 Storer Invalidation Report
	198	09/10/12 <i>Implicit</i> 's Expert Report of Scott M. Nettles
	199	03/13/13 Order Granting Defendants' Motion for Summary Judgment
	200	04/09/13 Notice of Appeal to the Federal Circuit
		<i>Implicit Networks, Inc. v. Hewlett-Packard Company, C10-3746 JCS: USDC for the Northern District of California, San Francisco Division</i>
	201	08/23/10 Plaintiff's Original Complaint, <i>Implicit v HP</i> , Case No. 10-3746
	202	11/23/10 Plaintiff's First Amended Complaint, <i>Implicit v HP</i> , Case No. 10-3746
	203	01/14/11 Defendant HP's Answer and Counterclaims, <i>Implicit v HP</i> , Case No. 10-3746
	204	02/18/11 <i>Implicit Networks, Inc.</i> 's Answer to HP Counterclaims, <i>Implicit v HP</i> , Case No. 10-3746
	205	05/10/11 Plaintiff's Amended Disclosure of Asserted Claims and Infringement Contentions, Case No. 10-3746
	206	06/30/11 Defendant HP Company's Invalidation Contentions, <i>Implicit v HP</i> , Case No. 10-3746
	207	06/30/11 Defendant HP Company's Invalidation Contentions, A1-14, <i>Implicit v HP</i> , Case No. 10-3746
	208	06/30/11 Defendant HP Company's Invalidation Contentions, B1-21, <i>Implicit v HP</i> , Case No. 10-3746
		<i>Implicit Networks, Inc. v. Juniper Networks, C10-4234 EDL: USDC for the Northern District of California, San Francisco</i>

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	First Named Inventor	Edward BALASSANIAN
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		Division
	209	09/20/10 Plaintiff's Original Complaint, <i>Implicit v Juniper</i> , Case No. 10-4234
	210	11/12/10 Juniper Network's Motion to Dismiss For Failure to State a Claim Under Rule 12(B)(6): Memorandum of Points and Authorities; <i>Implicit v Juniper</i> , Case No. 10-4234
Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	211	11/12/10 Juniper Network's Request for Judicial Notice in Support of its Motion to Dismiss For Failure to State a Claim Under Rule 12(B)(6): Memorandum of Points and Authorities; <i>Implicit v Juniper</i> , Case No. 10-4234
	212	12/01/10 First Amended Complaint; <i>Implicit v Juniper</i> , Case No. 10-4234
	213	01/18/11 Juniper Networks, Inc.'s Answer and Affirmative Defenses to 1 st Amended Complaint, <i>Implicit v Juniper</i> , Case No. 10-4234
	214	02/18/11 Plaintiff's Answer to Defendant's Counterclaims, <i>Implicit v Juniper</i> , Case No. 10-4234
	215	05/23/11 Plaintiff's Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	216	11/15/11 Plaintiff's Amended Disclosure of Asserted Claim and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	217	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	218	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit E, <i>Implicit v Juniper</i> , Case No. 10-4234
	219	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit J, <i>Implicit v Juniper</i> , Case No. 10-4234
	220	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit K, <i>Implicit v Juniper</i> , Case No. 10-4234
	221	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibits M-O, <i>Implicit v Juniper</i> , Case No. 10-4234
	222	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	223	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit B, <i>Implicit v Juniper</i> , Case No. 10-4234
	224	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit F, <i>Implicit v Juniper</i> , Case No. 10-4234
	225	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit N, <i>Implicit v Juniper</i> , Case No. 10-4234
	226	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit P, <i>Implicit v Juniper</i> , Case No. 10-4234
	227	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Q, <i>Implicit v Juniper</i> , Case No. 10-4234
	228	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit S., <i>Implicit v Juniper</i> , Case No. 10-4234
	229	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-1, <i>Implicit v Juniper</i> , Case No. 10-4234
	230	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-2, <i>Implicit v Juniper</i> , Case No. 10-4234
	231	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-3, <i>Implicit v Juniper</i> , Case No. 10-4234
	232	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-4, <i>Implicit v Juniper</i> , Case No. 10-4234
	233	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit U, <i>Implicit v Juniper</i> , Case No. 10-4234
	234	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit V, <i>Implicit v Juniper</i> , Case No. 10-4234
	235	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit W, <i>Implicit v Juniper</i> , Case No. 10-4234

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	Group Art Unit	2192
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	236	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit X, <i>Implicit v Juniper</i> , Case No. 10-4234
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	237	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-1, <i>Implicit v Juniper</i> , Case No. 10-4234
	238	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-2, <i>Implicit v Juniper</i> , Case No. 10-4234
	239	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-3, <i>Implicit v Juniper</i> , Case No. 10-4234
	240	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-4, <i>Implicit v Juniper</i> , Case No. 10-4234
	241	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Z, <i>Implicit v Juniper</i> , Case No. 10-4234
	242	12/19/11 Spencer Hosie Declaration in Support of Plaintiff's Reply Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	243	12/19/11 Spencer Hosie Declaration in Support of Plaintiff's Reply Claim Construction Brief, Exhibit P, <i>Implicit v Juniper</i> , Case No. 10-4234
	244	01/10/12 Plaintiff's 1-10-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	245	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	246	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A1, <i>Implicit v Juniper</i> , Case No. 10-4234
	247	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A2, <i>Implicit v Juniper</i> , Case No. 10-4234
	248	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A3, <i>Implicit v Juniper</i> , Case No. 10-4234
	249	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A4, <i>Implicit v Juniper</i> , Case No. 10-4234
	250	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit B1, <i>Implicit v Juniper</i> , Case No. 10-4234
	251	02/29/12 Plaintiff's 2-29-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	252	04/06/12 Plaintiff's 4-6-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	253	04/09/12 Plaintiff's 4-9-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	254	09/11/12 Implicit's Expert Report of Scott Nettles
	255	11/09/12 Juniper's Notice of Motion and Memorandum of Law ISO Motion for Summary Judgment or, in the alternative, for Partial Summary Judgment, on the Issue of Invalidity
	256	11/09/12 Exhibit 2 to Declaration in support of Juniper's Motion for Summary Judgment – Calvert Expert Report
	257	11/09/12 Exhibit 3 to Declaration in support of Juniper's Motion for Summary Judgment – Calvert Supplemental Expert Report
	258	11/26/12 Implicit Opposition to Juniper's and F5 Motion on Invalidity
	259	11/26/12 Exhibit A to Hosie Declaration- 08/27/12 Excerpts from David Blaine deposition
	260	11/26/12 Exhibit B to Hosie Declaration– 10/25/12 Excerpts from Kenneth Calvert Deposition
	261	11/26/12 Exhibit C to Hosie Declaration – 08/15/12 Excerpts from Kenneth Calvert Expert Report
	262	11/26/12 Exhibit D to Hosie Declaration – USPN 6,651,099 to Dietz et al
	263	11/26/12 Exhibit E to Hosie Declaration – Understanding Packet-Based and Flow-Based Forwarding
	264	11/26/12 Exhibit F to Hosie Declaration – Wikipedia on Soft State
	265	11/26/12 Exhibit G to Hosie Declaration – Sprint Notes
	266	11/26/12 Exhibit H to Hosie Declaration – Implicit's Supplemental Response to Juniper's 2 nd Set of Interrogatories
	267	11/26/12 Exhibit I to Hosie Declaration – USPN 7,650,634 (Zuk)
	268	03/13/13 Order Granting Defendants' Motion for Summary Judgment
	269	04/09/13 Notice of Appeal to the Federal Circuit

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 10 of 14)	<i>Complete if Known</i>	
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	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 11 of 14)	<i>Complete if Known</i>	
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	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
		Other Implicit Networks, Inc. Prosecution Matters:
	270	Serial No. 11/933,022 Utility Application filed October 31, 2007
	271	Serial No. 11/933,022 Preliminary Amendment filed February 19, 2008
	272	Serial No. 11/933,022 Office Action mailed June 24, 2009
	273	Serial No. 11/933,022 Amendment filed September 24, 2009
	274	Serial No. 11/933,022 Office Action dated December 11, 2009
	275	Serial No. 11/933,022 Amendment and Response dated January 29, 2010
	276	Serial No. 11/933,022 Notice of Allowance dated March 2, 2010
	277	Serial No. 11/933,022 Issue Notification dated May 4, 2010
	278	Serial No.10/636,314 Utility Application filed August 6, 2003
	279	Serial No.10/636,314 Office Action dated April 7, 2008
	280	Serial No.10/636,314 Response to Restriction Requirement dated August 5, 2008
	281	Serial No.10/636,314 Office Action dated October 3, 2008
	282	Serial No.10/636,314 Response to Office Action dated April 3, 2009
	283	Serial No.10/636,314 Notice of Non-Compliant Amendment dated May 4, 2009
	284	Serial No.10/636,314 Amendment to Office Action Response dated June 4, 2009
	285	Serial No.10/636,314 Notice of Non-Compliant Amendment dated June 12, 2009
	286	Serial No.10/636,314 Amendment to Office Action dated July 10, 2009
	287	Serial No.10/636,314 Final Rejection Office Action dated October 21, 2009
	288	Serial No.10/636,314 Amendment after Final Office Action dated December 14, 2009
	289	Serial No.10/636,314 Advisory Action dated January 11, 2010
	290	Serial No.10/636,314 Notice of Non-Compliant Amendment dated January 11, 2010
	291	Serial No.10/636,314 Supplemental Amendment and Response dated March 13, 2010
	292	Serial No.10/636,314 Office Action dated May 11, 2010
	293	Serial No.10/636,314 Amendment and Response dated September 13, 2010
	294	Serial No.10/636,314 Final Rejection dated November 24, 2010
	295	Serial No.10/636,314 Notice of Appeal dated May 19, 2011
	296	Serial No.10/636,314 Amendment and Request for Continued Examination dated July 19, 2011
	297	Serial No.10/636,314 Notice of Allowance dated September 13, 2011
	298	Serial No.10/636,314 Notice of Allowance dated September 19, 2011
	299	Serial No.10/636,314 Issue Notification dated October 19, 2011
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	303	Serial No. 09/474,664 Notice of Allowance dated May 20, 2003
	304	Serial No. 90/010, 356 Request for Ex Parte Reexamination dated December 15, 2008
	305	Serial No. 90/010, 356 Office Action Granting Reexamination dated January 17, 2009
	306	Serial No. 90/010, 356 First Office Action dated July 7, 2009
	307	Serial No. 90/010, 356 First Office Action Response dated September 1, 2009
	308	Serial No. 90/010, 356 Patent Owner Interview Summary dated October 23, 2009
	309	Serial No. 90/010, 356 Office Action Final dated December 4, 2009
	310	Serial No. 90/010, 356 Amendment and Response to Office Action dated December 18, 2009
	311	Serial No. 90/010, 356 Amendment and Response to Office Action dated January 4, 2010

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 12 of 14)	<i>Complete if Known</i>	
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	312	Serial No. 90/010, 356 Advisory Action dated January 21, 2010
	313	Serial No. 90/010, 356 Amendment and Response to Advisory Action dated February 8, 2010
	314	Serial No. 90/010, 356 Notice of Intent to Issue a Reexam Certificate dated March 2, 2010
	315	Serial No. 90/010, 356 Reexamination Certificate Issued dated June 22, 2010
	316	Serial No. 95/000,659 Inter Partes Reexam Request dated February 13, 2012
	317	Serial No. 95/000,659 Order Granting Reexamination dated April 3, 2012
	318	Serial No. 95/000,659 Office Action dated April 3, 2012
	319	Serial No. 95/000,659 Office Action Response dated June 4, 2012 (including Exhibits 1 & 2) (4 documents)
	320	Serial No. 95/000,659 Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012
	321	Serial No. 95/000,659 Appendix R-1 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Declaration of Prof. Dr. Bernhard Plattner)
	322	Serial No. 95/000,659 Appendix R-2 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Prof. Dr. Bernhard Plattner CV)
	323	Serial No. 95/000,659 Appendix R-3 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Listing of Publications to Prof. Dr. Bernhard Plattner updated February 2012)
	324	Serial No. 95/000,659 Appendix R-4 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Office Action Granting Reexamination in 95/000,660 dated May 10, 2012)
	325	Serial No. 95/000,659 Appendix R-5 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Office Action in 95/000,660 dated May 10, 2012)
	326	Serial No. 95/000,659 Appendix R-6 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Implicit Networks, Inc. USPN 6,629,163 Claims Chart)
	327	Serial No. 95/000,659 Appendix R-7 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Internet Protocol DARPA Internet Program Protocol Specification dated September 1991)
	328	Serial No. 95/000,659 Appendix R-8 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Atkinson, "IP Encapsulating Security Payload (ESP) dated August 1995)
	329	Serial No. 95/000,659 Appendix R-9 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Claim Construction Order dated February 29, 2012)
	330	Serial No. 95/000,659 Appendix R-10-1 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. I of Edward Balassanian Deposition Transcript dated May 30, 2012)
	331	Serial No. 95/000,659 Appendix R-10-2 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. II of Edward Balassanian Deposition Transcript dated May 31, 2012)
	332	Serial No. 95/000,659 Appendix R-10-3 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. III of Edward Balassanian Deposition Transcript dated June 7, 2012)
	333	Serial No. 95/000,659 Appendix R-10-4 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. IV of Edward Balassanian Deposition Transcript dated June 8, 2012)
	334	Serial No. 95/000,659 Appendix R-11 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Implicit Networks, Inc.'s Response to Juniper Networks, Inc.'s First Set of Requests for Admission 1-32)
	335	Serial No. 95/000,659 Action Closing Prosecution dated October 1, 2012
	336	Serial No. 95/000,659 Petition to Withdraw and Reissue Action Closing Prosecution dated November 20, 2012
	337	Serial No. 95/000,659 Patent Owner Comments to Action Closing Prosecution dated December 3, 2012
	338	Serial No. 95/000,659 Opposition to Petition dated December 17, 2012
	339	Serial No. 95/000,659 Third Party Comments to Action Closing Prosecution dated January 2, 2013
	340	Serial No. 95/000,660 Inter Partes Reexam Request dated March 2, 2012
	341	Serial No. 95/000,660 Order Granting Reexamination dated May 10, 2012

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Application Number	13/911,324
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First Named Inventor	Edward BALASSANIAN
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Examiner Initials*	Cite No.	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	342	Serial No. 95/000,660 Office Action dated May 10, 2012
	343	Serial No. 95/000,660 Response to Office Action dated July 10, 2012 (including Exhibits 1 and 2)
	344	Serial No. 95/000,660 Third Party Comments to Office After Patent Owner's Response dated August 8, 2012 (including Revised Comments)
	345	Serial No. 95/000,660 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Declaration of Prof. Dr. Bernhard Plattner)
	346	Serial No. 95/000,660 Appendix R-1 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Prof. Dr. Bernhard Plattner CV)
	347	Serial No. 95/000,660 Appendix R-3 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Listing of Publications to Prof. Dr. Bernhard Plattner updated February 2012)
	348	Serial No. 95/000,660 Appendix R-4 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Office Action Granting Reexamination in 95/000,660 dated May 10, 2012)
	349	Serial No. 95/000,660 Appendix R-5 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Office Action in 95/000,660 dated May 10, 2012)
	350	Serial No. 95/000,660 Appendix R-6 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Implicit Networks, Inc. USPN 6,629,163 Claims Chart)
	351	Serial No. 95/000,660 Appendix R-7 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Internet Protocol DARPA Internet Program Protocol Specification dated September 1991)
	352	Serial No. 95/000,660 Appendix R-8 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Atkinson, "IP Encapsulating Security Payload (ESP) dated August 1995)
	353	Serial No. 95/000,660 Appendix R-9 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Claim Construction Order dated February 29, 2012)
	354	Serial No. 95/000,660 Appendix R-10 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Vol. I-IV of Edward Balassanian Deposition Transcript dated May 30, 2012)
	355	Serial No. 95/000,660 Appendix R-11 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Shacham, A., et al, "IP Payload Compression Protocol", Network Working Group, RFC 3173 September 2001)
	356	Serial No. 95/000,660 Appendix R-12 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Shacham, A., et al, "IP Payload Compression Protocol", Network Working Group, RFC 2393 December 1998)
	357	Serial No. 95/000,660 Appendix R-13 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 ('163 Pfeiffer Claim Chart)
	358	Serial No. 95/000,660 Appendix R-14 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Ylonen, T., "SSH Transport Layer Protocol", Network Working Group – Draft February 22, 1999)
	359	Serial No. 95/000,660 Appendix R-15 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Dommety, G., "Key and Sequence Number Extensions to GRE", Network Working Group, RFC 2890 September 2000)
	360	Serial No. 95/000,660 Appendix R-16 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Monsour, R., et al, "Compression in IP Security" March 1997)
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	362	Serial No. 95/000,660 Appendix R-18 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Implicit Networks, Inc.'s Response to Juniper Networks, Inc.'s First Set of Requests for Admission 1-32)
	363	Serial No. 95/000,660 Revised - Third Party Comments to Office After Patent Owner's Response dated November 2, 2012
	364	Serial No. 95/000,660 Action Closing Prosecution dated December 21, 2012
	365	Serial No. 95/000,660 Comments to Action Closing Prosecution dated February 21, 2013 (including Dec of Dr. Ng)
	366	Serial No. 95/000,660 Third Party Comments to Action Closing Prosecution dated March 25, 2013
	367	PCT/US00/33634 – PCT application (WO 01/2077 A2 - 7/12/01)
	368	PCT/US00/33634 – Written Opinion (WO 01/50277 A3 – 2/14/02)

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369	PCT/US00/33634 – International Search Report (10/9/01)
370	PCT/US00/33634 – Response to Official Communication dated December 7, 2001 (3/21/02)
371	PCT/US00/33634 – International Preliminary Examination Report (4/8/02)
372	PCT/US00/33634 – Official Communication (1/24/03)
373	PCT/US00/33634 – Response to Official Communication dated January 24, 2003 (3/12/03)
374	PCT/US00/33634 – Official Communication (5/13/04)
375	PCT/US00/33634 – Response to Summons to Attend Oral Proceeding dated May 13, 2004 (10/9/04)
376	PCT/US00/33634 – Decision to Refuse a European Patent application (11/12/04)
377	PCT/US00/33634 – Minutes of the oral proceedings before the Examining Division (10/12/04)
378	PCT/US00/33634 – Closure of the procedure in respect to Application No. 00984234.5 – 2212 (2/22/05)
379	05/03/13 Expert Report of Dr. Alfonso Cardenas Regarding Validity of U.S. Patent Nos. 6,877,006; 7,167,864; 7,720,861; AND 8,082,268
	(6 documents)
380	Expert Report of Dr. Alfonso Cardenas Regarding Validity of U.S. Patent No. 7,167,864
	(3 documents)
381	“InfoReports User Guide: Version 3.3.1;” Platinum Technology, Publication No. PRO-X-331-UG00-00, printed April 1998; Pages 1-430.

Examiner Signature:	Date Considered:
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CERTIFICATION STATEMENT	
A certification statement is not submitted herewith.	
SIGNATURE	
A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18.	
Signature: /Dean M. Munyon/	Date: 2013-06-25
Name/Print: Dean M. Munyon	Registration Number: 42,914

Electronic Acknowledgement Receipt

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First Named Inventor/Applicant Name:	Edward Balassanian
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_PTO-1449.pdf	270324 <small>5fd6ad640da37ba64128e3ec1f5c15f9d7c68675</small>	no	14

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Information:

Juniper Ex. 1004-p. 104

Juniper v Implicit

Total Files Size (in bytes):

270324

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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(54) **Using a distributed object system to find and download java-based applications**

(57) A client enabled to load and run Java applets in a distributed object computing system retrieves needed Java classes in a location-independent manner from various class servers in the system. Initially, the client queries a naming service of the distributed object computing system to determine the class server that contains the base class needed. A connection through an object request broker is made from the client to the class server. The client then requests the code for the base class from the class server by using the object request broker. The class server retrieves the code by either reading a file from its own local file set, or if the code is not local, queries the naming service for another class

server that has access to the code for the base class. This process of finding a class server and determining if the code is local may be recursive as classes may be moved or renamed. The class server then returns this code to the client by way of the object request broker. The client determines whether the returned code contains any unresolved classes, i.e., classes that are used but not yet defined or loaded. The client requests code for any unresolved class in a manner as above for the base class. The client incorporates Java software to run the applets and ORB binding software to enable the software to make calls to the object request broker. A network class loader enables the client to load and resolve classes over a distributed object system.

Description

FIELD OF THE INVENTION

The present invention relates generally to acquiring application program code within a computer system. More specifically, the present invention relates to acquiring Java-based applications within a distributed object system.

BACKGROUND OF THE INVENTION

With the increasing popularity of the Internet, there has been a corresponding increase in the demand to be able to transfer and to view information via the Internet. In general, the Internet is used to communicate with others via electronic mail and also to view information within an international network of computers. One aspect of the Internet is the World Wide Web (the "Web"). Among other uses, the Web is used to access Web sites (or Web pages) of a particular company, organization or person. These Web sites contain information and are available for viewing as part of the World Wide Web. When a user accesses a Web site, typically information from that Web site is downloaded to the user's computer. This information includes graphics, windows, text, photographs, sound, video and other information suitable for passing over a computer network.

Typically, software known as a "Web browser" is used to browse through the Web to search for particular Web sites and information, to connect to a particular Web site, and finally to download the information from that Web site onto the user's computer. A wide variety of Web browsers are available. By way of example, two popular Web browsers are "Netscape" and "Mosaic". When using such a browser to download information from a Web site, the information often appears within a window on the screen of the user's computer. And it is then often desirable to also load executable program code that may then be executed on the user's computer within the window or a smaller sub-window. One technique available for loading and executing program code on a user's computer uses the Java programming language available from Sun Microsystems, Inc., of Mountain View, California.

Java is a programming language that also includes an interpreter as a run-time environment. It is an object-oriented programming language that is designed to support applications on networks. Java applications that execute within the run-time environment are known as applets. A Java applet contains compiled code that is portable and may be executed on any computer running the Java interpreter. Structurally, each applet is a collection of classes that may be stored on a computer in a file system. Because Java is a dynamic language these classes may be loaded as they are needed from across a network. There may be one class per file, or there may be many classes in a given file. Java may be running on

a single computer or on a number of computers within a network. And although Java may be used in conjunction with a Web browser, Java may also be used as part of any computer system or network. A description of the Java language may be found in "Java in Nutshell" by David Flanagan, available from O'Reilly & Associates, Sebastopol, California, 1996.

Before the popularity of the Web, a Java interpreter loaded applets for execution that were present on the local computer. In Java, typically a base class desired is loaded first, and this base class indicates further classes that are used by the base class and thus need to be loaded as well. Classes that are needed but not yet loaded are termed "unresolved", whereas classes that are needed and that are loaded (or defined) are termed "resolved." So, before the use of the Web, the classes of a particular applet were stored in a collection of files in a file system of the local computer. The Java interpreter running on the local computer would then access the local file system and retrieve the files corresponding to the classes it needed. Unfortunately, Java would then only be able to retrieve applets available from the local file system because only the local file system is known to the Java interpreter. Also, these classes had to be specified by giving a fixed file name.

With the advent of browsers available for the Web, however, Java is able to find and download applets from remote sites; however, this acquisition of applets is still limited. In these situations, a browser typically incorporates a Java interpreter in order to execute applets that are downloaded. A Java applet is downloaded by first identifying the name of the base class desired. Once that base class is identified and loaded, the other classes used by that base class are then retrieved and loaded into the Java interpreter. Because a browser typically uses the hypertext transfer or "http" protocol, the location of these Java classes within the computer network are identified using a Universal Resource Locator (URL) address. A URL address connects machines together. It provides a machine name plus a path to a file on that machine. Thus, through the URL address, the individual files that contain the Java classes may be identified within a computer network. The http server running on the identified machine reads these files and then sends the classes (in the form of executable bytes) back to the requesting browser for execution.

An example of how this process works may be illustrated as follows. Typically, Web pages are described in a hypertext markup language (HTML) that defines how the Web page will appear and perform when downloaded to the user's computer. In the course of using a Web browser such as Netscape for downloading such a Web page, the user may encounter a Java applet embedded in the HTML that indicates a base class to load. In other words, the HTML page data that a user may acquire through Netscape contains references to applet classes that may be used to execute small programs in parts of the page. Thus, Netscape would be directed to locate

and download the code for the applet to run in the frame that the page defines. This code is found by reference to a specific URL address that identifies a particular computer.

The drawback with either defining Java classes as being contained in files available on a local file system or as being contained in files that are accessible through a URL address is that these file names are "hard-wired", in other words, the user who desires an applet must know the actual name of the file that corresponds to a physical machine somewhere. It may be difficult to obtain or to update this name. For example, if the Java applet or any of its classes are moved, then these file names must be changed. This is an awkward and undesirable situation in the context of the Internet where applets and classes might be located in different locations and where it may be desirable to move these classes. For example, an applet might be used in the context of a Web browser where the applet performs the function of displaying satellite weather information for a particular Web site. In the course of displaying the information, the applet may need to find and download various classes within the network. It would be undesirable if one class could not be found either because its hard-wired file path name had changed or if the class name had changed. Such a situation might result in the weather display halting while only halfway done. Also, if the particular computer is down, the needed classes are inaccessible even if those classes are available elsewhere in the network.

Especially within a distributed object system, the current model for finding and downloading Java classes according to "hard-wired" file names breaks down. For example, the beauty of a distributed object system is that references may be made to objects (such as classes or files) without needing to know where exactly those objects are located. Also, a proper distributed object system allows those objects to be located anywhere within the system yet still allow a requesting entity to find the objects that it needs. Thus, current schemes for finding and downloading Java classes according to a "hard-wired" file name are not suitable within a distributed object system. Accordingly, it would be desirable to have a technique for finding and downloading Java-based applications within a distributed object system. Such a technique would allow a requesting entity to query one source for an applet yet be able to find and download all classes needed by that applet no matter where they exist within the distributed object system and without having to give an exact host machine and file name for these classes.

SUMMARY OF THE INVENTION

Embodiments of the present invention relate to apparatus and methods used to acquire applet execution code within a distributed object computing system. The distributed object computing system includes clients,

applet servers and an object request broker arranged to facilitate communication between the clients and the applet servers. In a method aspect, initially a client queries the object request broker to determine if there is an applet server available within the system that may be used to obtain particular applet execution code. In another step, the client requests a portion of this applet execution code from a found applet server by using the object request broker. Once requested, the applet server retrieves a portion of the desired applet execution code. The applet server is then able to return this portion of applet execution code to the client by way of the object request broker.

In a related aspect, the client incorporates applet software to enable the client to run the applet execution code. The client may also have loaded specialized ORB binding software to enable the applet software to make calls to the object request broker, and may have a network class loader to enable the client to load portions of the applet code and to resolve portions of the code. The applet software may be a version of the Java programming language and run-time environment that allows the client to run Java applets acquired over the distributed system. These Java applets may be stored as Java classes available from various class servers in the system. In one aspect, the portions of applet execution code are Java classes. Also, the distributed object system may include a naming service used by a client to locate the applet server for a particular class.

In one embodiment, an applet server retrieves the requested applet execution code by determining whether a portion of the applet execution code is found within its local file set. If the portion is present, then the applet server reads a file in order to retrieve the code and then returns it to the requesting client. If the portion is not present in the file set, then the applet server queries the naming service to determine if there is another applet server within the distributed object computing system that is associated with the desired portion. If this second applet server is found, it may perform this determination process in a recursive manner until the desired portion of applet execution code is found.

In another aspect, once the portion of applet execution code is returned to the client, the client determines whether the portion of code contains any unresolved references to any other portion of the applet execution code. These unresolved references may take the form of classes used by loaded execution code that are not yet defined or loaded. If there are unresolved references, the client requests additional applet execution code corresponding to these unresolved references from the first applet server found. In turn, this applet server either returns the code itself, or queries the naming service for another applet server with access to the code. In this fashion, all applet execution code needed is loaded into the client for execution.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention, together with further advantages thereof, may best be understood by reference to the following description taken in conjunction with the accompanying drawings in which:

FIGURE 1a illustrates a distributed object system having an object request broker (ORB) portion, object development facilities and client and server objects according to one embodiment of the present invention.

FIGURE 1b shows the flow of a request from a client to a servant object within the distributed object system of Figure 1a.

FIGURE 1c is an embodiment of an object reference suitable for use within the distributed object system of Figures 1a and 1b.

FIGURE 2 shows a Java client using an object request broker in order to download Java class files from various class servers according to one embodiment of the present invention.

FIGURE 3 shows in greater detail the Java client of FIGURE 2 including modules that it uses to download Java classes according to one embodiment of the present invention.

FIGURE 4 is a flow chart for acquiring Java classes within a distributed object system according to one embodiment of the present invention.

FIGURE 5 is a flow chart showing the request code step of FIGURE 4 in greater detail according to one embodiment of the present invention.

FIGURE 6 shows a typical computer system suitable for implementing the present invention.

DETAILED DESCRIPTION OF THE INVENTION

OVERVIEW

The present invention is directed toward distributed object systems and will be described with reference to several preferred embodiments as illustrated in the accompanying drawings. The invention may be practiced within the context of any suitable distributed object system, including those defined under CORBA or any other suitable specification. However, for purposes of illustration, an embodiment of the present invention will be described primarily within the context of an Object Request Broker (ORB) implemented under the CORBA specification from the Object Management Group (OMG), Revision 2.0, dated July 1995. Figure 1a diagrammatically illustrates the overall architecture of a representative distributed object system suitable for implementing an embodiment of the present invention. Figure 1b diagrammatically illustrates some possible flow paths that a request from a client to a servant object may follow within such an architecture that includes a three-level dispatch mechanism. Figure 1c shows one object reference data structure that may be used by a client to refer to a servant object.

A distributed object system 10 typically includes an Object Request Broker (ORB) 11 as is symbolically illustrated in Figure 1a. ORB 11 provides all of the location and transport mechanisms and facilities necessary to deliver a call from a client to a servant (target object) and to return a response to the client, as will be discussed below with reference to Figure 1b. The client and servant may be located in the same process, in different processes on the same machine, or on completely different machines. For the purposes of this discussion, client 20 may be any code that invokes an operation on a distributed object and thus may or may not take the form of a distributed object or a process. A distributed object may have a wide variety of representations. By way of example, the distributed object may be a C++ object that has been provided by an application developer. Alternatively, an implementation for a distributed object may be developed within a visual application builder 15. This visual application builder allows a developer to visually select existing object types from a catalog and graphically connect the services provided by one object to the services needed by another (attributes, arguments, results etc.) in order to create a new implementation for an object.

An object development facility 16 may be used to simplify the creation and the installation of distributed objects. It is used to "wrap" or encapsulate developer objects in distributed object code. As such, object development facility 16 may be used to transform a developer object into an ORB object implementation 14. In this example, ORB object implementation 14 is presented as a server as shown by its location in the diagram. A developer uses an interface definition language to define an interface for an ORB object, provides a developer object implementation that implements that object's behavior, and then uses the object development facility 16 in order to produce an ORB object implementation 14. At run time, an instance of this ORB object (a servant object) is created that will utilize this ORB object implementation 14. It should be appreciated that the object development facility may also be used to create objects that take the role of clients at some point.

Client 20 communicates with a servant by way of a stub 21, a subcontract layer 36, possibly a filter 40, and a transport layer 38. Stub 21 includes a surrogate 22, a method table 24 and stub functions 25. Client 20 communicates initially with surrogate 22 that appears to the client as the servant object. Alternatively, client 20 may communicate directly with the servant object through a dynamic invocation interface (DI) 26 instead of through surrogate 22, method table 24 and stub functions 25. Dynamic invocation interface 26 is used to enable clients to construct dynamic requests. A procedure by which a client calls a servant utilizing the above layers is described in Figure 1b.

Subcontract layer 36 provides the functionality required by an object in order to utilize subcontracts to implement various services (or features or object mech-

anisms named by a particular subcontract. A subcontract identifies a quality of service provided by the distributed object system that may be utilized by an individual object. For example, a subcontract may identify that the feature of security is to be used for a particular object. A particular subcontract may be associated dynamically at run time with a servant object. Filter 40, if being used, may perform a variety of tasks, such as compression, encryption, tracing, or debugging, that are to be applied to communications to and from an object. Transport layer 38 operates to marshal, unmarshal and physically transport information to and from a servant that typically does not share the same process as a client.

A standard implementation suite 28 (or object adapter) represents a set of subcontracts that interact with ORB objects 14 in identical ways, as in object key management. A subcontract may also belong to multiple-implementation suites. Also, implementation suites may utilize different subcontracts. A skeleton, that may take the form of either static skeleton 32 or dynamic skeleton 30, is used to transform requests into a format required by a servant object 78 (as will be explained in more detail below with reference to Figure 1b). Thus, skeletons 30 and 32 call an appropriate servant object 78. Static skeleton 32 is used to call interface-specific object implementations 14, while dynamic skeleton 30 is used generically when interface-specific objects are not available. An ORB interface 34 is the interface that goes directly to the ORB that is the same for all ORBs and does not depend upon an object's interface or object adapter. An ORB daemon 46 is responsible for ensuring that object servers are active when invoked by clients.

Secure Protocol 42 is a secure interoperability protocol that secures the internet inter-ORB protocol and helps to transmit information through transport layer 38 in a secure fashion. This may mean integrity protection, confidentiality, etc. The internet inter-ORB protocol is a protocol that typically communicates between processes on different machines. However, in some cases, the internet inter-ORB protocol may communicate between processes on the same machine. Security server 54 is a security administration server that secures the services that are used between processes on different computers.

Typecode/Any module 44 implements "Typecode" and "Any" objects. Typecode describes an Interface Definition Language (IDL) data type, allowing type descriptions to be transmitted between clients and servers. An instance of an IDL data type may be encapsulated by an Any object. An Any object refers to typecode of the encapsulated data, and a generic encoding of the data.

An implementation repository 50 is used to store information relating to object servers. Specifically, implementation repository 50 stores the information needed to start a server process. For example, implementation

repository 50 stores information such as the location of the server program, any arguments to the program, and any environment variables to pass to the program, etc.

Simple persistence 56 uses an Interface Definition Language (IDL)-defined type and the output from running that IDL type through the IDL compiler, together with a portion of additional code so that an IDL-defined type can be read from, and written to, disk. A naming service 52 is used to name ORB objects. A client may use naming service 52 to find a desired object by name. Naming service 52 returns an object reference, that in turn may be used to send requests to that object. An Interface Repository 48 (IFR) knows about all interfaces for all objects within the distributed object system.

A request made by a client using a method table ("m-table") dispatch will pass through a variety of the aforementioned layers of the architecture on its way to the servant as diagrammatically illustrated in Figure 1b. The request is initiated by a client and may take any suitable form. The form of the request will depend to a large extent upon the nature of the programming language used to create the client. By way of example, if the client is written in the C++ language, the request may take the form of a C++ method call 62. The call is made to a designated object reference taking the form of a surrogate. The surrogate includes methods that comply with the object's interface.

As will be appreciated by those skilled in the art, the object reference used at different locations within a distributed object system may vary significantly in appearance. In the embodiment described, the client side object reference is a dual pointer (referred to herein as a "fat pointer"). A fat pointer contains two distinct pointers. A first pointer points to a client representation ("client rep") associated with the referenced object. A second pointer points to a method table of the method table dispatch 24 that is associated with the referenced object. A client representation is an object that has methods that support invocation as well as CORBA defined "pseudo" object reference operations. These operations include, but are not limited to, a "duplicate" method, a "release" method, a "narrow" method, a "hash" method, and an "is equivalent" method.

After the client has initiated a call, the call is processed using a method table dispatch mechanism 24. The method table dispatch mechanism uses a method table that contains a list of pointers to stub functions 25, one of which is associated with the method to be invoked. Stub functions 25 receive a function or procedure call in the "native" language of the client process, then use either a subcontract layer 36 or a native call to eventually call the corresponding servant object. The native language may be any suitable language, as for example a language such as C++.

Method table dispatch 24 determines the appropriate one of the stub functions 25 to process the method call, and then pairs the method call with the appropriate stub function. In the event that the client making the

method call is in the same process as the servant object, a local stub function is called. The local stub function sends the method call directly to servant object 78. Alternatively, if the servant object is in a different process, i.e. a remote process, a remote stub function is called. The remote stub function invokes the client representation, that delivers the invocation to servant object 78.

Subcontracts implemented by subcontract layer 36 are logic modules that provide control of the basic mechanisms of object invocation and argument passing that are important in distributed object systems. A subcontract implemented by subcontract layer 36 determines a specific quality of service for use by an object. A subcontract is uniquely identified by a subcontract identifier typically embedded in an object reference. A quality of service is a set of service properties. Among possible service properties that are selectable are qualities relating to server activation, security, transactions, filterability, and clean shutdown. Subcontracts are configured such that certain qualities of service are available. With predetermined qualities of service, the overhead associated with processing individual service properties is reduced. Realistically, only commonly used combinations of service properties are supported with subcontracts. However, subcontracts may be created to meet the specific requirements of a given distributed object system.

The identification of an appropriate subcontract in subcontract layer 36 may be thought of as the identification of a desired function that is unique to that subcontract. For example, a marshal function or an unmarshal function is defined for each subcontract. A subcontract marshal function is used by a stub to marshal an object reference so that it may be transmitted to another address space, or domain. The object reference is typically processed by a transport mechanism in transport layer 38.

A transport mechanism such as T1, T2, etc., that is a part of transport layer 38 is used to marshal and physically transport information to and from servant objects. Information, i.e. the object reference or the request, is converted into protocols appropriate to a given domain. By way of example, protocols may include Ethernet protocols and general inter-ORB protocols (GIOPs). In some uncommon cases, protocols may even entail the use of electronic mail to transmit instructions to be implemented on a server. After information is marshaled, the transport mechanism then transports information through any combination of an operating system, a device driver, or a network, that are all a part of hardware 70 used by the client side of a distributed object system.

While transport mechanisms require a conversion of information into a protocol appropriate to a given domain, some transport mechanisms do not require the encoding of information for different domains. One transport mechanism that does not require a conversion of information into a protocol appropriate to a domain other than the one on which information originates is

termed a "door". Doors are essentially gateways between two different processes on the same host. The use of doors eliminates the need for a conversion of information into a canonical implementation in transport layer 38, as there is no need to encode information into a protocol that may be used by a different machine by virtue of the fact that information is remaining on the same host and therefore does not require a change of domain. Hence, information may simply be "flattened out," or marshaled into a stream that is not encoded for use by a different machine, and passed between the two processes on the host.

Once information is transported through hardware 70 used by the client side, the information is then transported to hardware 70 on the server side of a distributed object system. Once information is routed through hardware 70, the server side of a distributed object system invokes a transport mechanism such as T1, T2 etc. to receive information on an end point that is a part of transport layer 38. In the event that an end point is not created by transport layer 38, transport layer 38 provides the functionality needed for the end point to be created by subcontract layer 36. By way of example, a dedicated end point is typically created by subcontract layer 36, while cluster end points, which typically include network and TCP/IP end points, are typically created by transport layer 38. Regardless of whether end points are created by subcontract layer 36 or transport layer 38, end points "live in," i.e. are a part of, transport layer 38. End points are essentially ports that receive information from a different domain. After an end point in transport layer 38 receives information transported from a different domain, the end point then dispatches the information from transport layer 38 to subcontract layer 36. Subcontract layer 36 then dispatches the information to the skeleton and the servant.

Subcontract layer 36 provides the functionality to unmarshal at least some of the information it has received. That is, subcontract layer 36 unmarshals at least part of the request. Then, the request is dispatched to a skeleton 31 that transforms the request into an implementation specific format required by servant object 78. The skeleton 31 may either be a static skeleton 32 or a dynamic skeleton 30 as described above.

In general, a remote request is routed through the client side and the server side as described above. The method call 62 is received, method table dispatch layer 24 is used to identify an appropriate subcontract prior to the selection of a transport mechanism in transport layer 38 that marshals the request and prepares it for transport to another domain. Through hardware 70, the marshaled request is transported to the server side where it is received on an end point that is a part of transport layer 38. An appropriate end point receives information transported across a wire, and information is dispatched from transport layer 38 to subcontract layer 36, that provides the functionality to at least partially unmarshal the information it has received. The subcontract layer then

dispatches the request to skeleton 31 that transforms the request into a specific format required by servant object 78. This path is shown by arrow 77, and is the path that may be taken by both remote and local requests.

However, if a client and a server are in a local process, i.e. both the client and the server are in the same process, the use of the path shown by arrow 77 as described above is unnecessarily complex. If it is known that the client and the server are in the same process, it is possible to shorten the invocation path, or flow path of a request for service. If a local process may be identified when an object reference is created, shortened flow paths, i.e. the paths represented by arrows 75 and 76, may be taken to send a request from a client to a server that are on the same host. The path represented by arrow 76 is more likely to be taken, as it uses subcontract layer 36 to identify an appropriate subcontract. However, in situations in which an appropriate subcontract does not need to be explicitly identified, the path represented by arrow 75 may be taken.

Figure 1c will now be used to describe an embodiment of an object reference. As will be familiar to those skilled in the art, object references may take a variety of forms depending upon the location within the process that they are being held at any given time. However, by way of background, a representative object reference for use in a system that utilizes a low overhead implementation suite is illustrated in Figure 1c. In the implementation shown therein, object reference 150 includes a host identifier 152, a port designation 154, and an object key 156. Object key 156 includes a subcontract identifier 158, a server identifier 160, an implementation identifier 162, and a user key 164. Host identifier 152 denotes a particular computer in a network, while port designation 154 identifies the port of the selected computer that is to be used for communication. Object key 156 provides further identifying information used in order to locate a desired servant object on its host machine.

Server identifier 160 names a particular process or program in which the servant object resides, while user key 164 is a unique number or string used to locate the servant within the process named by server identifier 160. Subcontract identifier 158 is used to attach the protocol of a particular subcontract and its associated services with a servant, and implementation identifier 162 names an implementation of an interface that is to be used with that servant object.

FINDING AND DOWNLOADING JAVA-BASED APPLICATIONS

An embodiment of the present invention provides a mechanism by which a requesting client may acquire the classes it needs within a distributed object system in order to run a particular applet. In one embodiment, this mechanism uses an object request broker (ORB) in

order to communicate with one or more class servers that provide access to the class files needed. Thus, an ORB of a distributed object system is used to find the class files needed in a location independent manner. One advantage to using an ORB is that these class files and their associated class server may be located anywhere within the distributed object system yet may still be found by the client. Also, this mechanism allows a client a single point of access to the distributed object system in order to find the class files that it needs. And even though these class files may be in different locations, these class files are retrieved in a manner transparent to the requesting client. That is, the client knows a base class that it wishes to load, but is mercifully unaware of all the machinations behind the scenes required to find other classes used or needed by this base class. Also, a request from a client may pass from an ORB of one distributed object system to an ORB of another.

A wide variety of clients are contemplated that may benefit from being able to find and download executable code according to the present invention. By way of example, one particular client is a client running Java software that is enabled to communicate with an ORB and to download Java classes. Also, in a broad sense, an embodiment of the present invention is able to load any applet execution code. That is, applet execution code may be any execution code that can be downloaded and executed by a client. As used herein, the term "applet" refers to a body of executable program code, which code is effective to implement a function or facility when used in conjunction with a supporting execution environment. An "applet" may refer to a wide variety of types of execution code. By way of example, an applet may be a collection of byte codes representing classes that are executed by a remote interpreter, such as Java classes that are executed using a Java language interpreter. These byte codes may also be compiled before execution, or may even undergo a combination of interpretation/compilation before execution. The Java interpreter may reside inside a Web browser. And in particular, applet execution code may refer to code that represents an implementation of a Java class. And applet may mean in particular a small Java program that can be embedded in another application such as an HTML document in order to provide interactive, executable content on a Web page. A Java class may be defined as a collection of data and methods that operate on that data. Together, the data and methods describe the state and behavior of an object.

The present invention is useful and advantageous in many different scenarios. By way of example, an embodiment of the present invention is useful when a Java client wishes to query an object about what its presentation is. The presentation of a particular object may be used to run an executable program in a small window within a larger window. An object may be given the ability to give to the client its presentation, that is an implemen-

tation of the object's "front end" or interface. In this example, the presentation of an object is an applet that is represented as a location independent object. Thus, by way of an embodiment of the present invention, the Java client may use the ORB in order to find this location independent object wherever it may be within the distributed object system. Once found, the applet may be downloaded to the client by way of an embodiment of the present invention and executed within the client. The present invention may be applicable in many other situations that will be apparent from the description of the figures below. Figures 2 and 3 illustrate an embodiment of the present invention for use within a distributed object system, and Figures 4 and 5 show a flow chart for how the invention may be practiced according to one embodiment.

Figure 2 illustrates graphically how in one embodiment of the invention a Java client 202 may communicate via a communication mechanism 206 in order to acquire Java class files 209 and 211 within a distributed object system 200. Java client 202 may be a Web browser incorporating a Java interpreter or may be any Java-enabled client that wishes to download an applet for use. A communication mechanism for allowing a Java client to communicate with remote class servers in order to find and download class files may be implemented in a wide variety of manners. By way of example, this communication mechanism may be implemented as an object request broker of a distributed object system. And in particular, this object request broker, or ORB, may be implemented as described above with reference to Figures 1a, 1b, and 1c. Class servers A and B are objects within the distributed object system that are implementations of a particular interface definition language (IDL). In other words, a class server may be defined by an IDL, and may include a variety of operations and attributes defined upon it. Associated with each class server on the same machine are files containing Java classes. For example, class server A has an associated file set 209 and class server B has an associated file set 211. Thus, Java classes may be located on any machine within a distributed object system and are accessible by a Java client via their associated class server as will be explained in more detail below.

Also included within the distributed object system 200 is a naming service 208. The naming service 208 allows object names to be registered so that a client may determine the location of a particular object by reference to the naming service. In this way, objects may refer to other objects by name. A naming service may be implemented in a wide variety of manners. By way of example, the naming service may be one module of the Object Services layer of a distributed object system as defined under the OMG CORBA standard.

In one embodiment, the process by which a Java client acquires classes for an applet occurs as follows with reference to the circled numerals. Arrows (1) show how a Java client 202 may use the naming service 208

and the ORB 206 in order to determine a particular class server A that has access to a given class name that the client desires to be loaded. If this class name is contained within the file set 209 associated with class server A, then arrow (2) shows how class server A retrieves the file containing the class name from its file set 209. However, if this class name is not present in the associated file set 209, then arrows (3) illustrate graphically how class server A will itself utilize the naming service in order to determine a second class server B that does have access to the desired class name. Arrow (4) shows how this class server B will access its associated file set 211 in order to retrieve the executable program code corresponding to this class name. Arrow (5) shows how this class code corresponding to the class name desired by the Java client is finally returned via the ORB 206 to the Java client 202. It should be appreciated that the communication taking place as indicated by arrows (1), (3) and (5) is machine independent. That is, the code associated with a particular class name may be moved to a new machine or given a new name as long as the naming service is updated to indicate the new location or name. In this fashion, an embodiment of the present invention advantageously allows classes associated with an applet to be located anywhere within a distributed object system in a way that is transparent to the requesting client.

Figure 3 shows in greater detail the Java client 202 and its implementation that allows it to communicate with the ORB and to download Java classes. Java client 202 may be a Web browser using a Java interpreter or any Java-enabled client. Simply by itself, Java client 202 with only a Java interpreter is not enabled to talk to a distributed object system through the use of an ORB 206. Thus, an ORB binding mechanism 302 is used to enable the Java client to communicate with a distributed object system through an ORB 206, in one embodiment. ORB binding 302 is a collection of Java classes that the Java client acquires in a conventional way such as through a URL address or through a local file system. The ORB binding 302 is a module loaded in to a Java interpreter that enables the Java client to talk to an interface definition language (IDL) and to make distributed object calls. In one sense, ORB binding 302 is a connector between a Java interpreter and an interface definition language. The Java client bootstraps itself to the ORB by loading in these classes and thus extending its capabilities. The ORB binding may be implemented in a variety of manners. By way of example, ORB binding 302 may be a software module.

Once the Java client 202 has the capability to talk to an ORB 206 it also needs the capability to load and resolve classes available from the distributed object system. The network class loader 304 is a mechanism that allows a Java client to load and define new classes at run time. It also has functionality to allow classes to be resolved. If a downloaded class uses other classes that are not currently known or defined within the Java

client, these other classes must be found and loaded ("resolved"). The network class loader 304 is called to acquire these needed classes. The network class loader also emits requests from the Java client in response to a client request for particular Java code. The network class loader is available within a computer network, and may be loaded or acquired by the Java client in a conventional way that a Java client acquires a class. For example, a call to a local file system or to a known URL address loads the network class loader 304. The network class loader 304 may be loaded into Java client 202 as shown by arrow 306 where it is then shown within the Java client as 304'. Once the ORB binding 302 and the network class loader 304' are present in Java client 202, the Java client is ready to acquire needed Java classes over a distributed object system.

Figure 4 shows a flow chart 400 for acquiring a Java class needed by a particular client according to one embodiment of the present invention. For example, in the course of a particular client application, a distributed object has produced the name of a class needed to execute within a Java interpreter. The procedure shown in Figure 4 uses a distributed object system according to one embodiment of the present invention in order to load this class and any other classes it uses. A wide variety of classes exist that may be desirable for loading into a client application. A class desired may depend upon the specific client application. By way of example, classes that implement a portion of a graphical user interface, so-called "panel classes", are suitable for acquiring through use of an embodiment of the present invention. These "panel classes" are especially suitable when the graphical user interface may vary based upon the nature of a distributed object that it is being used to manipulate.

When this acquire class procedure begins, the ORB binding and network class loader have already been loaded into the Java client as shown in Figure 3. In a first step 402, the class name that is desired to be loaded is received. Next, the class server object located somewhere within the distributed object system that has access to the desired class name must be determined. Thus, in step 403, the network class loader (NCL) queries the naming service in order to determine the appropriate class server. This step is illustrated graphically in Figure 2 by arrows (1). In step 404, if no class server is found that corresponds to the desired class name, an error is returned in step 405 and then the procedure ends. However, if a class server is found that corresponds to the desired class name, then in step 406 the ORB establishes a connection to this found class server.

Now that the class server has been found, the NCL requests the class execution code from the class server that corresponds to the desired class name in step 408. The execution code for a particular class may be represented in a wide variety of manners. By way of example, this execution code may take the form of an array of bytes that are stored in a file or files. In step 408 the class server may obtain the necessary class files locally

or it may need to request these files of another class server. This process will be described in greater below with reference to Figure 5.

Once this execution code for class name has been retrieved, it is delivered to the network class loader within the Java client in step 410. Next, in step 412, the NCL passes this execution code to the Java interpreter. At this point, because the recently loaded class may use other classes, the Java interpreter must resolve any undefined class references. For example, if the retrieved execution code of the class indicates that other classes are used and these classes are not currently defined within the Java interpreter, then the execution code for these undefined class names must also be retrieved from class servers somewhere within the distributed object system. Step 416 tests whether there are any unresolved classes remaining within the Java interpreter. If not, this indicates that all execution code needed by the original class requested is present in the Java interpreter, and in step 420 this original class is returned to the requesting client as being resolved.

However, if there are one or more unresolved classes, then in step 418 the Java interpreter asks the NCL for the execution code of a first unresolved class. From step 418 the procedure loops back to step 408 in which the NCL requests from the class server the appropriate class execution code. In this fashion, this portion of Figure 4 may loop through steps 408 to 418 until all execution code has been retrieved for all unresolved classes. Thus, it should be appreciated that by reference to an original class name, the client application is able to load and resolve all necessary classes for this original class over a distributed object network.

Figure 5 explains in greater detail step 408 of Figure 4 according to one embodiment. Because a class server may not be able to find a particular class within its own associated file set it may be necessary to look elsewhere within the distributed object system for the class needed. In this fashion, an embodiment of the present invention is able to find Java classes anywhere within a distributed object system and in a manner transparent to the client. In this embodiment, the original class server found determines that it does not have local access to the class needed and is able to search for other class servers.

Initially, in step 502, the class server determines whether the desired class is present in the file set of the class server. If the class (and its corresponding execution code) is found in the server's file set, then in step 504 this file is read and the appropriate execution code is passed back to the NCL within the Java client. However, if the class is not in the server's file set then this class server must look elsewhere in order to find the class. In step 506 this first class server queries the naming service in order to find a class server that does correspond to the desired class name. In other words, the first class server is looking for another class server that has an associated file set that includes a file with the

class name that is desired. Step 508 tests whether such a class server has been found. If not, then step 510 returns an appropriate error message and the procedure ends. However, if an appropriate class server is found, then in step 512 the execution code corresponding to the class name is requested from the found class server.

It should be appreciated that step 512 may be a recursive step. That is, when the execution code is requested from the found class server, it may be that this found class server does not have access to the class but may need to call the naming service itself in order to find an appropriate class server. This situation may occur if a class is moved from one class server to another. Once the execution code has been found and read from the appropriate file, then in step 514 the resulting bytes are passed back to the NCL within the Java client. After this step the procedure ends.

The present invention as described above employs various process steps involving data stored in computer systems. These steps are those requiring physical manipulation of physical quantities. Usually, though not necessarily, these quantities take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared, and otherwise manipulated. It is sometimes convenient, principally for reasons of common usage, to refer to these signals as bits, values, elements, variables, characters, data structures, or the like. It should be remembered, however, that all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities.

Further, the manipulations performed are often referred to in terms such as identifying, running, or comparing. In any of the operations described herein that form part of the present invention these operations are machine operations. Useful machines for performing the operations of the present invention include general purpose digital computers or other similar devices. In all cases, there should be borne in mind the distinction between the method of operations in operating a computer and the method of computation itself. The present invention relates to method step for operating a computer in processing electrical or other physical signals to generate other desired physical signals.

The present invention also relates to an apparatus for performing these operations. This apparatus may be specially constructed for the required purposes, or it may be a general purpose computer selectively activated or reconfigured by a computer program stored in the computer. The processes presented herein are not inherently related to any particular computer or other apparatus. In particular, various general purpose machines may be used with programs written in accordance with the teachings herein, or it may be more convenient to construct a more specialized apparatus to perform the required method steps. The required structure for a variety of these machines will appear from the

description given above.

In addition, the present invention further relates to computer readable media that include program instructions for performing various computer-implemented operations. The media and program instructions may be those specially designed and constructed for the purposes of the present invention, or they may be of the kind well known and available to those having skill in the computer software arts. Examples of computer-readable media include, but are not limited to, magnetic media such as hard disks, floppy disks, and magnetic tape; optical media such as CD-ROM disks; magneto-optical media such as floptical disks; and hardware devices that are specially configured to store and perform program instructions, such as read-only memory devices (ROM) and random access memory (RAM). Examples of program instructions include both machine code, such as produced by a compiler, and files containing higher level code that may be executed by the computer using an interpreter.

Figure 6 illustrates a typical computer system in accordance with the present invention. The computer system 100 includes any number of processors 102 (also referred to as central processing units, or CPUs) that are coupled to storage devices including primary storage 106 (typically a random access memory, or RAM), primary storage 104 (typically a read only memory, or ROM). As is well known in the art, primary storage 104 acts to transfer data and instructions uni-directionally to the CPU and primary storage 106 is used typically to transfer data and instructions in a bi-directional manner. Both of these primary storage devices may include any suitable of the computer-readable media described above. A mass storage device 108 is also coupled bi-directionally to CPU 102 and provides additional data storage capacity and may include any of the computer-readable media described above. The mass storage device 108 may be used to store programs, data and the like and is typically a secondary storage medium such as a hard disk that is slower than primary storage. It will be appreciated that the information retained within the mass storage device 108, may, in appropriate cases, be incorporated in standard fashion as part of primary storage 106 as virtual memory. A specific mass storage device such as a CD-ROM 114 may also pass data uni-directionally to the CPU.

CPU 102 is also coupled to an interface 110 that includes one or more input/output devices such as such as video monitors, track balls, mice, keyboards, microphones, touch-sensitive displays, transducer card readers, magnetic or paper tape readers, tablets, styluses, voice or handwriting recognizers, or other well-known input devices such as, of course, other computers. Finally, CPU 102 optionally may be coupled to a computer or telecommunications network using a network connection as shown generally at 112. With such a network connection, it is contemplated that the CPU might receive information from the network, or might output in-

formation to the network in the course of performing the above-described method steps. The above-described devices and materials will be familiar to those of skill in the computer hardware and software arts.

Although the foregoing invention has been described in some detail for purposes of clarity of understanding, it will be apparent that certain changes and modifications may be practiced within the scope of the appended claims. For instance, the communication mechanism used between the client and class server may be any suitable object request broker. Also, the naming service may be any module capable of identifying the location of a class name within a distributed object system. And the naming service may be part of an object request broker, or may be a separate module. In addition, although the classes have been described as being stored on computer files, they may be present within a computer system on any computer-readable media. And the present invention is capable of loading any appropriate portion of executable code, and not necessarily in units of classes. And although the above examples describe applet execution code as being in one form programs for the Java programming environment, it will be appreciated by those of skill in the art that the term applet execution code refers to any suitable information that may be downloaded in a manner transparent to a client and then executed by that client. Also, although the ORB binding and network class loader have been described as two separate modules, it is contemplated that they may form one unit that has the functionality to allow a Java client to communicate with an ORB and to download Java classes. Therefore, the described embodiments should be taken as illustrative and not restrictive, and the invention should not be limited to the details given herein but should be defined by the following claims and their full scope of equivalents.

Claims

1. In a distributed object computing system having clients, applet servers and an object request broker arranged to facilitate communication between said clients and said applet servers, a computer-implemented method of acquiring applet execution code within said distributed object computing system, comprising the steps of:

querying said object request broker by a client to determine a first applet server to obtain said applet execution code;

requesting a portion of said applet execution code from said determined first applet server with said object request broker;

retrieving at least said portion of said applet execution code with said first applet server; and

returning said portion of said applet execution code retrieved by said first applet server to said client with said object request broker.

2. A method as recited in claim 1 wherein said client incorporates applet software and said method further comprises the steps of:

loading ORB binding software into said client to enable said client to pass requests for said applet execution code to said object request broker; and

loading network class loader software into said client to enable said client to load and resolve portions of said applet execution code that are returned to said client from said first applet server.

3. A method as recited in any of claims 1-2 wherein said step of querying said object request broker includes querying a naming service of said distributed object computing system.

4. A method as recited in claim 3 wherein said step of retrieving said portion of said applet execution code includes the sub-steps of:

determining whether said portion of said applet execution code is within a file set associated with said first applet server;

reading a first file to retrieve said portion of said applet execution code when it is determined that said portion of said applet execution code is within a file set of said first applet server; and

querying said naming service with said first applet server to determine a second applet server within said distributed object computing system that is associated with said portion of said applet execution code when it is determined that said portion of said applet execution code is not within a file set of said first applet server.

5. A method as recited in claim 4 wherein said step of returning said portion of said applet execution code is performed by said second applet server first returning said portion of said applet execution code to said first applet server.

6. A method as recited in claim 4 wherein said step of returning said portion of said applet execution code is performed by said second applet server returning said portion of said applet execution code directly to said client.

7. A method as recited in any of claims 1-6 wherein

said portion of said applet execution code corresponds to a Java class.

- 8. A method as recited in any of claims 1-7 further comprising the steps of:

- determining whether said portion of said applet execution code returned to said client by said applet server contains any unresolved references to said applet execution code; and

- requesting additional applet execution code corresponding to said unresolved reference from said first applet server through said object request broker when it is determined that said portion of said applet execution code contains an unresolved reference.

- 9. In a distributed object computing system having clients, applet servers and an object request broker arranged to facilitate communication between said clients and said applet servers, a computer-implemented method of acquiring applet execution code within said distributed object computing system comprising the steps of:

- querying a naming service of said distributed object computing system by a client to determine a first applet server to obtain said applet execution code;

- requesting a portion of said applet execution code from said determined first applet server with said object request broker;

- retrieving at least said portion of said applet execution code with said first applet server; and

- returning said portion of said applet execution code retrieved by said first applet server to said client with said object request broker.

- 10. A method as recited in claim 9 wherein said step of retrieving said portion of said applet execution code includes the sub-steps of:

- determining whether said portion of said applet execution code is within a file set associated with said first applet server;

- reading a first file to retrieve said portion of said applet execution code when it is determined that said portion of said applet execution code is within a file set of said first applet server; and

- querying said naming service with said first applet server to determine a second applet server within said distributed object computing system

that is associated with said portion of said applet execution code when it is determined that said portion of said applet execution code is not within a file set of said first applet server.

- 11. A method as recited in claim 10 wherein said step of returning said portion of said applet execution code is performed by said second applet server first returning said portion of said applet execution code to said first applet server.

- 12. A method as recited in claim 10 wherein said step of returning said portion of said applet execution code is performed by said second applet server returning said portion of said applet execution code directly to said client.

- 13. A method as recited in any of claims 9-12 wherein said portion of said applet execution code corresponds to a Java class.

- 14. In a distributed object computing system having clients, applet servers and an object request broker arranged to facilitate communication between said clients and said applet servers, a computer-implemented method of acquiring applet execution code within said distributed object computing system comprising the steps of:

- querying said object request broker by a client to determine a first applet server to obtain said applet execution code;

- requesting a portion of said applet execution code from said determined first applet server with said object request broker;

- retrieving at least said portion of said applet execution code with said first applet server; and

- returning said portion of said applet execution code retrieved by said first applet server to said client with said object request broker;

- determining whether said portion of said applet execution code returned to said client by said applet server contains any unresolved references to said applet execution code; and

- requesting additional applet execution code corresponding to said unresolved reference from said first applet server through said object request broker when it is determined that said portion of said applet execution code contains an unresolved reference.

- 15. A computer apparatus for use in acquiring applet execution code within a distributed object computing system

ing system having clients and applet servers, said computer apparatus comprising:

- a processing unit; 5
- an input/output device coupled to said processing unit;
- a storage device in communication with said processing unit; 10
- an object request broker arranged to facilitate communication between said clients and said applet servers, said object request broker being further arranged to receive a request for applet 15 execution code from a client enabled to receive said applet execution code; and
- a first applet server being arranged to retrieve said applet execution code in response to said request from said client and to return said applet execution code to said client. 20

16. A computer apparatus as recited in claim 15 wherein said object request broker is associated with a naming service arranged to receive a request from said client to identify said first applet server associated with said applet execution code. 25

17. A computer apparatus as recited in claim 16 wherein said first applet server is arranged to query said naming service to determine a second applet server to retrieve said applet execution code. 30

18. A computer apparatus as recited in any of claims 15-17 further comprising: 35

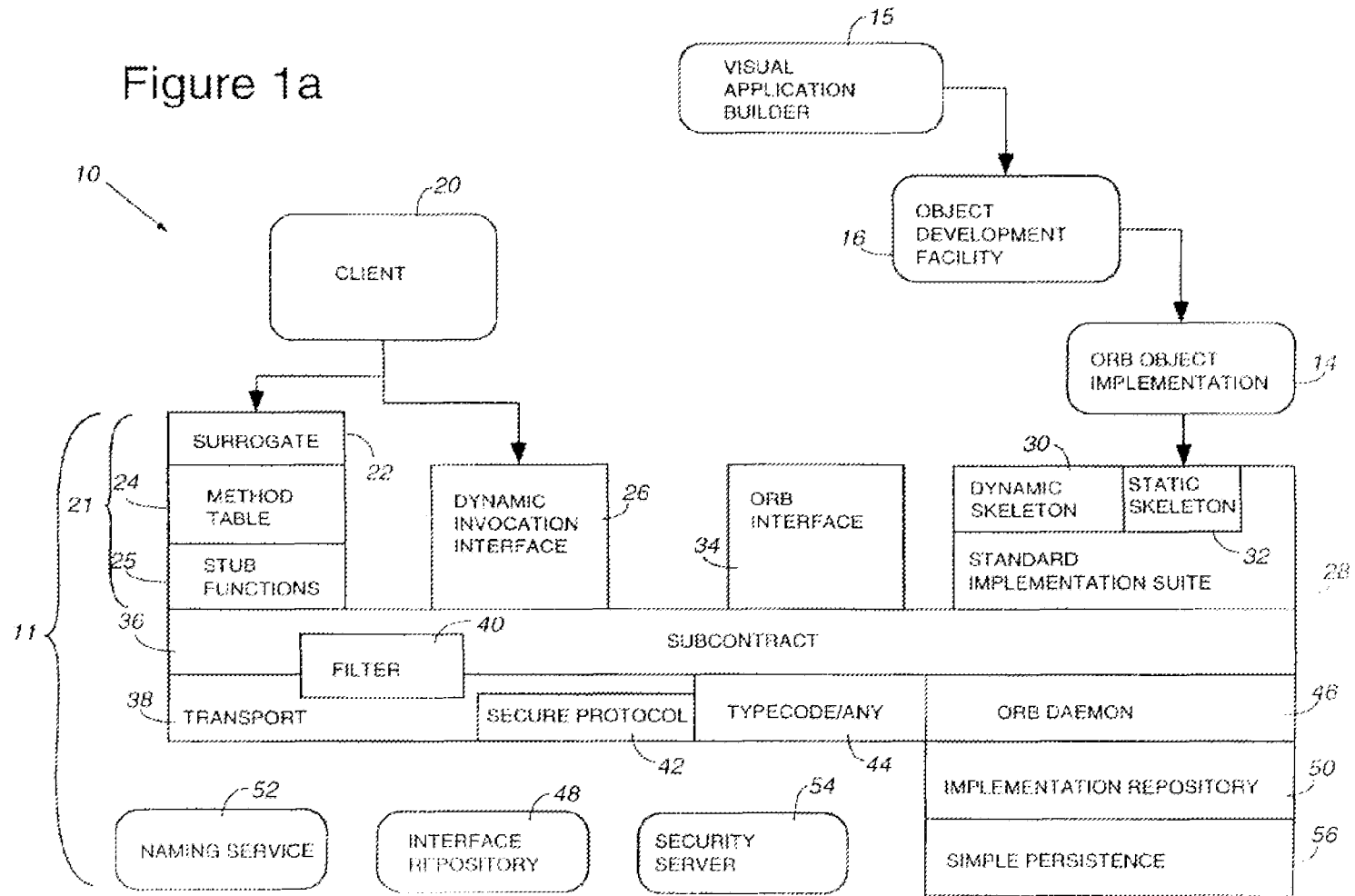
- a mass storage unit in communication with said central processing unit, said mass storage unit including files containing said applet execution code, wherein said first applet server is further arranged to retrieve said applet execution code from said files. 40

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Figure 1a



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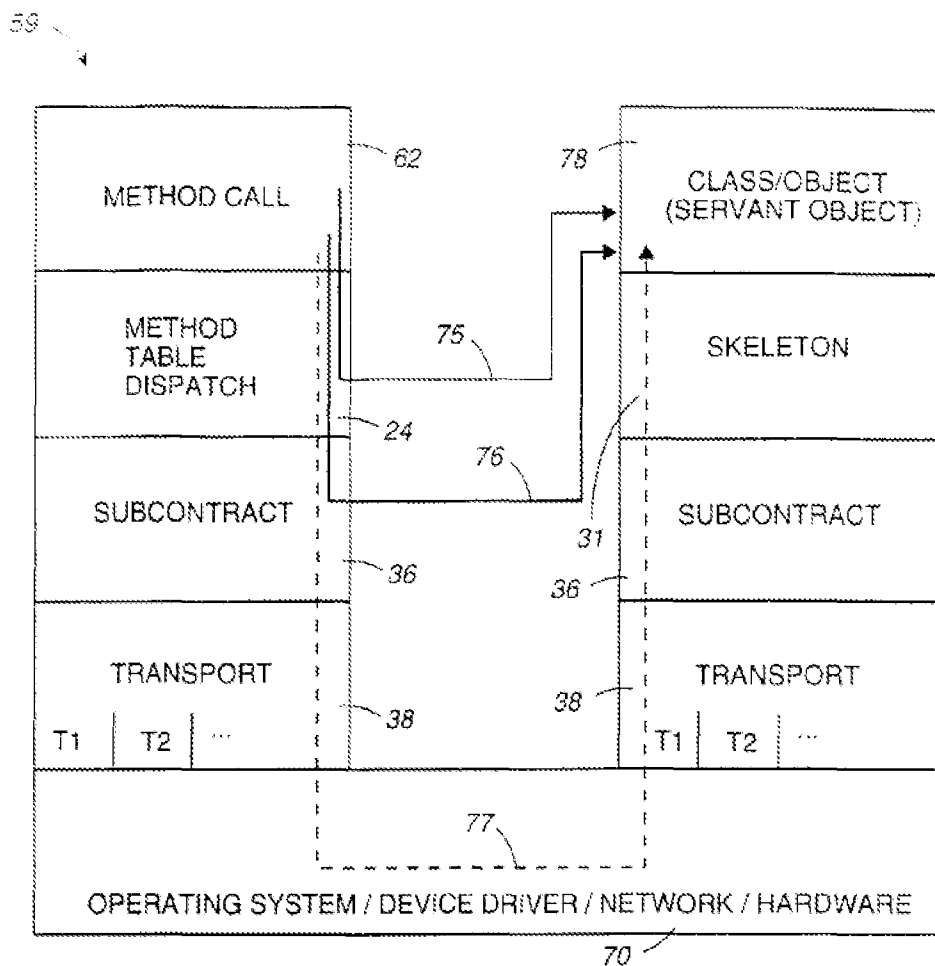


Figure 1b

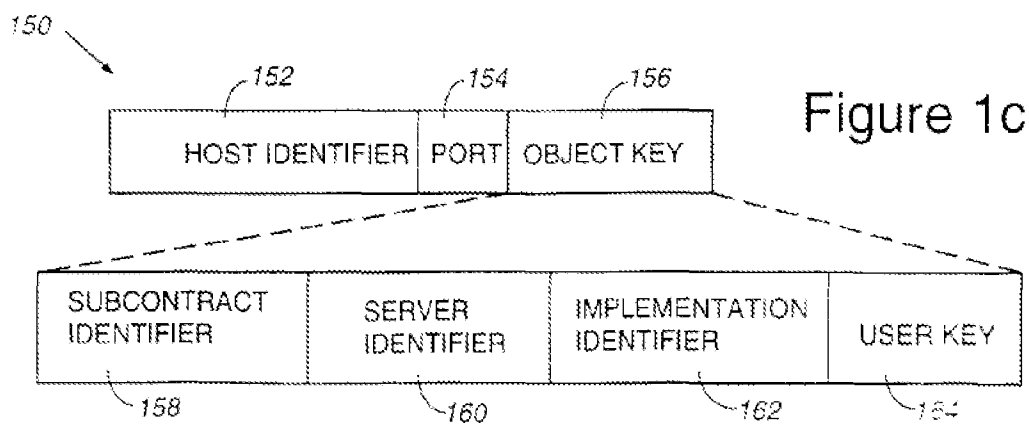


Figure 1c

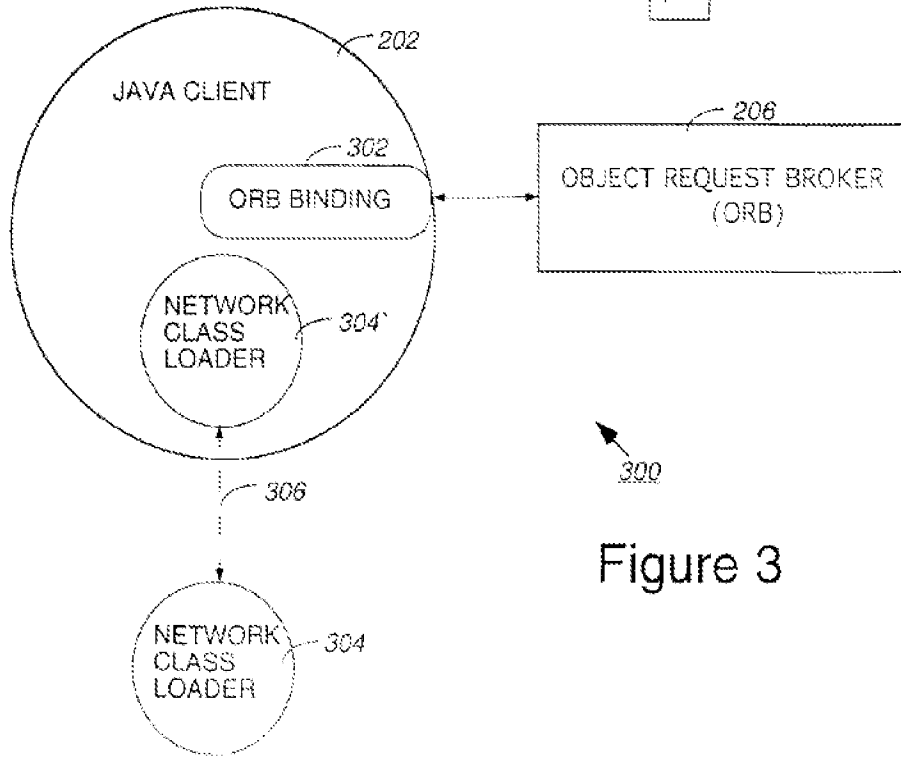
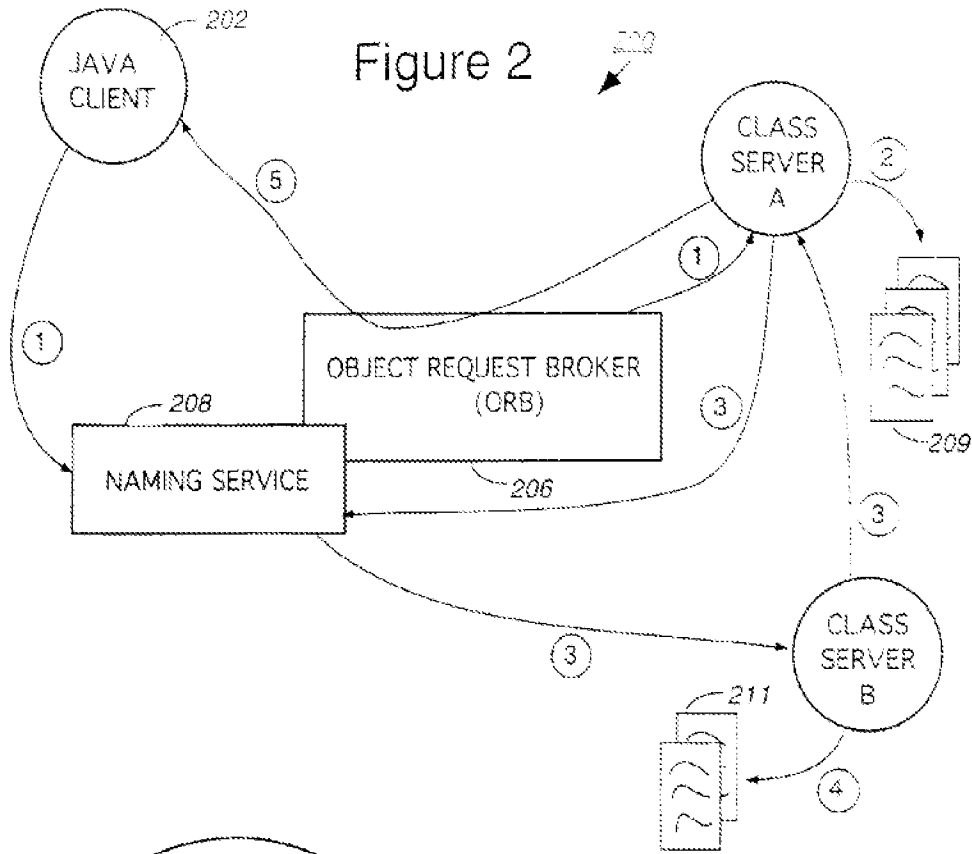
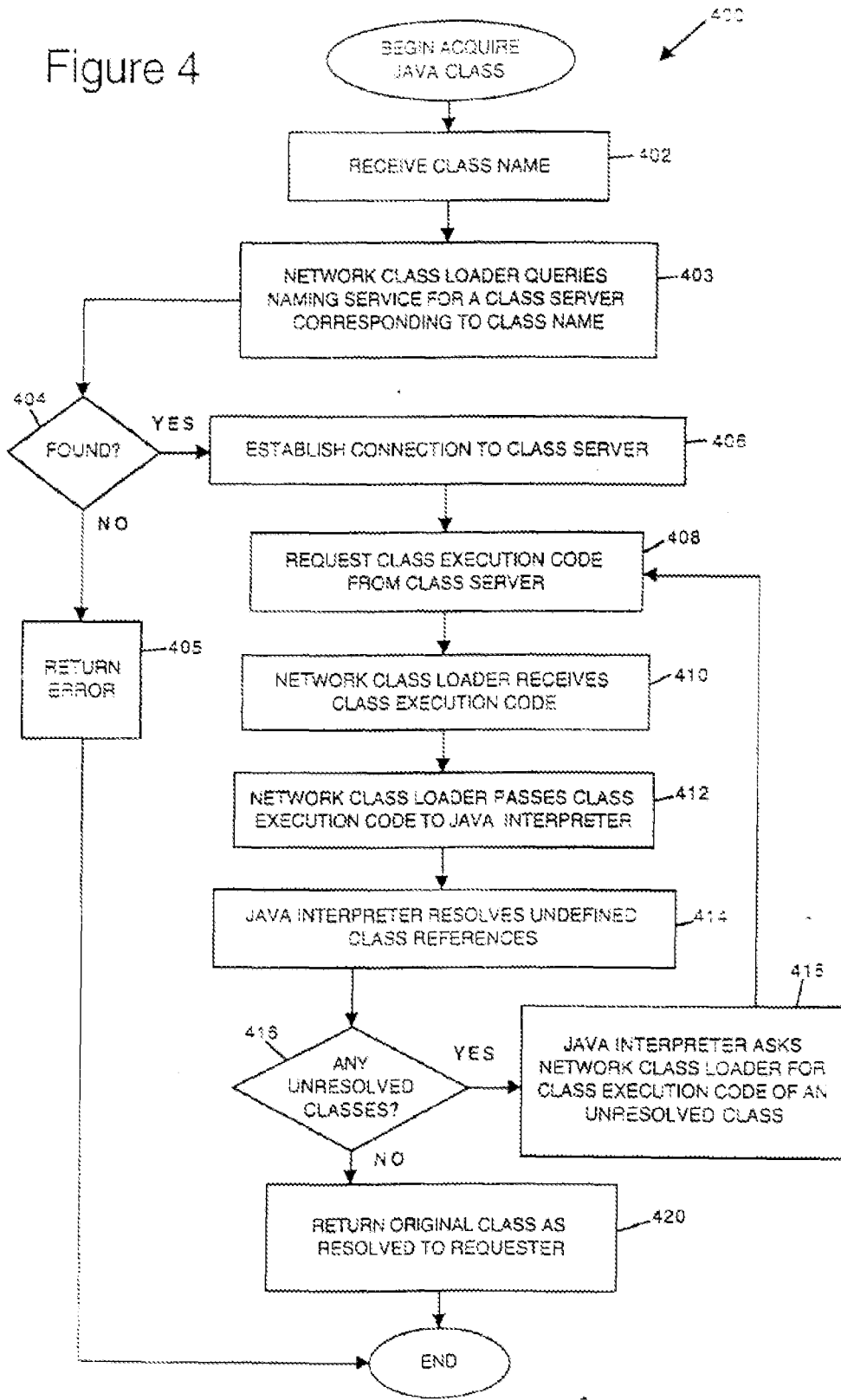


Figure 4



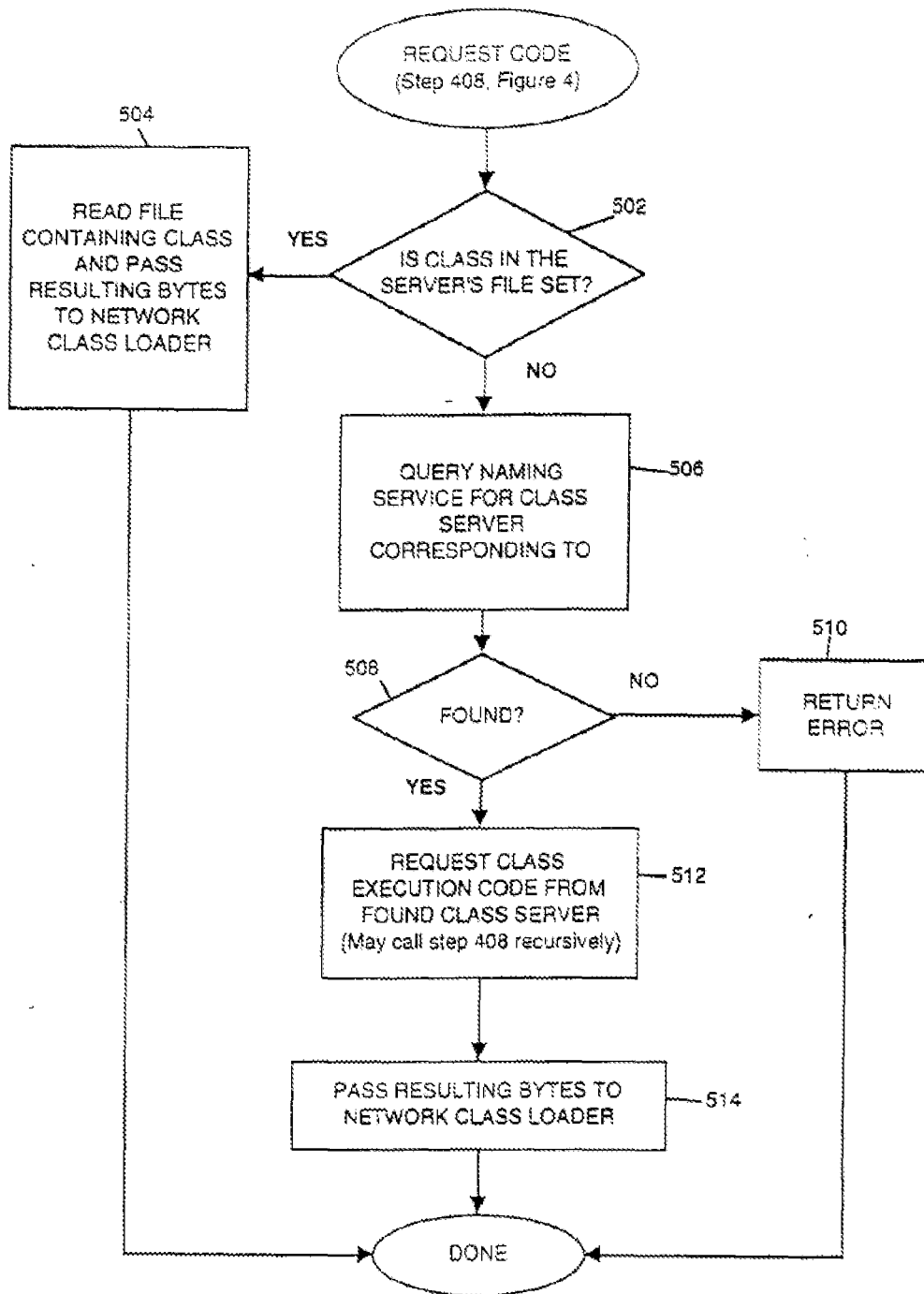


Figure 5

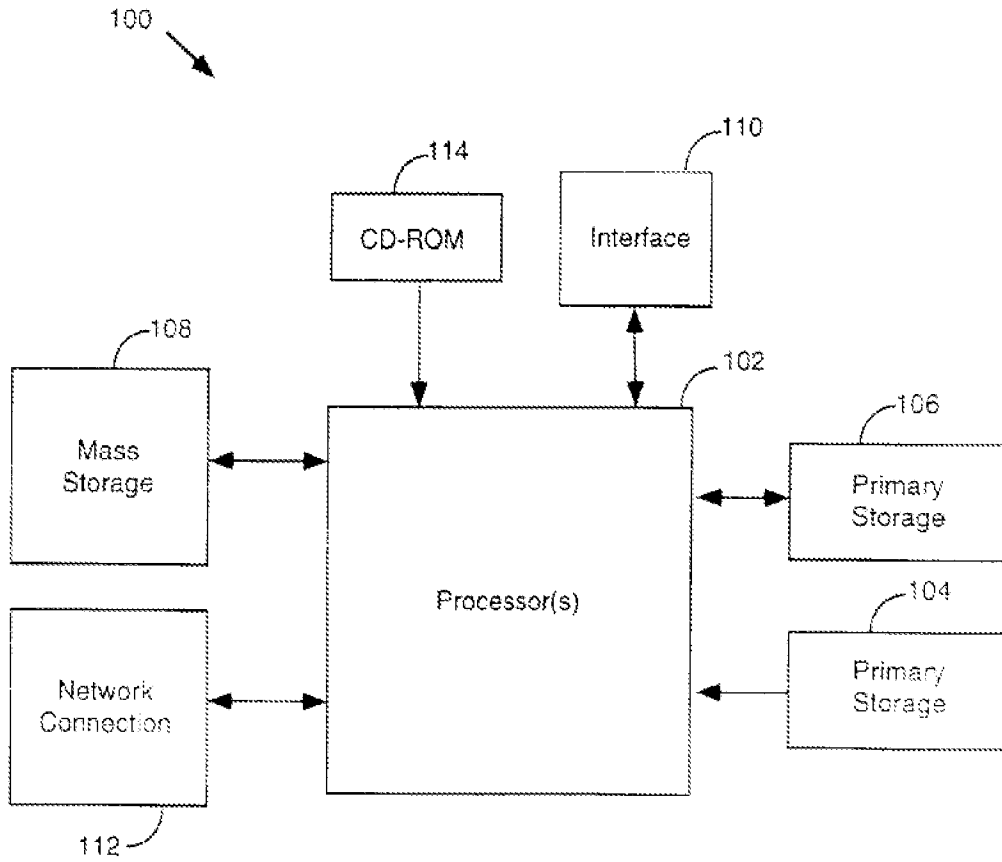


Figure 6

Electronic Acknowledgement Receipt

EFS ID:	16130129
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon
Filer Authorized By:	
Attorney Docket Number:	6743-00105
Receipt Date:	25-JUN-2013
Filing Date:	
Time Stamp:	13:28:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	16132986
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon
Filer Authorized By:	
Attorney Docket Number:	6743-00105
Receipt Date:	25-JUN-2013
Filing Date:	
Time Stamp:	13:35:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	226_20111212_PACER_48_Hogan_Decl-Exh_P.pdf	451171 bd08af788fa948d63d75a708ca609ce0f9b2d789	no	3

Warnings:

Information:

Juniper Ex. 1004-p. 133

Juniper v Implicit

2	Non Patent Literature	227_20111212_PACER_48_Hogan_Decl-Exh_Q.pdf	1706228 0b50222e1fa140955dd907d739a5004b4da0ac18	no	17
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Information:					
3	Non Patent Literature	228_20111212_PACER_48_Hogan_Decl-Exh_S.pdf	1100480 557cb8407dcd0a6b7f6345c0e69a6f7909989ae8d	no	9
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Information:					
4	Non Patent Literature	229_20111212_PACER_48_Hogan_Decl-Exh-T-1.pdf	3321374 648744c64683386f69803e429d41e92754791ac8	no	22
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5	Non Patent Literature	230_20111212_PACER_48_Hogan_Decl-Exh_T-2.pdf	5189871 adfb82b0ae13390c54fee460102dbbac9775961d8	no	21
Warnings:					
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6	Non Patent Literature	231_20111212_PACER_48_Hogan_Decl-Exh_T-3.pdf	5268438 c2fa50e99fe747b90fa976726430a3d21e64ab49	no	23
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7	Non Patent Literature	232_20111212_PACER_48_Hogan_Decl-Exh_T-4.pdf	4155708 cf8b635fd41d889994d4ead66ecdcdc19692e2dc	no	28
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8	Non Patent Literature	233_20111212_PACER_48_Hogan_Decl-Exh_U.pdf	2342329 84ecb172abb11196c4c48c8e0bf17240484e5baa	no	9
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9	Non Patent Literature	234_20111212_PACER_48_Hogan_Decl-Exh_V.pdf	3278230 c704344de0494f2b8b1f82a674200b9de0dcbc8f	no	4
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10	Non Patent Literature	235_20111212_PACER_48_Hogan_Decl-Exh_W.pdf	2368145 2014247b903a79d8d747fff18c8c9ea1a484317a	no	17
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11	Non Patent Literature	236_20111212_PACER_48_Hogan_Decl-Exh_X.pdf	1425822 97e1e55ee8c64a803274ea666a0611dfffa4e1e	no	9
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12	Non Patent Literature	237_20111212_PACER_48_Hogan_Decl-Exh_Y-1.pdf	2191395 d442925657fefbe49292e58b8ca7fe4f9c0d065b	no	44
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13	Non Patent Literature	238_20111212_PACER_48_Hogan_Decl-Exh_Y-2.pdf	5069508 e60558700d6823e9273c661ef46926b4f7af223c	no	55
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14	Non Patent Literature	239_20111212_PACER_48_Hogan_Decl-Exh_Y-3.pdf	4444915 91007339ad61c9d2e6978a7c414c6f4a0ed1448b	no	44
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15	Non Patent Literature	240_20111212_PACER_48_Hogan_Decl-Exh_Y-4.pdf	3164316 bd24dfc0621b11e6052bb4ba93808c61c06b5413	no	31
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16	Non Patent Literature	241_20111212_PACER_48_Hogan_Decl-Exh_Z.pdf	6823523 8434ec4ff5f58f2709fe9252ae800a434cc0e67d	no	17
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17	Non Patent Literature	242_20111219_PACER_50_Hosie_Decl_iso_Pltfs_Reply_Claim_Construction_Brief.pdf	438917 0cda89635fb0adfd37fe048d0f109c5e81e889c4	no	3
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18	Non Patent Literature	243_20111219_PACER_50_Hosie_Decl_iso_Pltfs_Reply_Claim_Construction_Brief-Exh-P.pdf	34413 85ef21fa9c59c0655f94f36d332207fa70f74004	no	2
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19	Non Patent Literature	244_20120110_Amd_Disclosure_of_Asserted_Claims_and_Infringement_Contentions.pdf	2277192 7eb9563ef99ace928a494ddb46febdc0478b0895	no	12
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20	Non Patent Literature	245_20120210_Juniper_Supplementa_PICs.pdf	5588835 dd6e2cf88d42829267c48bc90e4cd86537dfbdb	no	29
Warnings:					
Information:					
21	Non Patent Literature	246_20120210_JNI_Supp_PIC_Exhibit_A1.pdf	6504600 d75dbdabb73435a86c3065f4593211bcd0047d07	no	27
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22	Non Patent Literature	247_20120210_JNI_Supp_PIC_Exhibit_A2.pdf	9029323 1b6af4ec1818275b715616d326910ce52a488c81	no	41
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23	Non Patent Literature	248_20120210_JNI_Supp_PIC_Exhibit_A3.pdf	9084794 0fc8de8959271d584ef35d30dca3bbb3430cb50c	no	38
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Information:					
24	Non Patent Literature	249_20120210_JNI_Supp_PIC_Exhibit_A4.pdf	8465293 45a25399aa5e9196d8bb93041eb0ae9c448f30c	no	45
Warnings:					
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25	Non Patent Literature	250_20120210_JNI_Supp_PIC_Exhibit_B-IC_JUNIPER.pdf	6929730 68a1038f0ef6ee33e6604fea12db773f0f3f31f2	no	18
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26	Non Patent Literature	251_20120229_Amd_2-29-12_Disclosure_of_Asserted_Claims_and_ICs.pdf	1889288 14d9d807624c5bdfa85dc50733ad049aa67d79b9	no	11
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27	Non Patent Literature	252_20120406_Amd_4-6-12_Disclosure_of_Asserted_Claims_and_ICs.pdf	1987631 4c6837f35b6abae522d90e79b3b154821ba7c8d	no	11
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28	Non Patent Literature	253_20120409_Amd_per_court_order_4-9-12_Disclosure_of_Asserted_Claims_and_ICs.pdf	3454839 e08d62bf0dfdadbddea3cc80edf98686971454e4	no	17
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29	Non Patent Literature	254_JNInvalidityReport0911Final.pdf	884906 0f5dd3714a699c759e8d6614b391d8dd4f1f58fb	no	91
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30	Non Patent Literature	255_20121109MSJonInvalidity.pdf	417895 9b83a054fd564a64b60462d1c8b2c1cf5167e9f6	no	32
Warnings:					
Information:					
31	Non Patent Literature	256_20121109CalvertEx21673.pdf	1521458 54f605d53a634a1d8c6596bd9aea75e0c24984eb	no	244
Warnings:					
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32	Non Patent Literature	257_20121109CalvertEx31674.pdf	318422 0e3c3a4a59fc60e3ff265f8db3950ed0a2a9ef00	no	10
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33	Non Patent Literature	258_20121126OppositiontoF5aandJuniperMSJonInvalidity.pdf	305323 1cdb81793116f7733e7d69a784d2cfb6f85175c9	no	21
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34	Non Patent Literature	259_0121126ExhibitADavidAndersenTranscript.pdf	5472259 2ca6cd09097ebd882307ee894cc1e7505a74d512	no	10
Warnings:					
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35	Non Patent Literature	260_20121126ExhibitBtoHosieDeclaration.pdf	5580678 172e76e3691a042483d3b531ba084fd7aac4ef67	no	12
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36	Non Patent Literature	261_20121126ExhibitCtoHosieDeclaration.pdf	307197 043d84b6237c35075f79bb1fb13d9910facac38b9	no	3
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37	Non Patent Literature	262_20121126ExhibitDtoHosieDeclaration.pdf	8854186 82e2d0e5c7b3d246e657ffda14086847c6f22ad4	no	40
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38	Non Patent Literature	263_20121126ExhibitEtoHosie Declaration.pdf	411548 18c3be6712490ae2aeb632e8fee1d2d173571838	no	3
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39	Non Patent Literature	264_20121126ExhibitFtoHosie Declaration.pdf	112466 69d259c571ae77b878791e98629d664Aae2ee51	no	2
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40	Non Patent Literature	265_20121126ExhibitGSprint.pdf	3055716 3889b2e6eda503e8ac610bffe48245bcecf286f	no	4
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41	Non Patent Literature	266_20121126ExhibitHtoHosie Declaration.pdf	7574540 bad34485f5754a70d572b25b3491e5fc3e26b0c	no	12
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42	Non Patent Literature	267_20121126ExhibitItoHosieD eclaration.pdf	12874850 0a49ff744713715beafe8e45a5dc91b8a7fa1aba	no	18
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43	Non Patent Literature	268_20130313_ORDER_GRANT ING_DEFENDANTS_MSJ.pdf	6501559 f24c853352812bab0c4030309ceb6c9fc0489b6a	no	30
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44	Non Patent Literature	269_20130409_Notice_of_App eal_Juniper_Case.pdf	332351 7e2f7f65f0d0c47ae26e9f797b409404cd9d4a65	no	2
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45	Non Patent Literature	270_11-933022-20071031_Utili ty_Patent_Application.pdf	2015972 8425d3956b5f5f4b9822bb272fd6cb8324704a30	no	42
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46	Non Patent Literature	271_11-933022-20080219_Preli minary_Amendment.pdf	54089 c1598bdd364d18955a13a2c1ae5fd9c47600ab80	no	3
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48	Non Patent Literature	273_11-933022-20090924_Amendment.pdf	549510 005c6a8167b58e687f2856a8e3146705eccdc5f7a0	no	15
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49	Non Patent Literature	274_11-933022-20091211_Office_Action.pdf	352141 a97e1925082823bc88774bbca9bbb6bb6defb449	no	10
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50	Non Patent Literature	275_11-933022-20100129_Amendment-and-Response.pdf	282036 d84c22c9aefc8d75ebf98887b5b14601a487904	no	7
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51	Non Patent Literature	276_11-933022-20100302-Notice_of_Allowance.pdf	254479 e92112f357f328069cc0720f5c7d7c5867d003e6	no	4
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52	Non Patent Literature	277_11-933022-20100504_Issue_Notification.pdf	41169 267fba7aca670ee4c57608250b4ee8bde55627e7	no	1
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53	Non Patent Literature	278_10-636314-20030806_US_Patent_Application.pdf	1819412 34074db2a0c708442825a9e44d5da51fb6001b23	no	45
Warnings:					
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54	Non Patent Literature	279_10-636314-20080407-Office-Action.pdf	169697 2454ed82dcaa68f1017633895be8688321bc2cbf	no	6
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55	Non Patent Literature	280_10-636314-20080805-Response-to-Restriction-Requirement.pdf	194180 6219276f604251b76d94981b1a3f743f0ede078c	no	7
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Warnings:					
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57	Non Patent Literature	282_10-636314-20090403_Response_to_Office_Action.pdf	246660 bcd317a3faf1ff321a477ca25b8c457e666d8a94	no	9
Warnings:					
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58	Non Patent Literature	283_10-636314-20090504_Notice_of_Non_Compliant_Amendment.pdf	72005 7f84f0308e4d1278c261212b45618f7d5f5b332c	no	2
Warnings:					
Information:					
59	Non Patent Literature	284_10-636314-20090604_Amendment.pdf	358104 cdfa41c55134b02a1f204ff5462462baeb844df7	no	11
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60	Non Patent Literature	285_10-636314-20090612_Notice_of_Non-Compliant_Amendment.pdf	104371 c5eb2ed0fc38de39ca0ac1eac5986ad4d1ed096	no	2
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Total Files Size (in bytes):			169565477		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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New International Application Filed with the USPTO as a Receiving Office

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US006629163C1

(12) EX PARTE REEXAMINATION CERTIFICATE (7567th)

United States Patent
Balassanlan

(10) Number: US 6,629,163 C1

(45) Certificate Issued: Jun. 22, 2010

(54) METHOD AND SYSTEM FOR DEMULTIPLEXING A FIRST SEQUENCE OF PACKET COMPONENTS TO IDENTIFY SPECIFIC COMPONENTS WHEREIN SUBSEQUENT COMPONENTS ARE PROCESSED WITHOUT RE-IDENTIFYING COMPONENTS

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(75) Inventor: Edward Balassanlan, Kirkland, WA (US)

(73) Assignee: Implicit Networks, Inc., Bellevue, WA (US)

Reexamination Request:

No. 90/010,356, Dec. 18, 2008

Reexamination Certificate for:

Patent No.: 6,629,163
Issued: Sep. 30, 2003
Appl. No.: 09/474,664
Filed: Dec. 29, 1999

Certificate of Correction issued Dec. 2, 2003.

(51) Int. Cl.
G06F 13/00 (2006.01)
H04L 12/54 (2006.01)
H04L 12/56 (2006.01)

(52) U.S. Cl. 710/33; 710/1; 710/3; 710/20; 710/38; 710/51; 370/401; 370/487; 370/498; 370/535; 370/536; 370/542

(58) Field of Classification Search None
See application file for complete search history.

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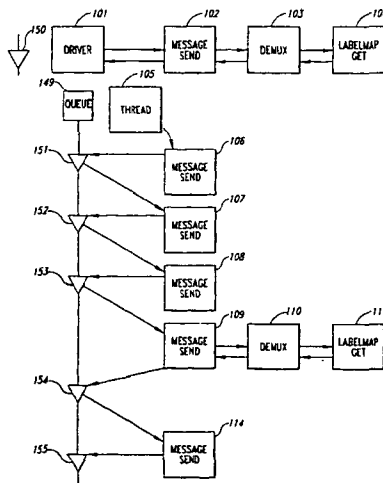
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Primary Examiner—Matthew Heneghan

(57) ABSTRACT

A method and system for demultiplexing packets of a message is provided. The demultiplexing system receives packets of a message, identifies a sequence of message handlers for processing the message, identifies state information associated with the message for each message handler, and invokes the message handlers passing the message and the associated state information. The system identifies the message handlers based on the initial data type of the message and a target data type. The identified message handlers effect the conversion of the data to the target data type through various intermediate data types.



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**EX PARTE
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 307**

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

Claims 1-5, 7, 9, 10, 12, 14-18, 20, 21, 23, 25, 26, 35-37, 39-41, 43 and 44 is determined to be patentable as amended.

Claims 6, 8, 11, 13, 19, 22, 24, 27-34, 38 and 42, dependent on an amended claim, are determined to be patentable.

New claim 45 is added and determined to be patentable.

1. A method in a computer system for processing a message having a sequence of packets, the method comprising: providing a plurality of components, each component being a software routine for converting data with an input format into data with an output format; for the first packet of the message, *dynamically identifying a non-predefined sequence of components for processing the packets of the message such that the output format of the components of the non-predefined sequence match the input format of the next component in the non-predefined sequence, wherein dynamically identifying includes selecting individual components to create the non-predefined sequence of components after the first packet is received*; and storing an indication of each of the identified components so that the *non-predefined* sequence does not need to be re-identified for subsequent packets of the message; and for each of a plurality of packets of the message in sequence, for each of a plurality of components in the identified *non-predefined* sequence, retrieving state information relating to performing the processing of the component with the previous packet of the message; performing the processing of the identified component with the packet and the retrieved state information; and storing state information relating to the processing of the component with packet for use when processing the next packet of the message.
2. The method of claim 1 wherein the storing of an indication of each of the *dynamically* identified components includes storing a key for use in retrieving state information relating to the message.
3. The method of claim 1 wherein a second component of the *non-predefined* sequence of components that are *dynamically* identified is identified after the processing of the first packet by a first component is performed.
4. The method of claim 1 wherein the packet may be transformed by each component of an identified *non-predefined* sequence.

- 2
5. The method of claim 1 wherein the identified *non-predefined* sequence of components for two messages are different.
7. The method of claim 6 wherein the identified *non-predefined* sequence of components for a message are executed by the thread for the message.
9. The method of claim 1 wherein the performing of the processing of the component includes deferring performing of the next component in the identified *non-predefined* sequence until multiple packets are processed by the component.
10. The method of claim 1 wherein the *dynamically* identifying of a *non-predefined* sequence of components includes deferring identification of the next component of the *non-predefined* sequence until processing of the last component identified so far in the *non-predefined* sequence is performed.
12. The method of claim 1 wherein an output format of a component in the identified *non-predefined* sequence for a message matches an input format of the next component in the identified *non-identified* sequence for the message.
14. The method of claim 1 wherein a plurality of *non-predefined* sequences of components are *dynamically* identified for a message.
15. A method in a computer system for demultiplexing packets of messages, the method comprising: *dynamically* identifying a *non-predefined* sequence of components for processing each message based on the first packet of the message so that subsequent packets of the message can be processed without re-identifying the components, wherein different *non-predefined* sequences of components can be identified for different messages, each component being a software routine, and wherein *dynamically identifying includes selecting individual components to create the non-predefined sequence of components*; and for each packet of each message, performing the processing of the identified *non-predefined* sequence of components of the message wherein state information generated by performing the processing of a component for a packet is available to the component when the component processes the next packet of the message.
16. The method of claim 15 wherein the identified *non-predefined* sequence of components is identified as the first packet of the message is processed.
17. The method of claim 15 wherein a packet of a message processed by a component of the identified *non-predefined* sequence for the message is available to the next component in the identified *non-predefined* sequence.
18. The method of claim 15 wherein the components of an identified *non-predefined* sequence for a message are executed within a thread [associate] *associated* with a single message.
20. The method of claim 15 wherein the performing of the processing of the component includes deferring performing of the next component in the identified *non-predefined* sequence until multiple packets are processed by the component.
21. The method of claim 15 wherein the *dynamically* identifying of a *non-predefined* sequence of components includes deferring identification of the next component of the *non-predefined* sequence until processing of the last component identified so far in the *non-predefined* sequence is complete.
23. The method of claim 15 wherein an output format of a component in the identified *non-predefined* sequence for a message matches an input format of the next component in the identified *non-predefined* sequence for the message.

25. The method of claim 15 wherein the identified *non-predefined* sequences of components are identified for a message.

26. A computer system for processing packets of messages, the [method] *system* comprising:

a plurality of components, each component having an input format and an output format;

identification means that identifies a sequence of components for each message after a packet of message has been received, such that the output format of a component in an identified sequence matches the input format of the next component in the identified sequence;

receiving means that receives packets of the messages; and

demultiplexing means that routes packets of messages to the sequence of components identified for each message for performing the processing of the components on the packets.

35. A computer-readable medium containing [instruction] *instructions* for demultiplexing packets of messages, by method comprising:

dynamically identifying a message-specific *non-predefined* sequence of components for processing the packets of each message upon receiving the first packet of the message wherein subsequent packets of the message can use the message-specific *non-predefined* sequence identified when the first packet was received, and wherein *dynamically identifying* includes selecting individual components to create the message-specific *non-predefined* sequence of components; and

for each packet of each message, invoking the identified *non-predefined* sequence of components in sequence to perform the processing of each component for the packet wherein each component saves message-specific state information so that that component can use the [save] *saved* message-specific state information when that component performs its processing on the next packet of the message.

36. The computer-readable medium of claim 35 wherein a second component of the message-specific *non-predefined* sequence is identified after the first packet is processed by a first component of the message-specific *non-predefined* sequence.

37. The computer-readable medium of claim 35 wherein a packet may be transformed by each component of an identified *non-predefined* sequence.

39. The computer-readable medium of claim 38 wherein the identified *non-predefined* sequence of components for a message is executed by the thread for the message.

40. The computer-readable medium of claim 35 wherein the performing of the processing of the component includes deferring performing of the next component in the identified *non-predefined* sequence until multiple packets are processed by the component.

41. The computer-readable medium of claim 35 wherein the *dynamically* identifying of a *non-predefined* sequence of components includes deferring identification of the next component of the *non-predefined* sequence until processing of the last component identified so far in the *non-predefined* sequence is performed.

43. The computer-readable medium of claim 35 wherein an output format of a component in the identified *non-predefined* sequence for a message matches an input format of the next component in the identified *non-predefined* sequence for the message.

44. The computer-readable medium of claim 35 wherein a plurality of *non-predefined* sequences of components are identified for a message.

45. A computer-readable medium containing instructions for demultiplexing packets of a message, by a method comprising:

identifying a message-specific sequence of components for processing the packets of each message upon receiving the first packet of the message wherein each component in the sequence is identified by using the output format of the previous component to identify a component with a compatible input format, and wherein subsequent packets of the message can use the message-specific sequence identified when the first packet was received;

for each packet of the message, invoking the identified sequence of components in sequence to perform the processing of each component for the packet, wherein each component saves message-specific state information so that that component can use the saved message-specific state information when that component performs its processing on the next packet of the message.

* * * * *

Electronic Acknowledgement Receipt

EFS ID:	16133487
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon
Filer Authorized By:	
Attorney Docket Number:	6743-00105
Receipt Date:	25-JUN-2013
Filing Date:	
Time Stamp:	13:36:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	286_10-636314-20090710_Amendment.pdf	348349 <small>2ade06bb042c04fd1bea548c3c7b742a54d99136</small>	no	11

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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Electronic Acknowledgement Receipt

EFS ID:	16130568
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon
Filer Authorized By:	
Attorney Docket Number:	6743-00105
Receipt Date:	25-JUN-2013
Filing Date:	
Time Stamp:	13:30:18
Application Type:	Utility under 35 USC 111(a)

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19	Non Patent Literature	99_Mosberger_A_Path-Based_Operating_System_Part_2.pdf	20994254 911878074592867e1a2aab764913e8c645d5b378	no	60
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50	Non Patent Literature	128_Rabiner_Apps_of_speech_recognition_in_telecommunications_1991-10.pdf	1301449 14c6c88b649df7c967ca003141058bc7f5becdec	no	10
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52	Non Patent Literature	130_Rogaway_P_Bucket_Hashing_and_its_Application.pdf	1340530 782ae4e0931a844b53fb15e35a992c8d23c81734	no	24
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53	Non Patent Literature	131_Schneier97_Remote_Auditing.pdf	137034 6a597b0464071542e176915dd6c5faebdb9ecc58	no	16
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54	Non Patent Literature	132_Tennenhouse_et_al_From_Internet_to_ActiveNet.pdf	694296 622763bf5983ae09ed4454924f8ca7d799b1c061	no	9
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55	Non Patent Literature	133_Tudor_MPEG.pdf	1337753 95de9e8edcfbc8f718fc7a8d1848157a276e41a	no	8
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57	Non Patent Literature	135_Van_der_Meer_et_al_AnApproach_for_a_4th_Generation_Messaging_System_1999.pdf	980167 69102b953221c864e96731a37bb769e70e642156	no	10
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58	Non Patent Literature	136_Van_der_Meer96_thesis_Part_1.pdf	18480742 d049c98ab62e39dd035781945262885cab6386cb	no	55
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59	Non Patent Literature	136_Van_der_Meer96_thesis_Part_2.pdf	24965983 328618d04ba87e1ac120a9d4302ae1963aa2e968	no	55
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60	Non Patent Literature	136_Van_der_Meer96_thesis_Part_3.pdf	17453367 6186c8efe2b0ad7dfe98ad50a26ad3070b94af0e	no	57
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Total Files Size (in bytes):			348890880		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	16131009
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon
Filer Authorized By:	
Attorney Docket Number:	6743-00105
Receipt Date:	25-JUN-2013
Filing Date:	
Time Stamp:	13:31:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	137_van_Renesse_et_al_Building_Adaptive_Systems_Using_Ensemble.pdf	1031191 834486bb5d0657bcda580d9bfb59228682ee21c3	no	16

Warnings:

Information:

Juniper Ex. 1004-p. 161

Juniper v Implicit

2	Non Patent Literature	138_Venkatesan_Ramkumar_Threat-Adaptive-Security-Policy.pdf	632893 84a894421e8997a9abef5cd750dadbdacc8bed68	no	7
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3	Non Patent Literature	139_Weatherall_et_al_The_Active_IP_option.pdf	647831 a7b3c4862d1f0be15102b6213c69d923f8eafeff	no	8
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4	Non Patent Literature	140_Welch_Data_Compression.pdf	6610422 15957c2a8dc85e5066e393da9ab70883876521ea	no	12
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5	Non Patent Literature	141_Zeletin_Pfeifer98_Applying_Location-Aware.pdf	496137 424fa8924c05ec2b537f16670a539c9cc179b8cb	no	14
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6	Non Patent Literature	142_Zell_thesis-Selection_of_Converter_Chains_1998-02-12.pdf	1013927 164712f4747ff5febe16ac025f555c8461adab65	no	124
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7	Non Patent Literature	143_20080204_Complaint.pdf	1149938 225116e9b462300f667260575d9bc5444dd947e6	no	33
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8	Non Patent Literature	144_20080826_PACER_72_NVIA_Answer_Affirm_Defs_Counterclaim.pdf	1194515 0914c2cb7248bec1bedde88446917c13577023fa	no	8
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10	Non Patent Literature	146_20080827_PACER_75_AMD_Answer_Affirm_Defs.pdf	380974 88f96e5651a88ce13240f3b5713abe3789ddb3ab	no	10
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12	Non Patent Literature	148_20080827_PACER_80_Intel_Answer_Affirm_Defs_Countercclaims.pdf	473224 d4ab0d26019221cf0da220ee06a7ffa91b823e7b	no	16
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14	Non Patent Literature	150_20080915_PACER_84_Implicit_Reply_to_NVIDIA_Counterclaims.pdf	625539 49c3039afac8b3131a4facb4171808c8bb1141	no	3
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16	Non Patent Literature	152_20080916_PACER_86_Implicit_Reply_to_RealNetworks_Counterclaims.pdf	795072 f407a7fd131907c32a0797a9ddb94c9bfd02814a	no	4
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56	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_9.pdf	25231318 4fab950d7c14f208b855ac468147e9a8f182516a	no	64
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Total Files Size (in bytes):			403544451		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	16131611
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon
Filer Authorized By:	
Attorney Docket Number:	6743-00105
Receipt Date:	25-JUN-2013
Filing Date:	
Time Stamp:	13:33:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_14.pdf	25708446 <small>1241fe3ec9db3bb36109565a4048d31853433418</small>	no	48

Warnings:

Information:

Juniper Ex. 1004-p. 169

Juniper v Implicit

2	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_15.pdf	25818953 d7b4a344a60ecda0b49bb8733952c1b801783a01	no	46
Warnings:					
Information:					
3	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_16.pdf	25524137 bb4cae414e61f8780dc46842ab174bc65d87e50f	no	46
Warnings:					
Information:					
4	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_17.pdf	25655055 daf37b410825a75a0a8405b0b634f4c3d271e880	no	86
Warnings:					
Information:					
5	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_18.pdf	25751325 94511353c4b23fe425b50a30cb95842ce762d288	no	57
Warnings:					
Information:					
6	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_19.pdf	25799094 8b4201f41a19932019bd39d089c4dc416473a4d1	no	56
Warnings:					
Information:					
7	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_20.pdf	25220756 fcc45d1b9d6d1813cd3aa073d07deba9f154bd8	no	54
Warnings:					
Information:					
8	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_21.pdf	25614952 6d0cef00dbbd68cfa6f44d75b01d8ba0237e9f04	no	56
Warnings:					
Information:					
9	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_22.pdf	25185906 701b40c1312cde435cf37c6a64fd3cbe6a218b3f	no	62
Warnings:					
Information:					
10	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_23.pdf	25603062 57cc3c56216487500e98aed6d3738689a9aeba9b	no	58
Warnings:					
Information:					

11	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_24.pdf	25753000 bac9884808c5295d198dd2a2a707810361fcb44	no	51
Warnings:					
Information:					
12	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_25.pdf	25338706 fcc2eccbedff5d46e0bda3521e3d4d40ac4f7099	no	51
Warnings:					
Information:					
13	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_26.pdf	25698229 c63057d97a874c0950bc5ed7f7a44efd89c0e7db	no	48
Warnings:					
Information:					
14	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_27.pdf	25358107 5c492545259b8245f87a0c699c4d491a6333fa9a	no	47
Warnings:					
Information:					
15	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_28.pdf	25340559 d7d218726a6087593cd0b49d245f1072158dd343	no	47
Warnings:					
Information:					
16	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_29.pdf	25323814 96bf985512f96c603336e99d9f69fad62a9d7dae	no	46
Warnings:					
Information:					
17	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_30.pdf	24219756 f5011f04b1ce38894ebf76b44bca43819aa9c07f	no	45
Warnings:					
Information:					
18	Non Patent Literature	184_20110722_F5_Inv_Contentions_Exhibit_A_Part_31.pdf	18303655 b3990e3a989046crlaffbe851220e21391b03bbc	no	46
Warnings:					
Information:					
19	Non Patent Literature	185_20110722_F5_Inv_Contentions_Exhibit_B_Prior_Art_References.pdf	134296 aee5217316ad21f9c8e41222368d9ce69794428e	no	12
Warnings:					
Information:					

20	Non Patent Literature	186_20111018_PACER_57_Jt_Claim_Construction_Prehearing_Stmt_PR-4-3.pdf	1089002 d80278fb039ee2e26cf8ecc36fe703d047b3342	no	6
Warnings:					
Information:					
21	Non Patent Literature	187_20111018_PACER_57_Jt_Claim_Construction_and_Prehearing_Stmt_PR-4-3_Exh_A_Part_1.pdf	15310145 fcc0a9b1d3e459b44ffc2599cea8af27caeda7ec	no	39
Warnings:					
Information:					
22	Non Patent Literature	187_20111018_PACER_57_Jt_Claim_Construction_and_Prehearing_Stmt_PR-4-3_Exh_A_Part_2.pdf	13907004 98f4827b7f616641484ca1bc399b244c7dfb3d9	no	39
Warnings:					
Information:					
23	Non Patent Literature	188_20111128_PACER_60_F5_HP_JNI_PLAINTIFFS_OPENING_CLAIM_CONSTRUCTION_BRIEF.pdf	7236769 c9f2e4233e30b248b0e38a5b8ff8e1ff49e42e60	no	30
Warnings:					
Information:					
24	Non Patent Literature	189_20111129_PACER_62_Amd_Jt_Claim_Construction_and_Prehearing_Stmt_PR-4-3.pdf	929625 8631bf603c8e5f4ac22bed7b529f4a660a672b8c	no	5
Warnings:					
Information:					
25	Non Patent Literature	190_20111129_PACER_62_Amd_Jt_Claim_Construction_and_PrehearingStmt_PR-4-3_Exh_A.pdf	20617224 ce7ddc705fc9d054fd0903899e351963a4fc53b6	no	53
Warnings:					
Information:					
26	Non Patent Literature	191_20111212_PACER_63_F5_Defendants_Claim_Construction_Brief.pdf	6233832 4fbdad2bc76a15a30589c82694e1912202551e27	no	31
Warnings:					
Information:					
27	Non Patent Literature	192_20111219_PACER_79_F5_HP_JNI_PLAINTIFFS_REPLY_TO_DEFS_RESPONSIVE.pdf	4672679 1883b76bb5899cbcc1751958a51777fddbd9	no	20
Warnings:					
Information:					
28	Non Patent Literature	193_20120127_PACER_85_Transcript_of_Proceedings_held_on_1-17-12.pdf	190957 9a283ca114583d844682eee53a66f310d129e4b5	no	51
Warnings:					
Information:					

29	Non Patent Literature	194_20120127_PACER_86_Tra nscript_of_Proceedings_held_ on_1-18-12.pdf	250823 4e9209963f871b736002b8e01adc8c88037 5ef18	no	68
Warnings:					
Information:					
30	Non Patent Literature	195_20120127_PACER_87_Tra nscript_of_Proceedings_1-19-1 2.pdf	252581 2568c30a5cd07605cd0d20b013a2a8dcb597 f2455	no	68
Warnings:					
Information:					
31	Non Patent Literature	196_20120229_PACER_93_CLA IM_CONSTRUCTION_ORDER. pdf	2566705 4fd38de43d94d83aa99008660026e1638a9 74520	no	14
Warnings:					
Information:					
32	Non Patent Literature	197_20120815StorerInvalidityR eport.pdf	1611891 d8e91d4552cad141bb63cc805d99863ae4c 1ce0b	no	240
Warnings:					
Information:					
33	Non Patent Literature	198_F5_ValidityRebuttalReport 0910FinalNettles.pdf	1072141 048747f93cc74eb05c61c0662f387bd92ac8 7336	no	67
Warnings:					
Information:					
34	Non Patent Literature	199_20130313_ORDER_GRANT ING_DEFENDANTS_MSJ.pdf	6501559 55e0ac04da381ca7fd35b3c73ef3ba14ea77 f343	no	30
Warnings:					
Information:					
35	Non Patent Literature	200_20130409_Notice_of_App eal.pdf	348645 857d55d0e1b393a89a51761adc9b9f1510 b65ec	no	2
Warnings:					
Information:					
36	Non Patent Literature	201_20100823_PACER_1_Com plaint.pdf	309075 d88987b26869db45900d859a10a079e03c ba2d36	no	8
Warnings:					
Information:					
37	Non Patent Literature	202_20101123_PACER_24_Am d_Complaint.pdf	4681432 f8cF5d15aa805b1faa15947cee7a51311888 5c35	no	21
Warnings:					
Information:					

38	Non Patent Literature	203_20110114_PACER_31_HPs_Answer_and_Counterclaims_to_1st_Amd_Complaint.pdf	258890 2fadf0f52ce8f308baa3a3c877548f755de3faed	no	32
Warnings:					
Information:					
39	Non Patent Literature	204_20110218_PACER_39_Implicits_Answer_to_HPs_Counterclaims.pdf	5752175 bfef684bdf6c277ec4b9de9c78550e8a0bb12ab	no	25
Warnings:					
Information:					
40	Non Patent Literature	205_20110510_Plaintiffs_Amd_Disclosure_of_Asserted_Claims_HP.pdf	2038227 cd9ece2abbe5c6435205e6f462e0ec2b71e3827	no	11
Warnings:					
Information:					
41	Non Patent Literature	206_20110630_HP_Invalidity_Contentions_PLR_3-3_and_3-4.pdf	271846 e3d16ba1ebc6b626ae5b2550642a4e5606983c7	no	27
Warnings:					
Information:					
42	Non Patent Literature	207_20110630_HP_Exs_A1-14_to_HP_Invalidity_Contentions.pdf	1609916 d29170795936765b314fffc7a1b935651e6fbb64	no	331
Warnings:					
Information:					
43	Non Patent Literature	208_20110630_HP_Exs_B1-21_to_HP_Invalidity_Contentions.pdf	2233824 b202674fb40430577eda6cc0534db90ad05fe4c0	no	489
Warnings:					
Information:					
44	Non Patent Literature	209_20100920_PACER_1_Original_Complaint.pdf	1247846 b233dc31be922b242e27f0f8509c724f9be747c2	no	7
Warnings:					
Information:					
45	Non Patent Literature	210_20101112_PACER_14_Junipers_Mtn_to_Dismiss_for_Failure_to_State.pdf	3613858 438dfc846efc7c13e1733ef5074b9567f99e17e3	no	11
Warnings:					
Information:					
46	Non Patent Literature	211_20101112_PACER_15_Junipers_Reqt_for_Judicial_Ntc_iso_Mtn_to_Dismiss.pdf	760861 9558f928c507ceb9772c7eb47b3e776162bbafe	no	3
Warnings:					
Information:					

47	Non Patent Literature	212_20101201_PACER_16_Plaintiffs_1st_Amd_Complaint.pdf	4062289 bbbd6f7bac672e63d19fee217eb5a4af5eb99648	no	18
Warnings:					
Information:					
48	Non Patent Literature	213_20110118_PACER_25_Junipers_Answer_and_Affirm_Defenses_to_1st_Amd_Complaint.pdf	10399545 c4092edff6e8d1faaf275496bd4e9a0033b8f37f	no	31
Warnings:					
Information:					
49	Non Patent Literature	214_20110218_PACER_30_Implicits_Answer_to_Counterclaims.pdf	5174670 630b3240aad3e25702b14aeb41a7e88d1b3ddd48	no	21
Warnings:					
Information:					
50	Non Patent Literature	215_20110523_FIRST_Disclosure_of_Asserted_Claims_and_ICs_05-23-11.pdf	486767 864062c5558990789896a4016fc7affa8bfb4d90	no	11
Warnings:					
Information:					
51	Non Patent Literature	216_20111115_Disclosure_of_Asserted_Claims_and_Infringement_Contentions.pdf	2049779 bc968e832ccf1500eaf58ff62c25e63aac1fa74a	no	11
Warnings:					
Information:					
52	Non Patent Literature	217_20111128_PACER_43_Hosie_Decl_iso_Pltfs_Opening_Claim_Construction_Brief.pdf	652905 30b1a99e01e550feb3ecde100bc44bcf5ed09920	no	4
Warnings:					
Information:					
53	Non Patent Literature	218_20111128_PACER_43_Hosie_Decl_Exh-E.pdf	127738 b047c8dc70adae669ffc794e8a79b94f532cf8c3	no	2
Warnings:					
Information:					
54	Non Patent Literature	219_20111128_PACER_43_Hosie_Decl_Exh-J.pdf	1025894 4b26012ce6215b5458679d829e2508897bf37cd1	no	3
Warnings:					
Information:					
55	Non Patent Literature	220_20111128_PACER_43_Hosie_Dec-Exh-K.pdf	1043936 8decd0402b22b79478c8dfbf5a05346adef120b	no	3
Warnings:					
Information:					

56	Non Patent Literature	221_20111128_PACER_43_Hos ie_Decl-Exhs_M-O.pdf	1572783 6436db5992c0beb58c3b21af3d2b84c3ff02 7ce8	no	9
Warnings:					
Information:					
57	Non Patent Literature	222_20111212_PACER_48_Hog an_Decl.pdf	641119 3d29341a79d354a1cb16747ba121f9c712b 8f013	no	5
Warnings:					
Information:					
58	Non Patent Literature	223_20111212_PACER_48_Hog an_Decl-Exh_B.pdf	1241082 770ed1ac6abd01fc95d45825bfd9be72ce1 2278d	no	7
Warnings:					
Information:					
59	Non Patent Literature	224_20111212_PACER_48_Hog an_Decl-Exh_F.pdf	141548 c23b3f72d73c1af8615783f7d9c7e8960b17 bd1c	no	5
Warnings:					
Information:					
60	Non Patent Literature	225_20111212_PACER_48_Hog an_Decl-Exh_N.pdf	670787 58b105a8233b15fc831a13f3e42780038e64 4e1b	no	4
Warnings:					
Information:					
Total Files Size (in bytes):			586212182		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INTERNATIONAL SEARCH REPORT

Intern. Patent Application No

PCT/US 00/33634

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H04L29/06 H04L12/56

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 5 870 479 A (DE LANGE MARTIN KLAAS ET AL) 9 February 1999 (1999-02-09) abstract column 2, line 37 -column 3, line 20 column 5, line 37 -column 6, line 13 column 6, line 24 - line 34 column 6, line 52 -column 7, line 2 claims 15,6,7,8 --- -/--	1,2,6,7, 10,22, 23,29,30 3-5,8,9, 11-21, 23-28, 31-34

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

3 September 2001

Date of mailing of the international search report

10/09/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
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Authorized officer

Lai, C

INTERNATIONAL SEARCH REPORT

Intern. Patent Application No
PCT/US 00/33634

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 568 478 A (VAN LOO JR GERRIT J ET AL) 22 October 1996 (1996-10-22) abstract column 3, line 10 -column 4, line 40 figures 1-3 -----	19-21, 31-34

INTERNATIONAL SEARCH REPORT

Information on patent family members

Intern. Patent Application No

PCT/US 00/33634

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5870479 A	09-02-1999	NL 9301841 A	16-05-1995
		AU 679798 B	10-07-1997
		AU 8059594 A	22-05-1995
		DE 69419427 D	12-08-1999
		DE 69419427 T	05-01-2000
		DK 726001 T	28-02-2000
		EP 0726001 A	14-08-1996
		GR 3031238 T	31-12-1999
		JP 8510889 T	12-11-1996
		AT 182043 T	15-07-1999
		CA 2173252 A	04-05-1995
		CZ 9601104 A	17-07-1996
		WO 9512264 A	04-05-1995
		ES 2135599 T	01-11-1999
US 5568478 A	22-10-1996	DE 4323471 A	19-01-1995
		EP 0634879 A	18-01-1995
		JP 7170273 A	04-07-1995

PATENT COOPERATION TREATY

PCT

REC'D 10 APR 2002

WIPO

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

8

Applicant's or agent's file reference PCT 1433-034/no	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US00/33634	International filing date (day/month/year) 12/12/2000	Priority date (day/month/year) 29/12/1999	
International Patent Classification (IPC) or national classification and IPC G06F13/00			
Applicant BECOMM CORPORATION et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 27/07/2001	Date of completion of this report 08.04.2002
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Prins, L Telephone No. +49 89 2399 7433 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US00/33634

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-24 as originally filed

Claims, No.:

17-34 as originally filed

1-16 as received on 21/03/2002 with letter of 21/03/2002

Drawings, sheets:

1/16-16/16 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US00/33634

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

see separate sheet

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims
	No:	Claims 1-4,7,9-12,15
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-4,7,9-12,15
Industrial applicability (IA)	Yes:	Claims 1-4,7,9-12,15
	No:	Claims

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US00/33634

1. Reference is made to the following document(s):

D1: US-A-5 870 479 (DE LANGE MARTIN KLAAS ET AL) 9 February 1999
(1999-02-09)

Re Item V

2. This report has been established as if the amendments consisting of claims 5, 6, 8, 13, 14 and 16 had not been made, since they have been considered to go beyond the disclosure as filed (Article 19(2) and Rule 70.2(c) PCT).
 - 2.1 No basis could be found in the original application documents for the "same sub-sequence of routines" by which two messages may be processed according to amended claims 5 and 13.
 - 2.2 No basis could be found in the original application documents for the "multiple second routines" or "multiple routines to next process a packet" according to amended claims 6 and 14. These wordings indicate that the output of a first routine is serves as input for two separate subsequent routines which is not disclosed in the original application documents.
 - 2.3 No basis could be found in the original application documents for the "tree of routines" according to amended claims 8 and 16.
3. The amended independent claims 1 and 9 contain the respective wordings

"identifying based on the generated information of the first routine a second routine" and the corresponding "wherein a sequence of routines is identified for processing packets of a message based on information generated by a previous routine in the sequence" in claim 1, and

"identifies a sequence ... based on information generated by a previous routine in the sequence" in claim 9,

for which also no basis could be found in the original application documents (Art.

19(2) PCT). This report has been established as if the above mentioned features are not part of the independent claims.

4. Claims 1-4,7,9-12 and 15 do not meet the requirements of Article 33(2) PCT, because the subject-matter of these claims is not new. Document D1 discloses the subject-matter of these claims as follows:
 - a) A method in a computer system for processing packets of a message (column 1, lines 3-4),
 - b) identifying which of a plurality of components is to process a received packet (column 2, lines 37-43) on the basis of an identification of the packet,
 - c) realisation of the processing in software (column 2, lines 60-65),
 - d) status information being stored in an external memory (column 4, lines 8-18, and column 6, lines 53-55),
 - e) assigning packets of the same message to the same component (column 3, lines 16-20, and column 5, lines 61-65),
 - f) performing a sequence of processing steps in order by a plurality of components (column 6, lines 20-24).

Re Item VII

3. Independent claims 1, 6, 10, 19, 22, 29, 30, and 31 are not in the two-part form in accordance with Rule 6.3(b) PCT, with those features known in combination from the prior art being placed in a preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).
4. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
5. Document D1 is considered the most relevant source of prior art. To meet the

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US00/33634

requirements of Rule 5.1(a)(ii) PCT, document D1 should have been identified in the description and the relevant background art disclosed therein should have been briefly discussed.

Re Item VIII

16. The description contains a reference to a US patent application on page 6, line 5. This reference should have been replaced by a publication number if available, so that the document can be easily retrieved (PCT Guidelines II 4-17), or else have been deleted from the description.

Application No: PCT/US00/33634

Applicant: BECOMM CORPORATION et al

Our ref: PCT1433-03481/km

Date: March 21, 2002

New Claims

1. A method in a computer system for processing packets of a plurality of messages, the method comprising:
providing a plurality of routines for processing messages; and
for packets of a message,
identifying a first routine of the plurality of the routines for processing the packet;
executing the first routine to process the packet using state information generated when the first routine processed a previous packet of the message, the processing including generating new state information for the message and generating output information;
identifying based on the generated information of the first routine a second routine of the plurality of the routines for processing the packet; and
executing the second routine to process the packet using state information generated when the second routine processed a previous packet of the message and using output information generated when the first routine processed the previous packet, the processing including generating new state information for the message and generating output information
wherein a sequence of routines is identified for processing packets of a message based on information generated by a previous routine in the sequence and wherein each identified routine processes packets of the message based on state information generated when the routine processed a previous packet of the message and based on output generated when a previous routine in the sequence processed the packet of the message.

2. The method of claim 1 wherein each routine identifies state information generated when the routine processed a previous packet of the message.
3. The method of claim 1 including storing state information generated by a routine for a plurality of messages.
4. The method of claim 1 wherein all packets of a message are processed by the same sequence of routines.
5. The method of claim 4 wherein two messages may be processed by a sub-sequence of routines that are the same.
6. The method of claim 1 wherein multiple second routines are identified for processing a packet of a message.
7. The method of claim 6 wherein each second routine processes the packet using state information generated when the second routine processed a previous packet of the message and using output information generated when the packet was processed by the first routine, the processing including generating new state information for the message and generating output information.
8. The method of claim 7 wherein the identified routines form a tree of routines.
9. A computer system for processing packets of a plurality of messages, comprising:
a plurality of routines for processing messages; and
a component that identifies a sequence of routines for processing packets of a message based on information generated by a previous routine in the sequence and wherein each identified routine processes packets of the message based on state information generated when the routine processed a previous packet of the message and based on output information generated when a previous routine in the sequence processed the packet of the message.

10. The computer system of claim 9 wherein each routine identifies state information generated when the routine processed a previous packet of the message.
11. The computer system of claim 9 wherein the component stores state information generated by a routine for a plurality of messages.
12. The computer system of claim 9 wherein all packets of a message are processed by the same sequence of routines.
13. The computer system of claim 12 wherein packets of two messages may be processed a sub-sequence of routines that are the same.
14. The computer system of claim 9 wherein multiple routines are identified to next process a packet of a message.
15. The computer system of claim 14 wherein each of the multiple routines processes the packet using state information generated when that routine processed a previous packet of the message and using output information generated when the packet was processed by a previous routine, the processing including generating new state information for the message and generating output information.
16. The computer system of claim 15 wherein the identified routines form a tree of routines.

Electronic Acknowledgement Receipt

EFS ID:	16134181
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon
Filer Authorized By:	
Attorney Docket Number:	6743-00105
Receipt Date:	25-JUN-2013
Filing Date:	
Time Stamp:	13:38:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	343_20120710_Response_to_Office_Action.pdf	2676190 18d4f2e00a5ea598506dcece0c1da235ebac a25de	no	47

Warnings:

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Information:

2	Non Patent Literature	343_20120710_Response_to_Office_Action_Ex_1.pdf	108911	no	4
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Information:

3	Non Patent Literature	343_20120710_Response_to_Office_Action_Exh_2.pdf	921926	no	14
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4	Non Patent Literature	344_20120809_Third_Party_Requesters_Comments_After_Patent_Owners_Response.pdf	3459003	no	48
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5	Non Patent Literature	345_DecofBernhardP.pdf	201289	no	4
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6	Non Patent Literature	346_R1.pdf	308745	no	4
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7	Non Patent Literature	347-R3.pdf	1572152	no	16
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25	Non Patent Literature	363_20121102-Third-Party-Comments-Revised.pdf	3470034 acf00474caefb0c5213ca05aa5e3743878b20add	no	49
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45	Non Patent Literature	379_20130503_Cardenas_Validity_Rebuttal_Expert_Rpt_for_Shamos_Part_5.pdf	24006288 40033488c6375fddc02d7387b56baee446db73b81	no	65
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47	Non Patent Literature	380_20130503_Cardenas_Validity_Rebuttal_Rpt_for_Whitehorn_Part_1.pdf	25678921 667f950c52a12cac998093a3502e46817ca23d23	no	76
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Total Files Size (in bytes):			341548802		

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New International Application Filed with the USPTO as a Receiving Office

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Table with 7 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY. DOCKET NO, TOT CLAIMS, IND CLAIMS. Row 1: 13/911,324, 06/06/2013, 2192, 3120, 6743-00105, 30, 4

CONFIRMATION NO. 4969

35690
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

FILING RECEIPT



Date Mailed: 07/03/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Inventor(s)

Edward Balassanian, Seattle, WA;

Applicant(s)

IMPLICIT NETWORKS, INC., Bellevue, WA

Power of Attorney: The patent practitioners associated with Customer Number 35690

Domestic Priority data as claimed by applicant

This application is a CON of 13/236,090 09/19/2011
which is a CON of 10/636,314 08/06/2003 PAT 8055786
which is a CON of 09/474,664 12/29/1999 PAT 6629163

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

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Projected Publication Date: 10/10/2013

Non-Publication Request: No

Early Publication Request: No

Title

METHOD AND SYSTEM FOR DATA DEMULTIPLEXING

Preliminary Class

717

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/911,324	06/06/2013	Edward Balassanian	6743-00105

CONFIRMATION NO. 4969

POA ACCEPTANCE LETTER

35690
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398



Date Mailed: 07/03/2013

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/06/2013.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/tpnguyen/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number
13/911,324

APPLICATION AS FILED - PART I

(Column 1)		(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	280
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	600
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	720
TOTAL CLAIMS (37 CFR 1.16(j))	30 minus 20 = *	10			OR	x 80 =	800
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 = *	1				x 420 =	420
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	2820

APPLICATION AS AMENDED - PART II

(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	* Minus **	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	* Minus ***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))					OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR		
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	* Minus **	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	* Minus ***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))					OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR		
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

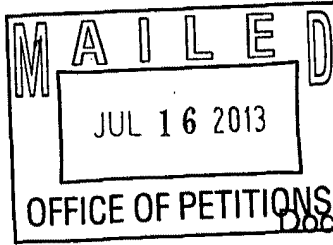
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



MEYERTONS, HOOD, KIVLIN, KOWERT &
GOETZEL, P.C.
P.O. BOX 398
AUSTIN TX 78767-0398



Doc Code: TRACK1.GRANT

<p>Decision Granting Request for Prioritized Examination (Track I or After RCE)</p>	<p>Application No.: 13/911,324</p>
<p>1. THE REQUEST FILED <u>6/6/13</u> IS GRANTED.</p> <p>The above-identified application has met the requirements for prioritized examination</p> <p>A. <input checked="" type="checkbox"/> for an original nonprovisional application (Track I). B. <input type="checkbox"/> for an application undergoing continued examination (RCE).</p> <p>2. The above-identified application will undergo prioritized examination. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:</p> <p>A. filing a <u>petition for extension of time</u> to extend the time period for filing a reply; B. filing an <u>amendment to amend the application to contain more than four independent claims, more than thirty total claims</u>, or a multiple dependent claim; C. filing a <u>request for continued examination</u>; D. filing a notice of appeal; E. filing a request for suspension of action; F. mailing of a notice of allowance; G. mailing of a final Office action; H. completion of examination as defined in 37 CFR 41.102; or I. abandonment of the application.</p> <p>Telephone inquiries with regard to this decision should be directed to Terri Johnson at 571-272-2991. In his/her absence, calls may be directed to Brian Brown at 571-272-5338</p> <p>/Terri Johnson/ Petitions Examiner _____ [Signature] (Title)</p>	



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/911,324	06/06/2013	Edward Balassanian	6743-00105	4969
35690	7590	09/19/2013	EXAMINER	
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. P.O. BOX 398 AUSTIN, TX 78767-0398			CHANG, JUNGWON	
			ART UNIT	PAPER NUMBER
			2454	
			NOTIFICATION DATE	DELIVERY MODE
			09/19/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent_docketing@intprop.com
ptomhkg@gmail.com

Office Action Summary

Application No.
13/911,324

Applicant(s)
BALASSANIAN, EDWARD

Examiner
JUNGWON CHANG

Art Unit
2454

AIA (First Inventor to File)
Status
No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 6/6/2013.
- A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) Claim(s) 26-55 is/are pending in the application.
- 5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) Claim(s) _____ is/are allowed.
- 7) Claim(s) 26-55 is/are rejected.
- 8) Claim(s) _____ is/are objected to.
- 9) Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) The specification is objected to by the Examiner.
- 11) The drawing(s) filed on 6/6/2013 is/are: a) accepted or b) objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) All b) Some * c) None of the:
- Certified copies of the priority documents have been received.
 - Certified copies of the priority documents have been received in Application No. _____.
 - Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/6/2013,6/25/2013
- 3) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 4) Other: _____.

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DETAILED ACTION

1. This action is in response to the preliminary amendment filed on 6/6/2013.

Claims 1-25 have been cancelled, and new claims 26-55 have been added.

2. Claims 26-55 are presented for examination.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 26-55 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-44 of U.S. patent No. 6,629,163.

Although the conflicting claims are not identical, they are not patentably distinct from

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each other because claims 1-44 of the patent '163 comprise the same elements of claims 26-55 of the present application.

Claim Rejections - 35 USC § 103

5. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 26-55 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Amir et al, (US 6,711,166), hereinafter Amir, in view of Taylor (US 6,785,730).

7. As to claim 26, Amir discloses the invention as claimed, including an apparatus, comprising:

a processing unit (processor, fig. 1); and

a memory storing instructions executable by the processing unit to:

create, based on an identification of information in a packet of a message, a path that includes a sequence of routines for processing packets in the message (col. 4, lines 20-60, "reads identifier information imbedded in the header to demultiplex the data");

and

process packets in the message using the sequence of routines in the created path (figs. 3B-4; col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62; col. 10, lines 49-58).

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8. Although Amir discloses gateway that allows converting one protocol into different protocol (col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62, "protocol converter"; col. 10, lines 49-58), Amir does not specifically disclose converting a TCP format into a different format. Taylor discloses converting a TCP format into a different format (col. 5, lines 8-62; col. 6, line 59 - col. 7, line 53; col. 8, lines 41-55). It would have been obvious to one of ordinary skill in the art, before the effective filing date of the claimed invention, to modify the system of Amir to include converting a TCP format into a different format as taught by Taylor. One having ordinary skill in the art would have been motivated to utilize the teachings of Taylor that would translate the TCP format into the appropriate format (Taylor, col. 7, lines 27-39).

9. As to claim 27, Amir discloses the apparatus of claim 26, wherein the sequence includes: a second routine that is used to execute a second, different protocol to convert packets of the different format into another format; and a third routine that is used to execute a third, different protocol to further convert the packets (figs. 3B-4; col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62; col. 10, lines 49-58).

10. As to claim 28, Amir discloses the apparatus of claim 27, wherein the second protocol is an Internet Protocol (IP) and the third protocol is an Ethernet Protocol (col. 1, line 31 – col. 2, line 8).

11. As to claim 29, Amir discloses the apparatus of claim 26, wherein the memory

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stores instructions executable by the processing unit to maintain state information associated with one or more routines in the sequence of routines, and wherein the state information is specific to the message (status, fig. 4; col. 5, line 59 – col. 6, line 58).

12. As to claim 30, Amir discloses the apparatus of claim 26, wherein the sequence of routines includes a routine that is executable to process the packets without converting a format of the packets (It is noted that converting is unnecessary when the source protocol and destination protocol are compatible; col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62, “protocol converter”; col. 10, lines 49-58).

13. As to claim 31, Amir discloses the apparatus of claim 26, wherein the routine is not executable to convert packets having the different format, and wherein the different format is an Internet Protocol (IP) format (col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62, “protocol converter”; col. 10, lines 49-58).

14. As to claim 32, Amir discloses the apparatus of claim 26, wherein the memory stores instructions executable by the processing unit to identify an address associated with the information, wherein the address indicates the routines in the sequence of routines of the created path (figs. 4-5; col. 6, lines 1-65).

15. Claims 33-55 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Amir et al, (US 6,711,166), hereinafter Amir, in view of Engel et al, (US 6,115,393),

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hereinafter Engel.

16. As to claims 33 and 41, they are rejected for the same reasons set forth in claim 26 above. In addition, Amir discloses a non-transitory, computer-readable medium comprising software instructions for processing a message, wherein the software instructions, when executed, cause a computer system to: obtain information from an initial packet of the message (col. 6, lines 1-65; col. 7, line 31 - col. 8, line 33); use the obtained information to identify an address comprising a list of conversion routines (figs. 3B-4; col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62; col. 10, lines 49-58). However, Amir does not specifically disclose a session in which a transport layer protocol is executed to convert packets in a transport layer format into a different format; and another session in which a different protocol corresponding to the different format is executed. Engel, on the other hand, discloses a session in which a transport layer protocol is executed to convert packets in a transport layer format into a different format; and another session in which a different protocol corresponding to the different format is executed (figs. 2-7; col. 7, lines 20-62; col. 8, line 20 – col. 9, line 7). It would have been obvious to one of ordinary skill in the art, before the effective filing date of the claimed invention, to modify the system of Amir to include a session in which a transport layer protocol is executed to convert packets in a transport layer format into a different format; and another session in which a different protocol corresponding to the different format is executed as taught by Engel. One having ordinary skill in the art would have been motivated to utilize the teachings of Engel that would provide communication

information derived from the packet which is associated with multiple layers of at least one of the protocols (Engel, col. 2, lines 28-31).

17. As to claim 34, Amir discloses the medium of claim 33, wherein one or more of the sessions comprises state information for one or more of the conversion routines, and wherein the state information is specific to the message (status, fig. 4; col. 5, line 59 – col. 6, line 58).

18. As to claim 35, Amir discloses the medium of claim 33, wherein the different protocol is associated with a layer selected from the group consisting of an application layer and a network layer (OSI model; col. 1, lines 13-30).

19. As to claim 36, Amir discloses the medium of claim 33, wherein at least one of the routines associated with at least one of the sessions is not used to convert the packets (It is noted that converting is unnecessary when the source protocol and destination protocol are compatible; col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62, "protocol converter"; col. 10, lines 49-58).

20. As to claim 37, Amir discloses the medium of claim 33, wherein the transport layer protocol is a Transmission Control Protocol (TCP) (col. 1, line 31 - col. 2, line 8, "TCP").

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21. As to claim 38, Amir discloses the medium of claim 37, wherein the message comprises a stream of data (col. 1, lines 13-30, "stream of data").

22. As to claim 39, Amir discloses the medium of claim 33, wherein using the obtained information to identify the address includes determining a plurality of protocols by analyzing headers of the initial packet, and wherein the plurality of protocols includes protocols executable at the transport layer and an application layer (figs. 4-5; col. 6, lines 1-65, "header").

23. As to claim 40, Amir discloses the medium of claim 33, wherein the different format is not compatible with the transport layer protocol, and wherein the different format is a network layer format (col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62, "protocol converter"; col. 10, lines 49-58).

24. As to claim 42, Amir discloses the apparatus of claim 41, wherein a different session is associated with a different routine that is used to execute a second, different protocol to convert the packets from the output format to a different output format, and wherein another session is associated with another routine that is used to execute a third, different protocol corresponding to the different output format (col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62, "protocol converter"; col. 10, lines 49-58).

25. As to claim 43, Amir discloses the apparatus of claim 42, wherein the protocols

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include a Transmission Control Protocol (TCP), an Internet Protocol (IP), and an Ethernet Protocol (col. 1, line 31 – col. 2, line 8).

26. As to claim 44, Amir discloses the apparatus of claim 41, wherein at least one of the sessions is associated with a routine that is executable to process packets of the message without converting the packets (It is noted that converting is unnecessary when the source protocol and destination protocol are compatible; col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62, "protocol converter"; col. 10, lines 49-58).

27. As to claim 45, Amir discloses the apparatus of claim 41, wherein the particular routine is executable to convert packets by removing an outermost header of the packets (It is noted that decryption procedure is well known in the art to remove the outside header"; col. 4, lines 20-60, "reads identifier information imbedded in the header to demultiplex the data").

28. As to claim 46, Amir discloses the apparatus of claim 41, wherein the protocol is a transport layer protocol (col. 1, line 31 - col. 2, line 8, "TCP").

29. As to claim 47, Amir discloses the apparatus of claim 46, wherein the transport layer protocol is a Transmission Control Protocol (TCP), and wherein the message comprises a stream of data (col. 1, lines 13-30, "stream of data").

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30. As to claim 48, Amir discloses the apparatus of claim 41, wherein the obtained information includes information from headers of the packet that are associated with a network layer and a transport layer (col. 6, lines 1-65).

31. As to claim 49, Amir discloses the apparatus of claim 48, wherein the memory stores instructions executable by the processing unit to maintain state information associated with one or more routines in the sequence of sessions, and wherein the state information is specific to the message (status, fig. 4; col. 5, line 59 – col. 6, line 58).

32. As to claim 50, it is rejected for the same reasons set forth in claim 26 above. In addition, although “decryption procedure” is well known in the art to remove the outside header, and Amir discloses removing an outermost header of a given packet (col. 4, lines 20-60, “reads identifier information imbedded in the header to demultiplex the data”), Amir does not specifically disclose removing an outermost header of a given packet using a first session corresponding to a protocol in a first layer and by removing the resulting outermost header using a second session corresponding to a different protocol in a different layer. Engel, on the other hand, discloses removing an outermost header of a given packet using a first session corresponding to a protocol in a first layer and by removing the resulting outermost header using a second session corresponding to a different protocol in a different layer (figs. 2-7; col. 7, lines 20-62; col. 8, line 20 – col. 9, line 7). It would have been obvious to one of ordinary skill in the art, before the

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effective filing date of the claimed invention, to modify the system of Amir to include removing an outermost header of a given packet using a first session corresponding to a protocol in a first layer and by removing the resulting outermost header using a second session corresponding to a different protocol in a different layer as taught by Engel. One having ordinary skill in the art would have been motivated to utilize the teachings of Engel that would provide communication information derived from the packet which is associated with multiple layers of at least one of the protocols (Engel, col. 2, lines 28-31).

33. As to claim 51, Amir discloses the medium of claim 50, wherein the protocol in the first layer is a Transmission Control Protocol (TCP), and the message comprises a stream of data (col. 1, lines 13-30, "stream of data").

34. As to claim 52, Amir discloses the medium of claim 50, wherein the protocol in the first layer is a transport layer protocol and the different protocol in the different layer is an application layer protocol (OSI model; col. 1, lines 13-30).

35. As to claim 53, it is rejected for the same reasons set forth in claim 50. In addition, Amir discloses the layers include a network layer, a transport layer, and an application layer (OSI model; col. 1, lines 13-30).

36. As to claim 54, Amir discloses the medium of claim 50, wherein at least one of

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the routines associated with at least one of sessions is not used to remove a header of the packets (It is noted that converting is unnecessary when the source protocol and destination protocol are compatible; col. 7, line 31 - col. 8, line 33; col. 9, lines 47-62, "protocol converter"; col. 10, lines 49-58).

37. As to claim 55, Amir discloses the medium of claim 50, wherein the outermost header has a format that is incompatible with a format of the resulting outermost header, and wherein the outermost header is associated with a network layer protocol (It is noted that decryption procedure is well known in the art to remove the outside header; col. 4, lines 20-60, "reads identifier information imbedded in the header to demultiplex the data").

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Saito et al, US 7,383,341, Crouch et al, US 6,259,781, Volfson et al, US 6,151,390, Zarom, US 6,356,529 disclose protocol conversion using channel associated signaling.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUNGWON CHANG whose telephone number is (571)272-3960. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph E. Avellino can be reached on 571-272-3905. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUNGWON CHANG/
Primary Examiner, Art Unit 2454
September 16, 2013

Notice of References Cited	Application/Control No. 13/911,324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD	
	Examiner JUNGWON CHANG	Art Unit 2454	Page 1 of 1

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification	
*	A	US-6,629,163	09-2003	Balassanian, Edward	710/33
*	B	US-6,711,166	03-2004	Amir et al.	370/395.1
*	C	US-6,785,730	08-2004	Taylor, Rebecca S.	709/230
*	D	US-6,115,393	09-2000	Engel et al.	370/469
*	E	US-7,383,341	06-2008	Saito et al.	709/228
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	L	US-			
	M	US-			

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*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
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Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2013-06-06
	First Named Inventor	Edward Balassanian	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		6743-00105

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2013-06-06
	First Named Inventor	Edward Balassanian	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		6743-00105

1	RFC: 791, Internet Protocol: DARPA Internet Program Protocol Specification, September 1981, prepared for Defense Advanced Research Projects Agency Information Processing Techniques Office by Information Sciences Institute University of Southern California, 52 pages.	<input type="checkbox"/>
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¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number			
Filing Date		2013-06-06	
First Named Inventor	Edward Balassanian		
Art Unit			
Examiner Name			
Attorney Docket Number		6743-00105	

CERTIFICATION STATEMENT

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That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Dean M. Munyon/	Date (YYYY-MM-DD)	2013-06-06
Name/Print	Dean M. Munyon	Registration Number	42914

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	59	((EDWARD) near2 (BALASSANIAN)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/09/16 22:44
S1	20	(routine\$4 near9 packet\$5 near9 path\$5) and ((convert\$5 conversion\$5) near9 tcp)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/14 18:29
S5	65	"5768521" and @ad<"19991229"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/14 18:37
S6	7	S1 and @ad<"19991229"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/14 18:37
S7	117	(routine\$4 near9 packet\$5 near9 process\$5) and ((convert\$5 conversion\$5) near2 protocol\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/14 18:43
S8	34	S7 and @ad<"19991229"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/14 18:43
S12	1440	((conver\$6 conversion) with protocol\$4) and ((packet\$4 message\$3) near9 handler\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/15 00:11
S13	286	S12 and @ad<"19991229"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/15 00:12
S14	193	S13 and ("709"/\$ "370"/\$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/15 00:12
S19	108	((conver\$6 conversion) with protocol\$4 with routine\$4) and ((packet\$4 message\$3) near9 handl\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/15 00:26

S26	105	((convert\$9 conversion\$4) near8 (tcp protocol\$5) near8 handl\$5 same (packet\$5 header\$5)) and @ad<"19991229"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/15 22:23
S34	2795	(automatic\$6 dynamic\$5) near9 (serie\$5 consequenc\$6 sequenc\$6) near9 ((conversion convert\$6 translat\$5))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 10:54
S35	1360	S34 and @ad<"20030806"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 10:56
S36	68	S34 and @ad<"20030806" and ("709"/\$ "370"/\$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 10:56
S37	4	((conversion convert\$6 translat\$5) with tcp) and S35	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 10:56
S41	20	(automatic\$6 dynamic\$5) near9 (serie\$5 consequenc\$6 sequenc\$6) near9 ((conversion convert\$6 translat\$5)) with protocol\$5	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 11:01
S43	4	S41 and @ad<"19991229"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 11:01
S48	680	(serie\$5 consequenc\$6 sequenc\$6) with ((conversion convert\$6 translat\$5)) with (demux demultiplex\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 11:03
S50	270	S48 and @ad<"19991229"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 11:03
S51	4	((conversion convert\$6 translat\$5)) with (tcp protocol\$5) and S50	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 11:04
S52	122	((conversion convert\$6 translat\$5)) same (demux demultiplex\$5) same (tcp)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2013/09/16 11:06
S54	17	(("6185208") or ("6115393") or ("6101189") or ("6094578") or ("6075796") or ("6047002") or ("6038233") or ("6018710") or ("5896383") or ("5894478") or ("5841764") or ("5809233") or	US-PGPUB; USPAT; USOCR	OR	OFF	2013/09/16 11:15

("5771459") or ("5748633") or ("5636216")
or ("5555244") or ("5550984").PN.

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BIB DATA SHEET
CONFIRMATION NO. 4969

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.	
13/911,324	06/06/2013	709	2454	6743-00105	
APPLICANTS IMPLICIT NETWORKS, INC., Bellevue, WA, Assignee (with 37 CFR 1.172 Interest); Edward Balassanian, Seattle, WA;					
** CONTINUING DATA ***** This application is a CON of 13/236,090 09/19/2011 which is a CON of 10/636,314 08/06/2003 PAT 8055786 which is a CON of 09/474,664 12/29/1999 PAT 6629163					
** FOREIGN APPLICATIONS *****					
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 06/26/2013					
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Verified and Acknowledged <u>/JUNGWON CHANG/</u> Examiner's Signature	<input type="checkbox"/> Met after Allowance Initials	STATE OR COUNTRY WA	SHEETS DRAWINGS 16	TOTAL CLAIMS 30	INDEPENDENT CLAIMS 4
ADDRESS MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. P.O. BOX 398 AUSTIN, TX 78767-0398 UNITED STATES					
TITLE METHOD AND SYSTEM FOR DATA DEMULTIPLEXING					
FILING FEE RECEIVED 3120	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees		<input type="checkbox"/> 1.16 Fees (Filing)
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			<input type="checkbox"/> Other _____		<input type="checkbox"/> Credit

Search Notes 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	230, 228	9/17/2013	JWC
370	395.1, 469, 231	9/17/2013	JWC
379	207.02, 229	9/17/2013	JWC
710	33	9/17/2013	JWC

SEARCH NOTES		
Search Notes	Date	Examiner
EAST search report attached	9/17/2013	JWC
Inventor name searched	9/17/2013	JWC

INTERFERENCE SEARCH			
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 1 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
Examiner Name		

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Examiner Initial	Cite No.	Patent Number	Name of Patentee Or Applicant Of Cited Document	Issue Date
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Examiner Initial	Cite No.	Foreign Document No.	Country Code	Name of Patentee or Applicant of cited Document	Publication Date
	27	0817031	EP	Brad Fowlow	01/07/1998

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 2 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 3 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

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	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

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		<i>Implicit Networks, Inc. v. Advanced Micro Devices, Inc. et al.</i>; C08-0184 JLR; USDC for the Western District of Washington, Seattle Division:
	143	2/4/08 Plaintiff's Original Complaint
	144	8/26/08 Defendant NVIDIA Corporation's Answer to Complaint
	145	8/26/08 Defendant Sun Microsystems, Inc.'s Answer to Complaint
	146	8/27/08 Defendant Advanced Micro Devices, Inc.'s Answer to Complaint for Patent Infringement
	147	8/27/08 RealNetworks, Inc.'s Answer to Implicit Networks, Inc.'s Original Complaint for Patent Infringement, Affirmative Defenses, and Counterclaims
	148	8/27/08 Intel Corp.'s Answer, Defenses and Counterclaims
	149	8/27/08 Defendant RMI Corporation's Answer to Plaintiff's Original Complaint
	150	9/15/08 Plaintiff's Reply to NVIDIA Corporation's Counterclaims
	151	9/15/08 Plaintiff's Reply to Sun Microsystems Inc.'s Counterclaims
	152	9/16/08 Plaintiff's Reply to RealNetworks, Inc.'s Counterclaims
	153	9/16/08 Plaintiff's Reply to Intel Corp.'s Counterclaims
	154	12/10/08 Order granting Stipulated Motion for Dismissal with Prejudice re NVIDIA Corporation, Inc.
	155	12/16/08 Defendants AMD, RealNetworks, RMI, and Sun's Motion to Stay Pending the Patent and Trademark Office's Reexamination of the '163 Patent
	156	12/29/08 Order granting Stipulated Motion for Dismissal without Prejudice of Claims re Sun Microsystems, Inc.
	157	1/5/09 Plaintiff's Opposition to Defendants AMD, RealNetworks, RMI, and Sun's Motion to Stay Pending Reexamination and Exhibit A
	158	1/9/09 Reply of Defendants AMD, RealNetworks, RMI, and Sun's Motion to Stay Pending the Patent and Trademark Office's Reexamination of the '163 Patent
	159	2/9/09 Order Granting Stay Pending the United States Patent and Trademark Office's Reexamination of U.S. Patent No. 6,629,163
	160	2/17/09 Order Granting Stipulated Motion for Dismissal of Advanced Micro Devices, Inc. with Prejudice
	161	5/14/09 Order Granting Stipulated Motion for Dismissal of RMI Corporation with Prejudice
	162	10/13/09 Order Granting Stipulated Motion for Dismissal of Claims Against and Counterclaims by Intel Corporation
	163	10/30/09 Executed Order for Stipulated Motion for Dismissal of Claims Against and Counterclaims by RealNetworks, Inc.
		<i>Implicit Networks, Inc. v. Microsoft Corp.</i>, C09-5628 HLR; USDC for the Northern District of California, San Francisco Division
	164	11/30/09 Plaintiff's Original Complaint, <i>Implicit v Microsoft</i> , Case No. 09-5628
	165	01/22/10 Order Dismissing Case, <i>Implicit v Microsoft</i> , Case No. 09-5628
		<i>Implicit Networks, Inc. v. Cisco Systems, Inc.</i>, C10-3606 HRL; USDC for the Northern District of California, San Francisco Division
	166	08/16/10 Plaintiff's Original Complaint, <i>Implicit v Cisco</i> , Case No. 10-3606
	167	11/22/10 Defendant Cisco Systems, Inc.'s Answer and Counterclaims, <i>Implicit v Cisco</i> , Case No. 10-3606
	168	12/13/10 Plaintiff, Implicit Networks, Inc.'s, Answer to Counterclaims, <i>Implicit v Cisco</i> , Case No. 10-3606
	169	10/04/11 Order of Dismissal with Prejudice, <i>Implicit v Cisco</i> , Case No. 10-3606
		<i>Implicit Networks, Inc. v. Citrix Systems, Inc.</i>, C10-3766 JL; USDC for the Northern District of California, San Francisco Division
	170	08/24/10 Plaintiff's Original Complaint, <i>Implicit v Citrix</i> , Case No. 10-3766
	171	12/01/10 Plaintiff's First Amended Complaint, <i>Implicit v Citrix</i> , Case No. 10-3766

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	172	01/14/11 Defendant Citrix Systems, Inc.'s Answer, Defenses and Counter-complaint for Declaratory Judgment, <i>Implicit v Citrix</i> , Case No. 10-3766
	173	02/18/11 Plaintiff, <i>Implicit Networks, Inc.</i> 's, Answer to Defendants Counterclaims, <i>Implicit v Citrix</i> , Case No. 10-3766
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	174	05/02/11 Order of Dismissal, <i>Implicit v Citrix</i> , Case No. 10-3766
		<i>Implicit Networks, Inc. v.F5 Networks, Inc., C10-3365 JCS; USDC for the Northern District of California, San Francisco Division</i>
	175	07/30/10 Plaintiff's Original Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	176	10/13/10 Defendants' Answer and Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	177	11/03/10 Plaintiff's Answer to Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	178	12/10/10 Plaintiff's First Amended Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	179	01/14/11 Defendants' Answer to 1 st Amended Complaint and Counterclaim, <i>Implicit v F5</i> , Case No. 10-3365
	180	02/18/11 Plaintiff's Answer to F5's Amended Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	181	04/18/11 Defendants' Amended Answer to 1 st Amended Complaint and Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	182	05/05/11 Plaintiff's Answer to F5's Amended Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	183	07/22/11 F5 Networks, Inc.'s Invalidation Contentions, <i>Implicit v F5</i> , Case No. 10-3365
	184	07/22/11 F5 Networks, Inc.'s Invalidation Contentions, Exhibit A, <i>Implicit v F5</i> , Case No. 10-3365
		(31 documents)
	185	07/22/11 F5 Networks, Inc.'s Invalidation Contentions, Exhibit B, <i>Implicit v F5</i> , Case No. 10-3365
	186	10/18/11 Joint Claim Construction & Pre-Hearing Statement (PR 4-3), <i>Implicit v F5</i> , Case No. 10-3365
	187	10/18/11 Joint Claim Construction & Pre-Hearing Statement (PR 4-3) Exhibit A, <i>Implicit v F5</i> , Case No. 10-3365
		(2 documents)
	188	11/28/11 Plaintiff's Opening Claim Construction Brief, <i>Implicit v F5</i> , Case No. 10-3365
	189	11/29/11 Amended Joint Claim Construction & Pre-Hearing Statement, <i>Implicit v F5</i> , Case No. 10-3365
	190	11/29/11 Amended Joint Claim Construction & Pre-Hearing Statement, Exhibit A, <i>Implicit v F5</i> , Case No. 10-3365
	191	12/12/11 Defendants' Claim Construction Brief, <i>Implicit v F5</i> , Case No. 10-3365
	192	12/19/11 Plaintiff's Reply to Defendants' (F5, HP, Juniper) Responsive Claim Construction Brief (4-5), <i>Implicit v F5</i> , Case No. 10-3365
	193	01/27/12 Transcript of Proceeding Held on 1-17-12; <i>Implicit v F5</i> , Case No. 10-3365
	194	01/27/12 Transcript of Proceeding Held on 1-18-12; <i>Implicit v F5</i> , Case No. 10-3365
	195	01/27/12 Transcript of Proceeding Held on 1-19-12; <i>Implicit v F5</i> , Case No. 10-3365
	196	02/29/12 Claim Construction Order
	197	08/15/12 Storer Invalidation Report
	198	09/10/12 <i>Implicit</i> 's Expert Report of Scott M. Nettles
	199	03/13/13 Order Granting Defendants' Motion for Summary Judgment
	200	04/09/13 Notice of Appeal to the Federal Circuit
		<i>Implicit Networks, Inc. v. Hewlett-Packard Company, C10-3746 JCS: USDC for the Northern District of California, San Francisco Division</i>
	201	08/23/10 Plaintiff's Original Complaint, <i>Implicit v HP</i> , Case No. 10-3746
	202	11/23/10 Plaintiff's First Amended Complaint, <i>Implicit v HP</i> , Case No. 10-3746
	203	01/14/11 Defendant HP's Answer and Counterclaims, <i>Implicit v HP</i> , Case No. 10-3746
	204	02/18/11 <i>Implicit Networks, Inc.</i> 's Answer to HP Counterclaims, <i>Implicit v HP</i> , Case No. 10-3746
	205	05/10/11 Plaintiff's Amended Disclosure of Asserted Claims and Infringement Contentions, Case No. 10-3746
	206	06/30/11 Defendant HP Company's Invalidation Contentions, <i>Implicit v HP</i> , Case No. 10-3746
	207	06/30/11 Defendant HP Company's Invalidation Contentions, A1-14, <i>Implicit v HP</i> , Case No. 10-3746
	208	06/30/11 Defendant HP Company's Invalidation Contentions, B1-21, <i>Implicit v HP</i> , Case No. 10-3746
		<i>Implicit Networks, Inc. v. Juniper Networks, C10-4234 EDL: USDC for the Northern District of California, San Francisco</i>

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	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
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		Division
	209	09/20/10 Plaintiff's Original Complaint, <i>Implicit v Juniper</i> , Case No. 10-4234
	210	11/12/10 Juniper Network's Motion to Dismiss For Failure to State a Claim Under Rule 12(B)(6): Memorandum of Points and Authorities; <i>Implicit v Juniper</i> , Case No. 10-4234
Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	211	11/12/10 Juniper Network's Request for Judicial Notice in Support of its Motion to Dismiss For Failure to State a Claim Under Rule 12(B)(6): Memorandum of Points and Authorities; <i>Implicit v Juniper</i> , Case No. 10-4234
	212	12/01/10 First Amended Complaint; <i>Implicit v Juniper</i> , Case No. 10-4234
	213	01/18/11 Juniper Networks, Inc.'s Answer and Affirmative Defenses to 1 st Amended Complaint, <i>Implicit v Juniper</i> , Case No. 10-4234
	214	02/18/11 Plaintiff's Answer to Defendant's Counterclaims, <i>Implicit v Juniper</i> , Case No. 10-4234
	215	05/23/11 Plaintiff's Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	216	11/15/11 Plaintiff's Amended Disclosure of Asserted Claim and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	217	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	218	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit E, <i>Implicit v Juniper</i> , Case No. 10-4234
	219	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit J, <i>Implicit v Juniper</i> , Case No. 10-4234
	220	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit K, <i>Implicit v Juniper</i> , Case No. 10-4234
	221	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibits M-O, <i>Implicit v Juniper</i> , Case No. 10-4234
	222	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	223	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit B, <i>Implicit v Juniper</i> , Case No. 10-4234
	224	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit F, <i>Implicit v Juniper</i> , Case No. 10-4234
	225	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit N, <i>Implicit v Juniper</i> , Case No. 10-4234
	226	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit P, <i>Implicit v Juniper</i> , Case No. 10-4234
	227	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Q, <i>Implicit v Juniper</i> , Case No. 10-4234
	228	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit S., <i>Implicit v Juniper</i> , Case No. 10-4234
	229	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-1, <i>Implicit v Juniper</i> , Case No. 10-4234
	230	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-2, <i>Implicit v Juniper</i> , Case No. 10-4234
	231	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-3, <i>Implicit v Juniper</i> , Case No. 10-4234
	232	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-4, <i>Implicit v Juniper</i> , Case No. 10-4234
	233	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit U, <i>Implicit v Juniper</i> , Case No. 10-4234
	234	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit V, <i>Implicit v Juniper</i> , Case No. 10-4234
	235	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit W, <i>Implicit v Juniper</i> , Case No. 10-4234

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	236	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit X, <i>Implicit v Juniper</i> , Case No. 10-4234
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	237	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-1, <i>Implicit v Juniper</i> , Case No. 10-4234
	238	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-2, <i>Implicit v Juniper</i> , Case No. 10-4234
	239	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-3, <i>Implicit v Juniper</i> , Case No. 10-4234
	240	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-4, <i>Implicit v Juniper</i> , Case No. 10-4234
	241	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Z, <i>Implicit v Juniper</i> , Case No. 10-4234
	242	12/19/11 Spencer Hosie Declaration in Support of Plaintiff's Reply Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	243	12/19/11 Spencer Hosie Declaration in Support of Plaintiff's Reply Claim Construction Brief, Exhibit P, <i>Implicit v Juniper</i> , Case No. 10-4234
	244	01/10/12 Plaintiff's 1-10-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	245	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	246	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A1, <i>Implicit v Juniper</i> , Case No. 10-4234
	247	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A2, <i>Implicit v Juniper</i> , Case No. 10-4234
	248	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A3, <i>Implicit v Juniper</i> , Case No. 10-4234
	249	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A4, <i>Implicit v Juniper</i> , Case No. 10-4234
	250	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit B1, <i>Implicit v Juniper</i> , Case No. 10-4234
	251	02/29/12 Plaintiff's 2-29-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	252	04/06/12 Plaintiff's 4-6-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	253	04/09/12 Plaintiff's 4-9-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	254	09/11/12 Implicit's Expert Report of Scott Nettles
	255	11/09/12 Juniper's Notice of Motion and Memorandum of Law ISO Motion for Summary Judgment or, in the alternative, for Partial Summary Judgment, on the Issue of Invalidity
	256	11/09/12 Exhibit 2 to Declaration in support of Juniper's Motion for Summary Judgment – Calvert Expert Report
	257	11/09/12 Exhibit 3 to Declaration in support of Juniper's Motion for Summary Judgment – Calvert Supplemental Expert Report
	258	11/26/12 Implicit Opposition to Juniper's and F5 Motion on Invalidity
	259	11/26/12 Exhibit A to Hosie Declaration- 08/27/12 Excerpts from David Blaine deposition
	260	11/26/12 Exhibit B to Hosie Declaration– 10/25/12 Excerpts from Kenneth Calvert Deposition
	261	11/26/12 Exhibit C to Hosie Declaration – 08/15/12 Excerpts from Kenneth Calvert Expert Report
	262	11/26/12 Exhibit D to Hosie Declaration – USPN 6,651,099 to Dietz et al
	263	11/26/12 Exhibit E to Hosie Declaration – Understanding Packet-Based and Flow-Based Forwarding
	264	11/26/12 Exhibit F to Hosie Declaration – Wikipedia on Soft State
	265	11/26/12 Exhibit G to Hosie Declaration – Sprint Notes
	266	11/26/12 Exhibit H to Hosie Declaration – Implicit's Supplemental Response to Juniper's 2 nd Set of Interrogatories
	267	11/26/12 Exhibit I to Hosie Declaration – USPN 7,650,634 (Zuk)
	268	03/13/13 Order Granting Defendants' Motion for Summary Judgment
	269	04/09/13 Notice of Appeal to the Federal Circuit

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		Other Implicit Networks, Inc. Prosecution Matters:
	270	Serial No. 11/933,022 Utility Application filed October 31, 2007
	271	Serial No. 11/933,022 Preliminary Amendment filed February 19, 2008
	272	Serial No. 11/933,022 Office Action mailed June 24, 2009
	273	Serial No. 11/933,022 Amendment filed September 24, 2009
	274	Serial No. 11/933,022 Office Action dated December 11, 2009
	275	Serial No. 11/933,022 Amendment and Response dated January 29, 2010
	276	Serial No. 11/933,022 Notice of Allowance dated March 2, 2010
	277	Serial No. 11/933,022 Issue Notification dated May 4, 2010
	278	Serial No.10/636,314 Utility Application filed August 6, 2003
	279	Serial No.10/636,314 Office Action dated April 7, 2008
	280	Serial No.10/636,314 Response to Restriction Requirement dated August 5, 2008
	281	Serial No.10/636,314 Office Action dated October 3, 2008
	282	Serial No.10/636,314 Response to Office Action dated April 3, 2009
	283	Serial No.10/636,314 Notice of Non-Compliant Amendment dated May 4, 2009
	284	Serial No.10/636,314 Amendment to Office Action Response dated June 4, 2009
	285	Serial No.10/636,314 Notice of Non-Compliant Amendment dated June 12, 2009
	286	Serial No.10/636,314 Amendment to Office Action dated July 10, 2009
	287	Serial No.10/636,314 Final Rejection Office Action dated October 21, 2009
	288	Serial No.10/636,314 Amendment after Final Office Action dated December 14, 2009
	289	Serial No.10/636,314 Advisory Action dated January 11, 2010
	290	Serial No.10/636,314 Notice of Non-Compliant Amendment dated January 11, 2010
	291	Serial No.10/636,314 Supplemental Amendment and Response dated March 13, 2010
	292	Serial No.10/636,314 Office Action dated May 11, 2010
	293	Serial No.10/636,314 Amendment and Response dated September 13, 2010
	294	Serial No.10/636,314 Final Rejection dated November 24, 2010
	295	Serial No.10/636,314 Notice of Appeal dated May 19, 2011
	296	Serial No.10/636,314 Amendment and Request for Continued Examination dated July 19, 2011
	297	Serial No.10/636,314 Notice of Allowance dated September 13, 2011
	298	Serial No.10/636,314 Notice of Allowance dated September 19, 2011
	299	Serial No.10/636,314 Issue Notification dated October 19, 2011
	300	Serial No. 09/474,664 Utility Application filed December 29, 1999
	301	Serial No. 09/474,664 Office Action dated September 23, 2002
	302	Serial No. 09/474,664 Amendment and Response dated February 24, 2003
	303	Serial No. 09/474,664 Notice of Allowance dated May 20, 2003
	304	Serial No. 90/010, 356 Request for Ex Parte Reexamination dated December 15, 2008
	305	Serial No. 90/010, 356 Office Action Granting Reexamination dated January 17, 2009
	306	Serial No. 90/010, 356 First Office Action dated July 7, 2009
	307	Serial No. 90/010, 356 First Office Action Response dated September 1, 2009
	308	Serial No. 90/010, 356 Patent Owner Interview Summary dated October 23, 2009
	309	Serial No. 90/010, 356 Office Action Final dated December 4, 2009
	310	Serial No. 90/010, 356 Amendment and Response to Office Action dated December 18, 2009
	311	Serial No. 90/010, 356 Amendment and Response to Office Action dated January 4, 2010

*

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 12 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	312	Serial No. 90/010, 356 Advisory Action dated January 21, 2010
	313	Serial No. 90/010, 356 Amendment and Response to Advisory Action dated February 8, 2010
	314	Serial No. 90/010, 356 Notice of Intent to Issue a Reexam Certificate dated March 2, 2010
	315	Serial No. 90/010, 356 Reexamination Certificate Issued dated June 22, 2010
	316	Serial No. 95/000,659 Inter Partes Reexam Request dated February 13, 2012
	317	Serial No. 95/000,659 Order Granting Reexamination dated April 3, 2012
	318	Serial No. 95/000,659 Office Action dated April 3, 2012
	319	Serial No. 95/000,659 Office Action Response dated June 4, 2012 (including Exhibits 1 & 2) (4 documents)
	320	Serial No. 95/000,659 Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012
	321	Serial No. 95/000,659 Appendix R-1 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Declaration of Prof. Dr. Bernhard Plattner)
	322	Serial No. 95/000,659 Appendix R-2 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Prof. Dr. Bernhard Plattner CV)
	323	Serial No. 95/000,659 Appendix R-3 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Listing of Publications to Prof. Dr. Bernhard Plattner updated February 2012)
	324	Serial No. 95/000,659 Appendix R-4 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Office Action Granting Reexamination in 95/000,660 dated May 10, 2012)
	325	Serial No. 95/000,659 Appendix R-5 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Office Action in 95/000,660 dated May 10, 2012)
	326	Serial No. 95/000,659 Appendix R-6 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Implicit Networks, Inc. USPN 6,629,163 Claims Chart)
	327	Serial No. 95/000,659 Appendix R-7 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Internet Protocol DARPA Internet Program Protocol Specification dated September 1991)
	328	Serial No. 95/000,659 Appendix R-8 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Atkinson, "IP Encapsulating Security Payload (ESP) dated August 1995)
	329	Serial No. 95/000,659 Appendix R-9 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Claim Construction Order dated February 29, 2012)
	330	Serial No. 95/000,659 Appendix R-10-1 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. I of Edward Balassanian Deposition Transcript dated May 30, 2012)
	331	Serial No. 95/000,659 Appendix R-10-2 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. II of Edward Balassanian Deposition Transcript dated May 31, 2012)
	332	Serial No. 95/000,659 Appendix R-10-3 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. III of Edward Balassanian Deposition Transcript dated June 7, 2012)
	333	Serial No. 95/000,659 Appendix R-10-4 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. IV of Edward Balassanian Deposition Transcript dated June 8, 2012)
	334	Serial No. 95/000,659 Appendix R-11 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Implicit Networks, Inc.'s Response to Juniper Networks, Inc.'s First Set of Requests for Admission 1-32)
	335	Serial No. 95/000,659 Action Closing Prosecution dated October 1, 2012
	336	Serial No. 95/000,659 Petition to Withdraw and Reissue Action Closing Prosecution dated November 20, 2012
	337	Serial No. 95/000,659 Patent Owner Comments to Action Closing Prosecution dated December 3, 2012
	338	Serial No. 95/000,659 Opposition to Petition dated December 17, 2012
	339	Serial No. 95/000,659 Third Party Comments to Action Closing Prosecution dated January 2, 2013
	340	Serial No. 95/000,660 Inter Partes Reexam Request dated March 2, 2012
	341	Serial No. 95/000,660 Order Granting Reexamination dated May 10, 2012

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 13 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
Examiner Name		

Examiner Initials*	Cite No.	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	342	Serial No. 95/000,660 Office Action dated May 10, 2012
	343	Serial No. 95/000,660 Response to Office Action dated July 10, 2012 (including Exhibits 1 and 2)
	344	Serial No. 95/000,660 Third Party Comments to Office After Patent Owner's Response dated August 8, 2012 (including Revised Comments)
	345	Serial No. 95/000,660 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Declaration of Prof. Dr. Bernhard Plattner)
	346	Serial No. 95/000,660 Appendix R-1 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Prof. Dr. Bernhard Plattner CV)
	347	Serial No. 95/000,660 Appendix R-3 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Listing of Publications to Prof. Dr. Bernhard Plattner updated February 2012)
	348	Serial No. 95/000,660 Appendix R-4 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Office Action Granting Reexamination in 95/000,660 dated May 10, 2012)
	349	Serial No. 95/000,660 Appendix R-5 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Office Action in 95/000,660 dated May 10, 2012)
	350	Serial No. 95/000,660 Appendix R-6 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Implicit Networks, Inc. USPN 6,629,163 Claims Chart)
	351	Serial No. 95/000,660 Appendix R-7 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Internet Protocol DARPA Internet Program Protocol Specification dated September 1991)
	352	Serial No. 95/000,660 Appendix R-8 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Atkinson, "IP Encapsulating Security Payload (ESP) dated August 1995)
	353	Serial No. 95/000,660 Appendix R-9 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Claim Construction Order dated February 29, 2012)
	354	Serial No. 95/000,660 Appendix R-10 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Vol. I-IV of Edward Balassanian Deposition Transcript dated May 30, 2012)
	355	Serial No. 95/000,660 Appendix R-11 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Shacham, A., et al, "IP Payload Compression Protocol", Network Working Group, RFC 3173 September 2001)
	356	Serial No. 95/000,660 Appendix R-12 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Shacham, A., et al, "IP Payload Compression Protocol", Network Working Group, RFC 2393 December 1998)
	357	Serial No. 95/000,660 Appendix R-13 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 ('163 Pfeiffer Claim Chart)
	358	Serial No. 95/000,660 Appendix R-14 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Ylonen, T., "SSH Transport Layer Protocol", Network Working Group – Draft February 22, 1999)
	359	Serial No. 95/000,660 Appendix R-15 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Dommety, G., "Key and Sequence Number Extensions to GRE", Network Working Group, RFC 2890 September 2000)
	360	Serial No. 95/000,660 Appendix R-16 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Monsour, R., et al, "Compression in IP Security" March 1997)
	361	Serial No. 95/000,660 Appendix R-17 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Friend, R., Internet Working Group RFC 3943 dated November 2004 "Transport Layer Security Protocol Compression Using Lempel-Ziv-Stac)
	362	Serial No. 95/000,660 Appendix R-18 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Implicit Networks, Inc.'s Response to Juniper Networks, Inc.'s First Set of Requests for Admission 1-32)
	363	Serial No. 95/000,660 Revised - Third Party Comments to Office After Patent Owner's Response dated November 2, 2012
	364	Serial No. 95/000,660 Action Closing Prosecution dated December 21, 2012
	365	Serial No. 95/000,660 Comments to Action Closing Prosecution dated February 21, 2013 (including Dec of Dr. Ng)
	366	Serial No. 95/000,660 Third Party Comments to Action Closing Prosecution dated March 25, 2013
	367	PCT/US00/33634 – PCT application (WO 01/2077 A2 - 7/12/01)
	368	PCT/US00/33634 – Written Opinion (WO 01/50277 A3 – 2/14/02)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 14 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

369	PCT/US00/33634 – International Search Report (10/9/01)
370	PCT/US00/33634 – Response to Official Communication dated December 7, 2001 (3/21/02)
371	PCT/US00/33634 – International Preliminary Examination Report (4/8/02)
372	PCT/US00/33634 – Official Communication (1/24/03)
373	PCT/US00/33634 – Response to Official Communication dated January 24, 2003 (3/12/03)
374	PCT/US00/33634 – Official Communication (5/13/04)
375	PCT/US00/33634 – Response to Summons to Attend Oral Proceeding dated May 13, 2004 (10/9/04)
376	PCT/US00/33634 – Decision to Refuse a European Patent application (11/12/04)
377	PCT/US00/33634 – Minutes of the oral proceedings before the Examining Division (10/12/04)
378	PCT/US00/33634 – Closure of the procedure in respect to Application No. 00984234.5 – 2212 (2/22/05)
379	05/03/13 Expert Report of Dr. Alfonso Cardenas Regarding Validity of U.S. Patent Nos. 6,877,006; 7,167,864; 7,720,861; AND 8,082,268 (6 documents)
380	Expert Report of Dr. Alfonso Cardenas Regarding Validity of U.S. Patent No. 7,167,864 (3 documents)
381	“InfoReports User Guide: Version 3.3.1;” Platinum Technology, Publication No. PRO-X-331-UG00-00, printed April 1998; Pages 1-430.

Examiner Signature: /Jungwon Chang/	Date Considered: 09/12/2013
-------------------------------------	-----------------------------


CERTIFICATION STATEMENT

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18.

Signature: /Dean M. Munyon/	Date: 2013-06-25
Name/Print: Dean M. Munyon	Registration Number: 42,914

Index of Claims 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	09/17/2013							
	1	-							
	2	-							
	3	-							
	4	-							
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	22	-							
	23	-							
	24	-							
	25	-							
	26	✓							
	27	✓							
	28	✓							
	29	✓							
	30	✓							
	31	✓							
	32	✓							
	33	✓							
	34	✓							
	35	✓							
	36	✓							

Index of Claims 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	09/17/2013							
	37	✓							
	38	✓							
	39	✓							
	40	✓							
	41	✓							
	42	✓							
	43	✓							
	44	✓							
	45	✓							
	46	✓							
	47	✓							
	48	✓							
	49	✓							
	50	✓							
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	52	✓							
	53	✓							
	54	✓							
	55	✓							



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Table with 4 columns: APPLICATION NUMBER (13/911,324), FILING OR 371(C) DATE (06/06/2013), FIRST NAMED APPLICANT (Edward Balassanian), ATTY. DOCKET NO./TITLE (6743-00105)

CONFIRMATION NO. 4969

PUBLICATION NOTICE

35690
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398



Title:METHOD AND SYSTEM FOR DATA DEMULTIPLEXING

Publication No.US-2013-0266025-A1
Publication Date:10/10/2013

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Electronic Petition Request	TERMINAL DISCLAIMER TO OBIVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT
Application Number	13911324
Filing Date	06-Jun-2013
First Named Inventor	Edward Balassanian
Attorney Docket Number	6743-00105
Title of Invention	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING

- Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action
- This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
IMPLICIT NETWORKS, INC.	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

6629163

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:

- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

Applicant(s) status remains as SMALL ENTITY.

Applicant(s) status remains as other than SMALL ENTITY.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 42914

A sole inventor

A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors

A joint inventor; all of whom are signing this request

The assignee of record of the entire interest that has properly made itself of record pursuant to 37 [CFR 3.71](#)

Signature	/Dean M. Munyon/
Name	Dean M. Munyon

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	13911324
Filing Date:	06-Jun-2013
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Filer:	Dean M. Munyon/Deena Beasley
Attorney Docket Number:	6743-00105

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Statutory or Terminal Disclaimer	1814	1	160	160

Pages:

Claims:

Miscellaneous-Filing:

Petition:

Patent-Appeals-and-Interference:

Post-Allowance-and-Post-Issuance:

Extension-of-Time:

Juniper Ex. 1004-p. 246

Juniper v Implicit

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				160

Doc Code: DISQ.E.FILE

Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 13911324

Filing Date: 06-Jun-2013

Applicant/Patent under Reexamination: Balassanian et al.

Electronic Terminal Disclaimer filed on November 20, 2013

APPROVED

This patent is subject to a terminal disclaimer

DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	17451979
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon/Deena Beasley
Filer Authorized By:	Dean M. Munyon
Attorney Docket Number:	6743-00105
Receipt Date:	20-NOV-2013
Filing Date:	06-JUN-2013
Time Stamp:	12:06:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$160
RAM confirmation Number	10289
Deposit Account	501505
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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Juniper v Implicit

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Electronic Terminal Disclaimer-Filed	eTerminal-Disclaimer.pdf	33826 e5096374f8621c20faf78019f2289c83dd393ca9	no	2

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30345 7c277c7cda32a1ec784a9a9dec6e523364f447e9	no	2
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Total Files Size (in bytes): 64171

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13911324	
	Filing Date		2013-06-06	
	First Named Inventor	Edward Balassanian		
	Art Unit	2454		
	Examiner Name	CHANG, JUNGWON		
	Attorney Docket Number	6743-00105		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13911324
	Filing Date	2013-06-06
	First Named Inventor	Edward Balassanian
	Art Unit	2454
	Examiner Name	CHANG, JUNGWON
	Attorney Docket Number	6743-00105

1	Non-Final Office Action in Inter Partes Reexamination Control No. 95/000,659 issued August 16, 2013, 107 pages.	<input type="checkbox"/>
2	Decision on Petition in Reexamination Control No. 95/000,659 issued August 19, 2013, 3 pages.	<input type="checkbox"/>
3	Response to Non-Final Office Action in Reexamination Control No. 95/000,659 mailed October 2, 2013 including Exhibits A-C, 37 pages.	<input type="checkbox"/>
4	Decision on Petition in Reexamination Control No. 95/000,660 issued July 30, 2013, 12 pages.	<input type="checkbox"/>
5	Non-Final Office Action in Inter Partes Reexamination Control No. 95/000,660 issued August 30, 2013, 23 pages.	<input type="checkbox"/>

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	13911324
Filing Date	2013-06-06
First Named Inventor	Edward Balassanian
Art Unit	2454
Examiner Name	CHANG, JUNGWON
Attorney Docket Number	6743-00105

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Dean M. Munyon/	Date (YYYY-MM-DD)	2013-11-25
Name/Print	Dean M. Munyon	Registration Number	42914

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	13911324
Filing Date:	06-Jun-2013
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Filer:	Dean M. Munyon/Danielle Kramer
Attorney Docket Number:	6743-00105

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	17494626
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon/Danielle Kramer
Filer Authorized By:	Dean M. Munyon
Attorney Docket Number:	6743-00105
Receipt Date:	25-NOV-2013
Filing Date:	06-JUN-2013
Time Stamp:	15:05:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$180
RAM confirmation Number	1802
Deposit Account	501505
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /zip (if appl.)	Pages (if appl.)

1	Non Patent Literature	N1_95000659_Non-Final-Action-8-16-13.pdf	4893659 02faec67ef2736a5e1b6cd809c4aa4d31a3f8a28	no	107
Warnings:					
Information:					
2	Non Patent Literature	N2_95000659_Petition-decision-8-19-13.pdf	103921 c1bbb8d23f1e7c7db8c8f49c107c7192830e1b8	no	3
Warnings:					
Information:					
3	Non Patent Literature	N3_95000659_Response-after-non-final-action_10-2-13.pdf	2762410 592137c2ab7dc171f23a03f782028c8370512bdd	no	37
Warnings:					
Information:					
4	Non Patent Literature	N4_95000660_Petition-decision-7-30-13.pdf	594074 4ea5449d2ed9fe7dd17ec08ee19061a175afdeb1	no	12
Warnings:					
Information:					
5	Non Patent Literature	N5_95000660_Non-Final-Action-8-30-13.pdf	838003 54d64b2135c4d0e0af28d2bc5cb88d608436356a	no	23
Warnings:					
Information:					
6	Information Disclosure Statement (IDS) Form (SB08)	6743-00105_IDS_.pdf	611825 74b6f11e4526d5681bd17557f9237e74dede928f	no	4
Warnings:					
Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
7	Fee Worksheet (SB06)	fee-info.pdf	30587 a3d441527560aba8b87e6785f6c2c683af46c37e	no	2
Warnings:					
Information:					
Total Files Size (in bytes):				9834479	

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/911,324	06/06/2013	Edward Balassanian	6743-00105	4969
35690	7590	12/06/2013	EXAMINER	
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. P.O. BOX 398 AUSTIN, TX 78767-0398			CHANG, JUNGWON	
			ART UNIT	PAPER NUMBER
			2454	
			NOTIFICATION DATE	DELIVERY MODE
			12/06/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent_docketing@intprop.com
ptomhkg@gmail.com

Applicant-Initiated Interview Summary	Application No. 13/911,324	Applicant(s) BALASSANIAN, EDWARD	
	Examiner JUNGWON CHANG	Art Unit 2454	

All participants (applicant, applicant's representative, PTO personnel):

- (1) JUNGWON CHANG. (3) Edward Balassanian (applicant).
(2) Dean M. Munyon, Reg. No. 42,914. (4) _____.

Date of Interview: 20 November 2013.

Type: Telephonic Video Conference
 Personal [copy given to: applicant applicant's representative]

Exhibit shown or demonstration conducted: Yes No.
If Yes, brief description: _____.

Issues Discussed 101 112 102 103 Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 26.

Identification of prior art discussed: Amir, Engel, Taylor.

Substance of Interview

(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed how the present application is distinguished from the references, especially "create, based on an identification of information in a packet of a message, a path that includes a sequence of routines for processing packets in the message". Further discussed possible amendments to claim 26 to place the application in condition for allowance. In addition, Applicant and applicant's representative agreed to file a terminal disclaimer to overcome the double patenting rejection.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Attachment

/JUNGWON CHANG/
Primary Examiner, Art Unit 2454

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Edward Balassanian
Serial Number: 13/911,324
Filing Date: June 6, 2013
Title: METHOD AND SYSTEM FOR
DATA DEMULTIPLEXING

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Atty.Dkt.No.: 6743-00105
Examiner: Chang, Jungwon
Group/Art Unit: 2454
Conf. No. 4969

****CERTIFICATE OF E-FILING TRANSMISSION****	
I hereby certify that this correspondence is being transmitted via electronic filing to the United States Patent and Trademark Office on the date shown below:	
On: <u>December 19, 2013</u>	<u>/Dean M. Munyon/</u>
Date	Dean M. Munyon, # 42,914

RESPONSE TO OFFICE ACTION MAILED SEPTEMBER 19, 2013

This paper is submitted in response to an Office Action of September 19, 2013, to further highlight why the application is in condition for allowance.

Please amend the case as listed below.

IN THE CLAIMS:

The following is a current listing of claims and will replace all prior versions and listings of claims in the application. Please amend the claims as follows:

1-25. (Canceled)

26. (Currently Amended) A[[n]] first apparatus for receiving data from a second apparatus, the first apparatus comprising:

a processing unit; and

a memory storing instructions executable by the processing unit to:

create, based on an identification of information in a received packet of a message, a path that includes [[a]] one or more data structures that indicate a sequence of routines for processing packets in the message; [[and]]

store the created path; and

process subsequent packets in the message using the sequence of routines indicated in the ~~created~~ stored path, wherein the sequence includes a routine that is used to execute a Transmission Control Protocol (TCP) to convert one or more packets having a TCP format into a different format.

27. (Currently Amended) The first apparatus of claim 26, wherein the sequence includes:

a second routine that is used to execute a second, different protocol to convert packets of the different format into another format; and

a third routine that is used to execute a third, different protocol to further convert the packets.

28. (Currently Amended) The first apparatus of claim 27, wherein the second protocol is an Internet Protocol (IP) and the third protocol is an Ethernet Protocol.

29. (Currently Amended) The first apparatus of claim 26, wherein the one or more data structures further indicate sessions corresponding to respective ones of the sequence of routines
~~memory stores instructions executable by the processing unit to maintain state information~~

~~associated with one or more routines in the sequence of routines, and wherein the state information is specific to the message.~~

30. (Currently Amended) The first apparatus of claim 26, wherein the sequence of routines includes a routine that is executable to process the packets without converting a format of the packets.

31. (Currently Amended) The first apparatus of claim 26, wherein the routine is not executable to convert packets having the different format, and wherein the different format is an Internet Protocol (IP) format.

32. (Currently Amended) The first apparatus of claim 26, wherein the memory stores instructions executable by the processing unit to identify an address associated with the information, wherein the address indicates the routines in the sequence of routines of the created path.

33. (Currently Amended) A non-transitory, computer-readable medium comprising software instructions for processing a message, wherein the software instructions, when executed, cause a computer system to:

obtain information from a ~~an~~ initial particular packet of the message, wherein the particular packet has been received by the computer system;

use the obtained information to identify an address specifying ~~comprising~~ a list of conversion routines;

create a path that includes one or more data structures that specify a sequence of sessions, wherein sessions in the sequence ~~include~~ correspond to respective ones of the conversion routines in the list;

store the created path; and

process subsequent packets of the message using ~~by routing packets through~~ sessions specified in the created path, including:

a session associated with ~~in which~~ a transport layer protocol that is executed to convert one or more packets in a transport layer format into a different format; and

another session associated with ~~in which~~ a different protocol that is executed, wherein the different protocol corresponds ~~corresponding~~ to the different format ~~is executed~~.

34. (Currently Amended) The medium of claim 33, wherein one or more of the sessions ~~comprises~~ specify state information for one or more of the conversion routines, and wherein the state information is specific to the message.

35. (Currently Amended) The medium of claim ~~[[33]]~~34, wherein the different protocol is associated with a layer selected from the group consisting of an application layer and a network layer.

36. (Canceled)

37. (Previously Presented) The medium of claim 33, wherein the transport layer protocol is a Transmission Control Protocol (TCP).

38. (Previously Presented) The medium of claim 37, wherein the message comprises a stream of data.

39. (Currently Amended) The medium of claim 33, wherein using the obtained information to identify the address includes determining a plurality of protocols by analyzing headers of the ~~initial particular~~ packet, and wherein the medium includes software instructions executable to determine plurality of protocols includes protocols executable at the transport layer and at an application layer.

40. (Canceled)

41. (Currently Amended) A[[n]] first apparatus configured to receive data from a second apparatus, the first apparatus comprising:

a processing unit; and

memory storing instructions that are executable by the processing unit to:

obtain and analyze information from a received packet of a message;

identify an address based on the obtained information, wherein the address ~~comprises~~ references a list of routines;

create one or more data structures that indicate state information ~~a sequence of sessions, wherein sessions in the sequence are associated with~~ corresponding to ~~respective ones of the routines in the list; [[and]]~~

store the one or more data structures; and

process subsequent packets of the message using the state information ~~sequence, including state information that corresponds to~~ ~~wherein one of the sessions in the sequence is associated with~~ a particular routine that is used to execute a protocol to convert [[the]] packets from an input format to an output format, wherein the particular routine is not executable to convert packets having the output format.

42. (Currently Amended) The first apparatus of claim 41, wherein the state information used to process subsequent packets of the message includes state information that corresponds to a different session ~~is associated with~~ a different routine that is used to execute a second, different protocol to convert [[the]] packets from the output format to a different output format, and wherein the state information used to process subsequent packets of the message includes state information that corresponds to another session ~~is associated with~~ another routine that is used to execute a third, different protocol associated with ~~corresponding to~~ the different output format.

43. (Currently Amended) The first apparatus of claim 42, wherein the protocols include a Transmission Control Protocol (TCP), an Internet Protocol (IP), and an Ethernet Protocol.

44. (Currently Amended) The first apparatus of claim 41, wherein at least one of the ~~sessions~~ ~~is associated with~~ a routines in the list ~~that~~ is executable to process packets of the message without converting a format of the packets.

45. (Currently Amended) The first apparatus of claim 41, wherein the particular routine is executable to convert packets by removing an outermost header of the packets.

46. (Currently Amended) The first apparatus of claim 41, wherein the protocol is a transport layer protocol.

47. (Currently Amended) The first apparatus of claim 46, wherein the transport layer protocol is a Transmission Control Protocol (TCP), and wherein the message comprises a stream of data.

48. (Currently Amended) The first apparatus of claim 41, wherein the obtained information includes information from headers of the received packet that are associated with a network layer and a transport layer.

49. (Canceled)

50. (Currently Amended) A non-transitory, computer-readable medium comprising program instructions executable by a computer system to:

identify information from different headers associated with various layers of a received packet of a message;

create, using the identified information, one or more data structures that reference a sequence of sessions of routines; [[and]]

store the one or more data structures; and

process subsequent packets of the message using the sequence of routines referenced by the one or more data structures, including by removing an outermost header of a given packet using a first routine session corresponding to a protocol in a first layer and by removing the resulting outermost header using a second routine session corresponding to a different protocol in a different layer.

51. (Previously Presented) The medium of claim 50, wherein the protocol in the first layer is a Transmission Control Protocol (TCP), and the message comprises a stream of data.

52. (Previously Presented) The medium of claim 50, wherein the protocol in the first layer is a transport layer protocol and the different protocol in the different layer is an application layer protocol.

53. (Currently Amended) The medium of claim 50, wherein processing subsequent packets of the message further includes ~~removing the resulting outermost header~~ using a third routine session corresponding to another protocol in another layer to remove the outermost header resulting from use of the second routine, and wherein the layers include a network layer, a transport layer, and an application layer.

54. (Currently Amended) The medium of claim 50, wherein at least one of the sequence of routines ~~associated with at least one of sessions~~ is not used to remove a header of the packets.

55. (Previously Presented) The medium of claim 50, wherein the outermost header has a format that is incompatible with a format of the resulting outermost header, and wherein the outermost header is associated with a network layer protocol.

56. (New) The first apparatus of claim 29, wherein the sessions specify state information for one or more of the sequence of routines, and wherein the state information is specific to the message.

57. (New) The first apparatus of claim 32, wherein the memory stores instructions executable by the processing unit to use the address to select the sequence of routines from a plurality of sequences of routines that are stored by the first apparatus prior to receiving the packet of the message.

58. (New) The medium of claim 50, wherein the one or more data structures further reference state information for one or more of the routines in the sequence of routines.

REMARKS:

Claims 26-55 were pending in the application. Claims 26-35, 39, 41-48, 50, 53, and 54 have been amended. Claims 36, 40, and 49 have been canceled, and claims 56-58 have been added. Claims 26-35, 37-39, 41-48, and 50-58 thus remain pending in this application.

Examiner Interview

The undersigned practitioner, the inventor, and the Examiner conducted an in-person at the Patent Office on November 20, 2013. Applicant agrees with the characterization of the interview provided in the Interview Summary mailed on December 6, 2013. After the Examiner agreed with Applicant's arguments that the claims as currently pending distinguished over the references, the interview turned to possible changes to the claims that the Examiner believed would place the case in condition for allowance. In particular, the Examiner requested three types of amendments to claim 26: 1) an indication that the apparatus of claim 26 has the ability to receive data;¹ 2) a reference to "one or more data structures" (e.g., the "path" as including "one or more data structures"); and 3) a reference to "process[ing] **subsequent** packets in the message using the sequence of routines indicated in the stored path."² Similar changes were also requested with respect to the three remaining independent claims.

Applicant has made the requested amendments to claim 26, and has also amended the other independent claims in a similar fashion. Applicant has also made additional amendments that vary the language found in the independent claims, as well as amendments that broaden these claims. Applicant submits that none of these amendments were necessary to distinguish over the cited references.

¹ This amendment is not intended to foreclose other possible functionality of the "first apparatus"—for example, the ability to also transmit data.

² The undersigned noted during the interview that the apparatus of claim 26, in addition to processing "subsequent" packets in the message "using the sequence of routines indicated in the stored path," was also capable of processing the packet of the message on which the "identification of information" was based. Applicant agreed to inclusion of the "subsequent" limitation in the claims as part of a process of negotiation with the Examiner to facilitate allowance.

Claim Language

Applicant offers the following remarks regarding various terms appearing in the claims as currently amended. First, the term “path” is not to be limited to specific embodiments disclosed in the specification—for example, the specific embodiment of a path that is disclosed in paragraph [0029] with reference to Fig. 5. Instead, the term “path” is intended to be construed more broadly; currently amended independent claims 26 and 33 identify specific properties of the “paths” variously recited in those claims.

Second, the term “data structure” is to be construed broadly according to its ordinary meaning in the art. Under this ordinary meaning, “creation” of a “data structure” is broad enough to include allocating memory in a computing system that is usable to store data according to a specified organization. Applicant’s specification at paragraph [0029] provides one such non-limiting example of a data structure.

Third, the terms “indicate,” “specify,” and “reference” are to be interpreted broadly. A data structure, for example, might “indicate,” “specify,” or “reference” a routine in various ways. In one non-limiting example, the data structure might indicate, specify, or reference a routine by actually including the routine. In another non-limiting example, a data structure might indicate, specify, or reference a routine by pointing to or otherwise identifying the routine without bodily including it in the data structure. As another non-limiting example, an address might be said to “indicate,” “specify,” or “reference” a list of routines by providing an index to an entry within a lookup table that identifies the list. The terms “indicate,” “specify,” and “reference” are intended to cover at least these examples, as well as other embodiments.

Finally, references in the claim to “storing” a path or “storing” one or more data structures does not connote any particular medium on which the storing occurs. Rather, the “storing” limitations merely indicate that the created path or created data structures are retained long enough in order to “process subsequent packets.”

Double Patenting Rejections

The Examiner rejected claims 26-55 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-44 of U.S. Patent No. 6,629,163. Without acceding to the propriety of the rejection, Applicant filed an electronic terminal disclaimer on November 20, 2013. This terminal disclaimer was approved the same day. Accordingly, these rejections are believed to be moot.

Obviousness Rejections

The Examiner rejected claims 26-55 under pre-AIA 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,711,166 to Amir et al. in view of U.S. Patent No. 6,785,730 to Taylor. The Examiner also rejected claims 33-55 under pre-AIA 35 U.S.C. § 103 as being unpatentable over Amir in view of U.S. Patent No. 6,115,393 to Engel et al. As noted in the Interview Summary, the Examiner agreed that the previously pending claims distinguished over Amir, and thus overcame both obviousness rejections set forth in the Office Action. The Examiner has also agreed that each of the presently amended independent claims distinguish over the art of record. Accordingly, these rejections are believed to be overcome for at least the reasons stated in the Examiner's Interview Summary.

CONCLUSION:

Applicant respectfully submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above-referenced application from becoming abandoned, Applicant hereby petitions for such extension.

The Commissioner is authorized to charge any fees that may be required, or credit any overpayment, to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 501505/6743-00105/DMM.

Respectfully submitted,

Date: December 19, 2013

By: /Dean M. Munyon/
Dean M. Munyon
Reg. No. 42,914

Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.
P. O. Box 398
Austin, Texas 78767
(512) 853-8847

Electronic Acknowledgement Receipt

EFS ID:	17712257
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon/Deena Beasley
Filer Authorized By:	Dean M. Munyon
Attorney Docket Number:	6743-00105
Receipt Date:	19-DEC-2013
Filing Date:	06-JUN-2013
Time Stamp:	15:29:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response_to_Office_Action_09_19_13.pdf	103136 888e28b8947cff824597b5fef579fbd27f2666b8	yes	13

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Amendment/Req. Reconsideration-After Non-Final Reject		1	1
Claims		2	9
Applicant Arguments/Remarks Made in an Amendment		10	13

Warnings:

Information:

Total Files Size (in bytes):	103136
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/911,324	Filing Date 06/06/2013	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	12/19/2013	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		
		* 30	Minus	** 30	= 0	X \$80 = 0
		* 4	Minus	***4	= 0	X \$420 = 0
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		
		*	Minus	**	=	X \$ =
		*	Minus	***	=	X \$ =
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
 /JACQUELYN WILLIAMS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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NOTICE OF ALLOWANCE AND FEE(S) DUE

35690 7590 02/12/2014
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

Table with 2 columns: EXAMINER (CHANG, JUNGWON), ART UNIT (2454), PAPER NUMBER

DATE MAILED: 02/12/2014

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

TITLE OF INVENTION: METHOD AND SYSTEM FOR DATA DEMULTIPLEXING

Table with 7 columns: APPLN. TYPE, ENTITY STATUS, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies. If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above. If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)". For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

35690 7590 02/12/2014
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/911,324	06/06/2013	Edward Balassanian	6743-00105	4969

TITLE OF INVENTION: METHOD AND SYSTEM FOR DATA DEMULTIPLEXING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	05/12/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHANG, JUNGWON	2454	709-246000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.</p>	<p>2. For printing on the patent front page, list</p> <p>(1) The names of up to 3 registered patent attorneys or agents OR, alternatively, _____ 1</p> <p>(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ 2</p> <p>_____ 3</p>
---	---

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____ (B) RESIDENCE: (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent) : Individual Corporation or other private group entity Government

<p>4a. The following fee(s) are submitted:</p> <p><input type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)</p> <p><input type="checkbox"/> A check is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).</p>
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5. **Change in Entity Status** (from status indicated above)

Applicant certifying micro entity status. See 37 CFR 1.29

Applicant asserting small entity status. See 37 CFR 1.27

Applicant changing to regular undiscouted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
13/911,324 06/06/2013 Edward Balassanian 6743-00105 4969

35690 7590 02/12/2014
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

Table with 1 column: EXAMINER
CHANG, JUNGWON

Table with 2 columns: ART UNIT, PAPER NUMBER
2454

DATE MAILED: 02/12/2014

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 13/911,324	Applicant(s) BALASSANIAN, EDWARD	
	Examiner JUNGWON CHANG	Art Unit 2454	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to amendment filed 12/19/2013 & terminal disclaimer filed 11/20/2013.
 A declaration(s)/affidavit(s) under 37 CFR 1.130(b) was/were filed on _____.
2. An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. The allowed claim(s) is/are 26-35,37-39,41-48 and 50-58, renumbered as 1-30. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) All b) Some *c) None of the:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Examiner's Amendment/Comment |
| 2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>11/25/2013</u> | 6. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. <input type="checkbox"/> Other _____. |
| 4. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. | |

/JUNGWON CHANG/
Primary Examiner, Art Unit 2454

Continuation of Item 1. This communication is responsive to :

Index of Claims 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	09/17/2013	01/27/2014						
	1	-	-						
	2	-	-						
	3	-	-						
	4	-	-						
	5	-	-						
	6	-	-						
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8	32	✓	=						
10	33	✓	=						
11	34	✓	=						
12	35	✓	=						
	36	✓	-						

Index of Claims 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	09/17/2013	01/27/2014						
13	37	✓	=						
14	38	✓	=						
15	39	✓	=						
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27	53	✓	=						
28	54	✓	=						
29	55	✓	=						
5	56		=						
9	57		=						
30	58		=						

Search Notes 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	230, 228	9/17/2013	JWC
370	395.1, 469, 231	9/17/2013	JWC
379	207.02, 229	9/17/2013	JWC
710	33	9/17/2013	JWC
709	246	1/27/2014	JWC
709	238	1/27/2014	JWC
370	466	1/27/2014	JWC

SEARCH NOTES		
Search Notes	Date	Examiner
EAST search report attached	9/17/2013	JWC
Inventor name searched	9/17/2013	JWC
East Google ACM search report attached	1/27/2014	JWC
Inventor name searched	1/27/2014	JWC
Parent patent applications searched	1/27/2014	JWC

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
709	227, 238, 246, 231	1/27/2014	JWC
370	466	1/27/2014	JWC

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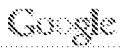
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BIB DATA SHEET

CONFIRMATION NO. 4969

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
13/911,324	06/06/2013	709	2454	6743-00105		
APPLICANTS IMPLICIT NETWORKS, INC., Bellevue, WA, Assignee (with 37 CFR 1.172 Interest);						
INVENTORS Edward Balassanian, Seattle, WA;						
** CONTINUING DATA ***** This application is a CON of 13/236,090 09/19/2011 ABN which is a CON of 10/636,314 08/06/2003 PAT 8055786 which is a CON of 09/474,664 12/29/1999 PAT 6629163						
** FOREIGN APPLICATIONS *****						
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 06/26/2013						
Foreign Priority claimed 35 USC 119(a-d) conditions met Verified and Acknowledged	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No /JUNGWON CHANG/ Examiner's Signature	<input type="checkbox"/> Met after Allowance Initials	STATE OR COUNTRY WA	SHEETS DRAWINGS 16	TOTAL CLAIMS 30	INDEPENDENT CLAIMS 4
ADDRESS MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. P.O. BOX 398 AUSTIN, TX 78767-0398 UNITED STATES						
TITLE METHOD AND SYSTEM FOR DATA DEMULTIPLEXING						
FILING FEE RECEIVED 3120	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other <input type="checkbox"/> Credit		



"packet" convert "stack" identified path

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java: convert package name to path? - Stack Overflow
stackoverflow.com/.../java-convert-package-name-to-p...
Dec 17, 2009 - package de.xyz; class PathForClass { public static void main (String ...
Newbie on modifying system default package to a named package.
You've visited this page 2 times. Last visit: 1/27/14

"Conversion to Dalvik format failed with error 1" on ... - Stack Overflow
stackoverflow.com/.../conversion-to-dalvik-format-falle...
Go to Project > Properties > Java Build Path > Libraries and remove all ...
Suppose you have a package com.abc.xyz and a class named A.java inside this ...

Packet processing - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Packet_processing
In digital communications networks, packet processing refers to the wide variety of ...
that manages the traversal of the multi-layered network or protocol stack from the ...
lower, physical ... Check to see if there is any route to the destination network ...
For example, in voice and video applications, the necessary conversion from ...

Multiprotocol Label Switching - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Multiprotocol_Label_Switching
The labels identify virtual links (paths) between distant nodes rather than endpoints.
... If the popped label was the last on the label stack, the packet "leaves" the ...

RFC 3032 - MPLS Label Stack Encoding
tools.ietf.org/search/rfc3032
by D Farinacci - 2001 - Related articles
In order to transmit a labeled packet on a particular data link, an LSR must ...
14.3.6 Implications with respect to Path MTU Discovery ... the stack must therefore be able to
identify the packet's network layer protocol ... If the IP datagram does NOT have
the "Don't Fragment" bit set in its IP header, a convert it into fragments, ...


Linux IP Networking: A Guide to the Implementation and ...
www.cs.unh.edu/cnrg/.../linux-net.html
A Guide to the Implementation and Modification of the Linux Protocol Stack ...
The location of the original unmodified document be identified. ... Applications read from
and write to BSD sockets; the BSD sockets translate the operations into INET ...
The routing cache is a hash table that IP uses to actually route packets.

How Does the Internet Work? - The Shulers Home
www.theshulers.com/whitepapers/internet.../index.html?utm_source...
Internet Addresses; Protocol Stacks and Packets; Networking infrastructure,
Internet ... (Internet Control Message Protocol) echo request message) to the named
computer. ... Hardware Layer, Converts binary packet data to network signals and
back. ... If we were to follow the path that the message "Hello computer 5.6.7.8"

Lua 5.1 Reference Manual
www.lua.org/manual/5.1/manual.html
For complete control over how numbers are converted to strings, use the format ...
Pushes onto the stack a string identifying the current position of the control at ...
Lua initializes the C path package cpath in the same way it initializes the Lua ...

NAT64 Technology: Connecting IPv6 and IPv4 Networks [Enterprise ...
www.cisco.com/.../white_paper_011-676278.html
Dual stack is a transition technology in which IPv4 and IPv6 operate in tandem over
shared or dedicated links. ... IPv4-converted IPv6 addresses ... This requirement is
identified as scenarios 1 and 5 in RFC 6144 discussed ... After NAT64 translation, the
translated IPv4 packet is forwarded by the usual IPv4 route lookup. 10.


PDF: MPLS for Dummies - Nanog
www.nanog.org/meetings/nanog49/presentations/.../mpls-nanog49.pdf
trie, which required many memory accesses just to route a single packet. ... Exact
matches were ... MPLS labels can also be stacked multiple times. ... The top label
is ... Easier to implement (just turn the knob on your router, it's free). 28 ... The best
path calculation happens on-demand when a failure is detected ... It can take ...

Issue Classification 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

CPC			Type	Version
Symbol				


CPC Combination Sets				
Symbol	Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
		30	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/JUNGWON CHANG/ Primary Examiner. Art Unit 2454	01/27/2014	1	15
(Primary Examiner)	(Date)		

Issue Classification 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

US ORIGINAL CLASSIFICATION					INTERNATIONAL CLASSIFICATION									
CLASS		SUBCLASS			CLAIMED					NON-CLAIMED				
709		246			G	0	6	F	15 / 16 (2006.01.01)					
CROSS REFERENCE(S)														
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)													
709	238													
370	466													

NONE		Total Claims Allowed:	
		30	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/JUNGWON CHANG/ Primary Examiner. Art Unit 2454	01/27/2014	1	15
(Primary Examiner)	(Date)		

Issue Classification 	Application/Control No. 13911324	Applicant(s)/Patent Under Reexamination BALASSANIAN, EDWARD
	Examiner JUNGWON CHANG	Art Unit 2454

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input checked="" type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47									
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
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NONE		Total Claims Allowed:	
		30	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/JUNGWON CHANG/ Primary Examiner. Art Unit 2454	01/27/2014	1	15
(Primary Examiner)	(Date)		



"packet" stored "sequence of routines" protocol "conversion" identify

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About 4,026,000 results (0.58 seconds)

Method and system for data demultiplexing - internet FAQ Archives

www.faq.org/patents/app/20130266025
Oct 10, 2013 - A method and system for demultiplexing packets of a message is provided ... is used to execute a second, different protocol to convert packets of the different format ... The apparatus of claim 26, wherein the sequence of routines includes a ... The conversion system stores the identified sequence so that the ...

Patent: EP1177514A1 - Method and system for generating a ...

www.google.com/patents/EP1177514A1
Feb 8, 2002 - When identifying a sequence of routines, the system may check for ... The method of claim 1 including storing an indication of the identified sequence of routines in a ... For example, a protocol may have edges that each convert data in ... During the process, the packet of data is sequentially converted to ...

Brevetto US5377191 - Network communication system - Google ...

www.google.it/patents/US5377191
wherein said specific routines convert between the format and protocols of the ... task to cause a notification routine identified by stored job data to be executed ... the X25 packet switched message transfer protocol (although each gateway ... they appear to illustrate a conventional sequence of routines which could be ...

Document 93 :: Implicit Networks, Inc. v. F5 Networks, Inc., 3 ... - ju ...

law.justia.com/cases/federal/district-courts/california/candoe/3.../93
Feb 29, 2012 - A sequence of conversion routines that was not identified in or determinable ... that the 20 sequence of routines cannot be identified or "determinable from ... and "format" are used interchangeably to refer to the output of a protocol ... the previous packet of the message"); 1:54-56 ("storing state information ...

Scott W. Bradley | LinkedIn

www.linkedin.com/in/scottwb69
Greater Seattle Area - Founder and Principal Engineer at Facet Digital, LLC
While I do find great success at leading teams and taking wide responsibility for a product ... ranging from device drivers, network protocols, and a custom schedulers, ... beginning with building a tool for automatically converting legacy WAIS and ...
When identifying a sequence of routines, the system may check for routines ...

PDF) Method and system for generating a mapping between types of d ...

patentimages.storage.googleapis.com/pdfs/US7730211.pdf
by El Bataineh - 2010 - Cited by 1 - Related articles
Jun 1, 2010 - converting data in one type into data in another type. In one, (22) Filed: (yet-31 ... When identifying a sequence of routines, the system may, (60) Provisional ... routines which are stored at the receiving computer system. A ... Search protocols for addresses that ... Add packet to TCP message, TCP message.

Mark Edwin Hurd

members.ozemail.com.au/~markhurd/resume.html
Using the Dynamic Data Exchange (DDE) protocol, all of these products make it easy for the ... These working papers can be in any Windows spreadsheet package that ... The client was continually consulted, and kept informed, throughout this process. The tools could be used to determine the call sequence of routines ...

Patent WO2002084947A2 - Method and system for transmission ...

www.google.co.uk/patents/WO2002084947A2
The proxy/billing server stores the raw billing data and an accounting program ... such as GPPs, carriers are able to identify a total number of physical packets or the amount of ... The calling sequence of routines within application 210 is shown ... The Protocol Manager 500 performs protocol conversion of the messages ...

PDF) View

https://darchive.mblwholibrary.org/bitstream/handle/WHOI-92...? 1
by Ad Pleschmann - 1992 - Cited by 5 - Related articles
of the ADCM. The communication protocol, the data stream, and the sample ... regulator was chosen for its high conversion efficiency and small size (low ... calls a sequence of routines that perform several processing steps along with error ... arrays. Under normal conditions 8 ensembles will have been unpacked and stored.

User's Guide to PSC Stack Software Revision: 1.1.1. Introduction ...

borkhuis.home.xs4all.nl/vxworks/tp/vxhacks/psc_stack/README
The function fd_get_value() will return the value stored in the file descriptor. ... BSD Unix sleep/wakeup mechanism is converted to use semaphore in VxWorks ... 2.2 TCP and IP protocols Most of the TCP and IP software is preserved in their ... a sequence of routines that are used to establish initial runtime conditions, similar ...

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Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13911324
	Filing Date	2013-06-06
	First Named Inventor	Edward Balassanian
	Art Unit	2454
	Examiner Name	CHANG, JUNGWON
	Attorney Docket Number	6743-00105

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13911324
	Filing Date	2013-06-06
	First Named Inventor	Edward Balassanian
	Art Unit	2454
	Examiner Name	CHANG, JUNGWON
	Attorney Docket Number	6743-00105

1	Non-Final Office Action in Inter Partes Reexamination Control No. 95/000,659 issued August 16, 2013, 107 pages.	<input type="checkbox"/>
2	Decision on Petition in Reexamination Control No. 95/000,659 issued August 19, 2013, 3 pages.	<input type="checkbox"/>
3	Response to Non-Final Office Action in Reexamination Control No. 95/000,659 mailed October 2, 2013 including Exhibits A-C, 37 pages.	<input type="checkbox"/>
4	Decision on Petition in Reexamination Control No. 95/000,660 issued July 30, 2013, 12 pages.	<input type="checkbox"/>
5	Non-Final Office Action in Inter Partes Reexamination Control No. 95/000,660 issued August 30, 2013, 23 pages.	<input type="checkbox"/>

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

EXAMINER SIGNATURE

Examiner Signature	/Jungwon Chang/	Date Considered	01/27/2014
--------------------	-----------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	13911324
Filing Date	2013-06-06
First Named Inventor	Edward Balassanian
Art Unit	2454
Examiner Name	CHANG, JUNGWON
Attorney Docket Number	6743-00105

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Dean M. Munyon/	Date (YYYY-MM-DD)	2013-11-25
Name/Print	Dean M. Munyon	Registration Number	42914

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Searching for: ("packet "stored "sequence" and "routines" and "protocol" and "conversion" and "identify") ([start a new search](#))

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 in expanded form1 [Increasing the portability and re-usability of protocol code](#)

[Bobby Krueczak](#), [Kenneth L. Calvert](#), [Mostafa H. Ammar](#)

August 1997

IEEE/ ACM Transactions on Networking (TON) , Volume 5 Issue 4

Publisher: IEEE Press

Full text available: [Pdf](#) (283.64 KB)

Bibliometrics: Downloads (6 Weeks): 4, Downloads (12 Months): 15, Downloads (Overall): 370, Citation Count: 1

Keywords: portability, protocol deployment, protocol implementation, protocol subsystem

2 [The Kerberos Network Authentication Service \(V5\)](#)

[J. Kohl](#), [C. Neuman](#)

September 1993

The Kerberos Network Authentication Service (V5)

Publisher: RFC Editor

Full text available: [Text](#) (275.40 KB)

Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 8, Downloads (Overall): 157, Citation Count: 10

This document gives an overview and specification of Version 5 of the protocol for the Kerberos network authentication system. Version 4, described elsewhere [1,2], is presently in production use at MIT's Project Athena, and at other Internet sites.

3 [Fast detection of communication patterns in distributed executions](#)

[Thomas Kunz](#), [Michiel F. H. Seuren](#)

November 1997 **CASCON '97**: Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research

Publisher: IBM Press

Full text available: [Pdf](#) (4.21 MB)

Bibliometrics: Downloads (6 Weeks): 13, Downloads (12 Months): 180, Downloads (Overall): 7274, Citation Count: 1

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event ...

4 [FYI on a Network Management Tool Catalog: Tools for Monitoring and Debugging TCP/IP Internets and Interconnected Devices](#)

[B. Enger](#), [J. Reynolds](#)

June 1993 FYI on a Network Management Tool Catalog: Tools for Monitoring and Debugging TCP/IP Internets and Interconnected Devices

Publisher: RFC Editor

Full text available: [Text](#) (308.53 KB)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 2, Downloads (Overall): 124, Citation Count: 1

The goal of this FYI memo is to provide an update to FYI 2, RFC 1147 [1], which provided practical information to site administrators and network managers. New and/or updated tools are listed in this RFC. Additional descriptions are welcome, and should ...

5 [Addressing and the future of communications competition: lessons from telephony and the Internet](#)

[Ashley Audeen](#), [John Leslie King](#)

January 1998

Information Polity , Volume 6 Issue 1

Publisher: IOS Press

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count


6 [HEMS monitoring and control language](#)

[G. Trewitt, G. Farbridge](#)

November 1988

HEMS monitoring and control language

Publisher: RFC Editor

Full text available:  [Pdf](#) (96.42 KB)

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 0, Downloads (Overall): 4, Citation Count: 0


7 [Request For Comments reference guide](#)

[J. K. Reynolds, J. Postel](#)

August 1987

Request For Comments reference guide

Publisher: RFC Editor

Full text available:  [Pdf](#) (315.32 KB)

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 2, Downloads (Overall): 60, Citation Count:


8 [Implementation guide for the ISO Transport Protocol](#)

[W. McCoy](#)

June 1987

Implementation guide for the ISO Transport Protocol





Publisher: RFC Editor

Full text available:  [Pdf](#) (200.36 KB)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 1, Downloads (Overall): 30, Citation Count: 1

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"packet "stored "sequence of routines "protocol "conversion "identify

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PDF CPS C Programming guide - Integrated Communications Group ... www.icg-corp.com/docs/CPS_C_prog_guide_v60.pdf ... Network information, for example, Dialed Number Identification Service ... protocol used between the call processing client and server. ... threads package. ... To set up a monitor channel, you use the following sequence of routines: 1. ... The data is stored by the switch and/or the call processing server, depending on.

PDF A New Algorithm for the Euclidean k-Bottleneck ... - Conferences.hu www.conferences.hu/mtns2010/proceedings/Papers/025_096.pdf ... by M Brazil - 2010 - Related articles topology of a network, thereby providing the routing protocol with spanning ... value below R. The energy consumption per packet is given, as in [13], by: E(r) = ra ...

Uncovering and Managing the Impact of Methodological Choices for ... www.dtic.mil/dtic/tr/fulltext/u2/a658970.pdf ... by J Oisener - 2012 - Cited by 3 - Related articles Also, the challenges identified for converting trained prediction models into ready to use ... entities, and even more so of relations, considered for PEX is often kept fairly small typically. ... The CRF project package contains various feature types. ... The sequence of routines described in this section is the ordering that led.

PDF Procedure - Adcole adcole.com/LiteratureRetrieve.aspx?ID=129476 ... Under the "Endpoints" tab, ensure "... default system protocols ... This will command the A/D chip to sample & hold and convert the analog DC level to an ... The sequence will measure the eccentric once and store its floating point data ... the arbor 1/8" above the bottom end, then follow the sequence of routines shown.

PDF NetView for AIX Programmer's Guide Version 4 - ibm.com ftp://ftp.software.ibm.com/publications/nvguide/sc316164.pdf ... IBM ... identifies commands and shell script paths (except in reference information) ... Because networks are no longer proprietary, standard protocols, which enable ... displayed in the event window and the number of traps that will be converted to ... NetView for AIX program in order to store and present information about non -IP.

Patent US6133867 - Integrated air traffic management and collision ... www.google.nl/patents/US6133867 ... spaced data packets and for storing craft identification indicia and for storing ... MIL-STD-1553 or comparable communications protocol, or a back-plane and ... Any commands are acted upon, and a sequence of routines to determine the ... it is understood that there are errors introduced in the projection (conversion) ...

PDF Full text - Manchester eScholar Services - The University of ... https://www.escholar.manchester.ac.uk/.../da ... University of Manchester ... 7.1.1 To identify the resources/capabilities/knowledge deriving from the NPD ... and the case study protocol is thus explicitly discussed. ... operations, such as branding, marketing, design and networks of retail stores both in ... through a sequence of routines, such as learning and knowledge management, to create.

PDF Fault Tolerant Communication Library and Applications - Innovati ... ic.uts.edu/news.../aacs/2003-ftmp-fagg.p ... University of Tennessee ... by GE Fagg - Cited by 37 - Related articles packets or choosing a different route, in case the Send and Receive ... The next layer deals with data conversion/marshaling. (if needed) ... two ways to determine this information. The first ... error handler has to call the same sequence of routines as ... multi-phase commit protocol between the processes, since FT-MPI is ...

PDF WATER AND FOOD SECURITY-ETHIOPIA TOOLBOX - ITC www.itc.nl/library/Papers_2012/.../WFS-E_Toolbox.pdf ... ITC, Enschede ... Sep 10, 2012 - Software package for learning and teaching remote sensing image ... File Transfer Protocol ... WFS-E-toolbox-1.0" available over there and store it in a temporary ... Make use of a text editor (using find and replace) to quickly change the ... 3.2.5 and study the sequence of routines which are executed as.

patentai - Google www.google.it/patents/US3984814 ... Google ... b. storing a plurality of error signal indications in said indicator storage means ... circuit, a phase encoding identification burst detector indicator circuit, and phase ... A pair of AND gates and amplifier circuits 105-29 and 105-28 convert the ... The last routine executed in this sequence of routines is PWED:N shown in FIG.

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"packet" convert "stack" identified path

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Page 2 of about 143,090,090 results (0.37 seconds)

PDF) Linux TCP/IP Stack

www.cs.odu.edu/~cs1/topipstack.ppt - Old Dominion University
TCP/IP Stack Overview. Process: 1. ascend ... **Convert** the internet protocol control block to a tcp ... assign unique **identifier** to ip_id length, offset ... If the **packet** is being routed, rtable locates a **route** to the address specified by dst. If rtable fails ...

MPLS Protocol Family - MPLS LLDP LCR LDP LRSVP-TE

www.protocols.com/pbook/mpls.htm
In MPLS, data transmission occurs on Label-Switched Paths (LSPs). ... is a set of procedures for augmenting network layer **packets** with "label **stacks**", thereby turning them into labeled **packets**. 32-bit value used to **identify** the message.

How to troubleshoot TCP/IP connectivity with Windows XP

support.microsoft.com/kb/314067 - Microsoft Corporation
Displays a **path** of a TCP/IP host and **packet** losses at each router along the way. ... start by using the Network Diagnostics tool to **identify** the source of the issue. ... If the loopback test fails, the IP **stack** is not responding. ... If IPSec is implemented locally, you can **turn** off the IPSEC Services service in the Services snap-in.

PDF) Package raster

cran.r-project.org/web/packages/raster/raster.pdf - R
by RJ Hijmans - 2013 - Cited by 7 - Related articles
Jan 20, 2014 - Type **Package** Title raster. Distance, neighborhood (foot) and **patch** functions. * Polygon, line and point to raster **conversion**. ... RasterLayer, **RasterStack**, and RasterErick objects are, as a group, referred to as Raster* objects. Raster* ... **Identify** cells that are adjacent to a set of cells on a raster area.

PDF) Chapter 2: Wireless IP Network Architectures

people.cs.nyu.edu/~jco/book/ch2-6in1.pdf
by JC Chen - 2004 - Related articles
2.1.11 **Packet-Switched Domain Protocol Stacks**. 2.1.12 Accessing ... Mobile Subscriber **Identification** Number. (MSRN), 3 digits ... switching, media **conversion**, payload processing (e.g. ... **route** to the SGSN that is currently serving a mobile and ...

Cygwin FAQ

cygwin.com/faq.html - Cygwin
How do I **convert** between Windows and UNIX **paths**? ... Why can't I cd into a shortcut to a **directory**? ... Why is the Cygwin **package** of XYZ so out of date? ... How can I adjust the heap/**stack** size of an application? ... These directories will have very weird looking names, being encoded with their URLs (named hp%3a%2f...).

Configuring Interface Characteristics - Cisco

www.cisco.com/en/US/docs/.../swint.html - Cisco Systems, Inc
Packets received on a port are forwarded only to ports that belong to the same VLAN ... with one another without a Layer 3 device to **route** traffic between the VLANs. For more information about the Cisco TwinGig **Converter** Module, see the ... You can use the switch port LEDs in **Stack** mode to **identify** the **stack** member ...

30.4. Bluetooth

www.freebsd.org/doc/handbook/network-bluetooth.html - FreeBSD
The Bluetooth **stack** in FreeBSD is implemented using the netgraph(4) framework ... ACL **packet** size: 192 bytes Number of ACL **packets**: 8 Max. For the purposes of RFCOMM, a complete communication **path** involves two applications ... and the ifcomm_pppd(8) wrapper which **converts** a RFCOMM Bluetooth connection ...

1 Data Encapsulation and the TCP/IP Protocol Stack (System ...

docs.oracle.com/od/E19455-01/806.../index.html - Oracle Corporation
The **packet** is the basic unit of information transferred across a network. ... As the **packet** travels through the TCP/IP protocol **stack**, the protocols at each layer ... layer on the sending host receives the frames and **converts** the IP addresses into ... Internet Layer reads information in the header to **identify** the transmission and ...

Convention Plugin - Apache Struts

struts.apache.org/release/2.1.x/.../convention-plugin.html - Apache Struts
This example will use an actionless result that is **identified** by the URL. ... This can be changed by setting the property struts.convention.result.**path** in ... The URL is based on the **package** name that the class is defined in and the class name itself. ... the end of the class name and then **converts** camel case names to dashes.

PART B - FEE(S) TRANSMITTAL

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/911,324	06/06/2013	Edward Balassanian	6743-00105	4969

TITLE OF INVENTION: METHOD AND SYSTEM FOR DATA DEMULTIPLEXING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	05/12/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHANG, JUNGWON	2454	709-246000

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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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(A) NAME OF ASSIGNEE: Implicit Networks, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY) Bellevue, WA

Please check the appropriate assignee category or categories (will not be printed on the patent): Individual Corporation or other private group entity Government

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NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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Authorized Signature /Dean M. Munyon/ Date February 19, 2014

Typed or printed name Dean M. Munyon Registration No. 42,914

Electronic Patent Application Fee Transmittal

Application Number:	13911324
Filing Date:	06-Jun-2013
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Filer:	Dean M. Munyon/Deena Beasley
Attorney Docket Number:	6743-00105

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

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Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	960	960

Extension-of-Time:

Juniper Ex. 1004-p. 307

Juniper v Implicit

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt

EFS ID:	18245190
Application Number:	13911324
International Application Number:	
Confirmation Number:	4969
Title of Invention:	METHOD AND SYSTEM FOR DATA DEMULTIPLEXING
First Named Inventor/Applicant Name:	Edward Balassanian
Customer Number:	35690
Filer:	Dean M. Munyon/Deena Beasley
Filer Authorized By:	Dean M. Munyon
Attorney Docket Number:	6743-00105
Receipt Date:	19-FEB-2014
Filing Date:	06-JUN-2013
Time Stamp:	17:34:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$960
RAM confirmation Number	4357
Deposit Account	501505
Authorized User	MUNYON, DEAN M.

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30262 417eed2652f042574f97e035623b264c7208dea	no	2
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National Stage of an International Application under 35 U.S.C. 371

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 1 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
Examiner Name		

U.S. PATENTS				
Examiner Initial	Cite No.	Patent Number	Name of Patentee Or Applicant Of Cited Document	Issue Date
	1	5,298,674	Yun	03/29/1994
	2	5,414,833	Hershey, et al	05/09/1995
	3	5,627,997	Pearson et al	05/06/1997
	4	5,761,651	Hasebe	06/02/1998
	5	5,826,027	Pedersen et al	10/20/1998
	6	5,835,726	Shwed et al	11/10/1998
	7	5,848,233	Radia et al	12/08/1998
	8	5,848,415	Guck	12/08/1998
	9	5,854,899	Callon et al	12/29/1998
	10	5,898,830	Wesinger, Jr. et al	04/27/1999
	11	6,091,725	Cheriton et al	07/18/2000
	12	6,104,500	Alam, et al	08/15/2000
	13	6,119,236	Shipley	09/12/2000
	14	6,141,749	Coss et al	10/31/2000
	15	6,226,267	Spinney, et al	05/01/2001
	16	6,243,667	Kerr et al	06/05/2001
	17	6,401,132	Bellwood et al	06/04/2002
	18	6,426,943	Spinney et al	07/30/2002
	19	6,519,636	Engel et al	02/11/2003
	20	6,598,034	Kloth	07/22/2003
	21	6,651,099	Dietz et al	11/18/2003
	22	6,678,518	Eerola	01/13/2004
	23	6,680,922	Jorgensen	01/20/2004
	24	6,701,432	Deng et al	03/02/2004
	25	6,871,179	Kist et al	03/22/2005
	26	6,889,181	Kerr et al	05/03/2005

FOREIGN PATENT DOCUMENTS					
Examiner Initial	Cite No.	Foreign Document No.	Country Code	Name of Patentee or Applicant of cited Document	Publication Date
	27	0817031	EP	Brad Fowlow	01/07/1998

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 2 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

Examiner Initials*	Cite No. ¹	Include name of author (in CAPTIAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	28	Alexander, D. et al., "The SwitchWare Active Network Architecture", June 6, 1998, IEEE
	29	Antoniuzzi, S. et al., "An Open Software Architecture for Multimedia Consumer Terminals", Central Research Labs, Italy; Alcatel SEL Research Centre, Germany, ECMAST 1997
	30	Arbanowski, Stefan, "Generic Description of Telecommunication Services and Dynamic Resource Selection in Intelligent Communication Environments", Thesis, Technische Universitat Berlin, October 9, 1996 (3 documents)
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	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
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	Filing Date	2013-06-06
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	Group Art Unit	2192
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	Filing Date	2013-06-06
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	Group Art Unit	2192
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	143	2/4/08 Plaintiff's Original Complaint
	144	8/26/08 Defendant NVIDIA Corporation's Answer to Complaint
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	146	8/27/08 Defendant Advanced Micro Devices, Inc.'s Answer to Complaint for Patent Infringement
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	154	12/10/08 Order granting Stipulated Motion for Dismissal with Prejudice re NVIDIA Corporation, Inc.
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	157	1/5/09 Plaintiff's Opposition to Defendants AMD, RealNetworks, RMI, and Sun's Motion to Stay Pending Reexamination and Exhibit A
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	165	01/22/10 Order Dismissing Case, <i>Implicit v Microsoft</i> , Case No. 09-5628
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	166	08/16/10 Plaintiff's Original Complaint, <i>Implicit v Cisco</i> , Case No. 10-3606
	167	11/22/10 Defendant Cisco Systems, Inc.'s Answer and Counterclaims, <i>Implicit v Cisco</i> , Case No. 10-3606
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	169	10/04/11 Order of Dismissal with Prejudice, <i>Implicit v Cisco</i> , Case No. 10-3606
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	170	08/24/10 Plaintiff's Original Complaint, <i>Implicit v Citrix</i> , Case No. 10-3766
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	First Named Inventor	Edward BALASSANIAN
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	172	01/14/11 Defendant Citrix Systems, Inc.'s Answer, Defenses and Counter-complaint for Declaratory Judgment, <i>Implicit v Citrix</i> , Case No. 10-3766
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	175	07/30/10 Plaintiff's Original Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	176	10/13/10 Defendants' Answer and Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	177	11/03/10 Plaintiff's Answer to Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	178	12/10/10 Plaintiff's First Amended Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	179	01/14/11 Defendants' Answer to 1 st Amended Complaint and Counterclaim, <i>Implicit v F5</i> , Case No. 10-3365
	180	02/18/11 Plaintiff's Answer to F5's Amended Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	181	04/18/11 Defendants' Amended Answer to 1 st Amended Complaint and Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	182	05/05/11 Plaintiff's Answer to F5's Amended Counter-Complaint, <i>Implicit v F5</i> , Case No. 10-3365
	183	07/22/11 F5 Networks, Inc.'s Invalidation Contentions, <i>Implicit v F5</i> , Case No. 10-3365
	184	07/22/11 F5 Networks, Inc.'s Invalidation Contentions, Exhibit A, <i>Implicit v F5</i> , Case No. 10-3365 (31 documents)
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	201	08/23/10 Plaintiff's Original Complaint, <i>Implicit v HP</i> , Case No. 10-3746
	202	11/23/10 Plaintiff's First Amended Complaint, <i>Implicit v HP</i> , Case No. 10-3746
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	204	02/18/11 <i>Implicit Networks, Inc.</i> 's Answer to HP Counterclaims, <i>Implicit v HP</i> , Case No. 10-3746
	205	05/10/11 Plaintiff's Amended Disclosure of Asserted Claims and Infringement Contentions, Case No. 10-3746
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	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
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	209	09/20/10 Plaintiff's Original Complaint, <i>Implicit v Juniper</i> , Case No. 10-4234
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	214	02/18/11 Plaintiff's Answer to Defendant's Counterclaims, <i>Implicit v Juniper</i> , Case No. 10-4234
	215	05/23/11 Plaintiff's Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	216	11/15/11 Plaintiff's Amended Disclosure of Asserted Claim and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	217	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	218	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit E, <i>Implicit v Juniper</i> , Case No. 10-4234
	219	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit J, <i>Implicit v Juniper</i> , Case No. 10-4234
	220	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibit K, <i>Implicit v Juniper</i> , Case No. 10-4234
	221	11/28/11 Spencer Hosie Declaration in Support of Plaintiff's Opening Claim Construction Brief Exhibits M-O, <i>Implicit v Juniper</i> , Case No. 10-4234
	222	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	223	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit B, <i>Implicit v Juniper</i> , Case No. 10-4234
	224	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit F, <i>Implicit v Juniper</i> , Case No. 10-4234
	225	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit N, <i>Implicit v Juniper</i> , Case No. 10-4234
	226	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit P, <i>Implicit v Juniper</i> , Case No. 10-4234
	227	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Q, <i>Implicit v Juniper</i> , Case No. 10-4234
	228	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit S., <i>Implicit v Juniper</i> , Case No. 10-4234
	229	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-1, <i>Implicit v Juniper</i> , Case No. 10-4234
	230	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-2, <i>Implicit v Juniper</i> , Case No. 10-4234
	231	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-3, <i>Implicit v Juniper</i> , Case No. 10-4234
	232	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit T-4, <i>Implicit v Juniper</i> , Case No. 10-4234
	233	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit U, <i>Implicit v Juniper</i> , Case No. 10-4234
	234	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit V, <i>Implicit v Juniper</i> , Case No. 10-4234
	235	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit W, <i>Implicit v Juniper</i> , Case No. 10-4234

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 9 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

	236	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit X, <i>Implicit v Juniper</i> , Case No. 10-4234
Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	237	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-1, <i>Implicit v Juniper</i> , Case No. 10-4234
	238	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-2, <i>Implicit v Juniper</i> , Case No. 10-4234
	239	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-3, <i>Implicit v Juniper</i> , Case No. 10-4234
	240	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Y-4, <i>Implicit v Juniper</i> , Case No. 10-4234
	241	12/12/11 Holly Hogan Declaration in Support of Defendants' Claim Construction Brief, Exhibit Z, <i>Implicit v Juniper</i> , Case No. 10-4234
	242	12/19/11 Spencer Hosie Declaration in Support of Plaintiff's Reply Claim Construction Brief, <i>Implicit v Juniper</i> , Case No. 10-4234
	243	12/19/11 Spencer Hosie Declaration in Support of Plaintiff's Reply Claim Construction Brief, Exhibit P, <i>Implicit v Juniper</i> , Case No. 10-4234
	244	01/10/12 Plaintiff's 1-10-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	245	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	246	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A1, <i>Implicit v Juniper</i> , Case No. 10-4234
	247	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A2, <i>Implicit v Juniper</i> , Case No. 10-4234
	248	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A3, <i>Implicit v Juniper</i> , Case No. 10-4234
	249	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit A4, <i>Implicit v Juniper</i> , Case No. 10-4234
	250	02/10/12 Juniper Networks, Inc.'s Supplemental Invalidity Contentions, Exhibit B1, <i>Implicit v Juniper</i> , Case No. 10-4234
	251	02/29/12 Plaintiff's 2-29-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	252	04/06/12 Plaintiff's 4-6-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	253	04/09/12 Plaintiff's 4-9-12 Amended Disclosure of Asserted Claims and Infringement Contentions, <i>Implicit v Juniper</i> , Case No. 10-4234
	254	09/11/12 Implicit's Expert Report of Scott Nettles
	255	11/09/12 Juniper's Notice of Motion and Memorandum of Law ISO Motion for Summary Judgment or, in the alternative, for Partial Summary Judgment, on the Issue of Invalidity
	256	11/09/12 Exhibit 2 to Declaration in support of Juniper's Motion for Summary Judgment – Calvert Expert Report
	257	11/09/12 Exhibit 3 to Declaration in support of Juniper's Motion for Summary Judgment – Calvert Supplemental Expert Report
	258	11/26/12 Implicit Opposition to Juniper's and F5 Motion on Invalidity
	259	11/26/12 Exhibit A to Hosie Declaration- 08/27/12 Excerpts from David Blaine deposition
	260	11/26/12 Exhibit B to Hosie Declaration– 10/25/12 Excerpts from Kenneth Calvert Deposition
	261	11/26/12 Exhibit C to Hosie Declaration – 08/15/12 Excerpts from Kenneth Calvert Expert Report
	262	11/26/12 Exhibit D to Hosie Declaration – USPN 6,651,099 to Dietz et al
	263	11/26/12 Exhibit E to Hosie Declaration – Understanding Packet-Based and Flow-Based Forwarding
	264	11/26/12 Exhibit F to Hosie Declaration – Wikipedia on Soft State
	265	11/26/12 Exhibit G to Hosie Declaration – Sprint Notes
	266	11/26/12 Exhibit H to Hosie Declaration – Implicit's Supplemental Response to Juniper's 2 nd Set of Interrogatories
	267	11/26/12 Exhibit I to Hosie Declaration – USPN 7,650,634 (Zuk)
	268	03/13/13 Order Granting Defendants' Motion for Summary Judgment
	269	04/09/13 Notice of Appeal to the Federal Circuit

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 10 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 11 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
		Other Implicit Networks, Inc. Prosecution Matters.
	270	Serial No. 11/933,022 Utility Application filed October 31, 2007
	271	Serial No. 11/933,022 Preliminary Amendment filed February 19, 2008
	272	Serial No. 11/933,022 Office Action mailed June 24, 2009
	273	Serial No. 11/933,022 Amendment filed September 24, 2009
	274	Serial No. 11/933,022 Office Action dated December 11, 2009
	275	Serial No. 11/933,022 Amendment and Response dated January 29, 2010
	276	Serial No. 11/933,022 Notice of Allowance dated March 2, 2010
	277	Serial No. 11/933,022 Issue Notification dated May 4, 2010
	278	Serial No.10/636,314 Utility Application filed August 6, 2003
	279	Serial No.10/636,314 Office Action dated April 7, 2008
	280	Serial No.10/636,314 Response to Restriction Requirement dated August 5, 2008
	281	Serial No.10/636,314 Office Action dated October 3, 2008
	282	Serial No.10/636,314 Response to Office Action dated April 3, 2009
	283	Serial No.10/636,314 Notice of Non-Compliant Amendment dated May 4, 2009
	284	Serial No.10/636,314 Amendment to Office Action Response dated June 4, 2009
	285	Serial No.10/636,314 Notice of Non-Compliant Amendment dated June 12, 2009
	286	Serial No.10/636,314 Amendment to Office Action dated July 10, 2009
	287	Serial No.10/636,314 Final Rejection Office Action dated October 21, 2009
	288	Serial No.10/636,314 Amendment after Final Office Action dated December 14, 2009
	289	Serial No.10/636,314 Advisory Action dated January 11, 2010
	290	Serial No.10/636,314 Notice of Non-Compliant Amendment dated January 11, 2010
	291	Serial No.10/636,314 Supplemental Amendment and Response dated March 13, 2010
	292	Serial No.10/636,314 Office Action dated May 11, 2010
	293	Serial No.10/636,314 Amendment and Response dated September 13, 2010
	294	Serial No.10/636,314 Final Rejection dated November 24, 2010
	295	Serial No.10/636,314 Notice of Appeal dated May 19, 2011
	296	Serial No.10/636,314 Amendment and Request for Continued Examination dated July 19, 2011
	297	Serial No.10/636,314 Notice of Allowance dated September 13, 2011
	298	Serial No.10/636,314 Notice of Allowance dated September 19, 2011
	299	Serial No.10/636,314 Issue Notification dated October 19, 2011
	300	Serial No. 09/474,664 Utility Application filed December 29, 1999
	301	Serial No. 09/474,664 Office Action dated September 23, 2002
	302	Serial No. 09/474,664 Amendment and Response dated February 24, 2003
	303	Serial No. 09/474,664 Notice of Allowance dated May 20, 2003
	304	Serial No. 90/010, 356 Request for Ex Parte Reexamination dated December 15, 2008
	305	Serial No. 90/010, 356 Office Action Granting Reexamination dated January 17, 2009
	306	Serial No. 90/010, 356 First Office Action dated July 7, 2009
	307	Serial No. 90/010, 356 First Office Action Response dated September 1, 2009
	308	Serial No. 90/010, 356 Patent Owner Interview Summary dated October 23, 2009
	309	Serial No. 90/010, 356 Office Action Final dated December 4, 2009
	310	Serial No. 90/010, 356 Amendment and Response to Office Action dated December 18, 2009
	311	Serial No. 90/010, 356 Amendment and Response to Office Action dated January 4, 2010

*

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 12 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	312	Serial No. 90/010, 356 Advisory Action dated January 21, 2010
	313	Serial No. 90/010, 356 Amendment and Response to Advisory Action dated February 8, 2010
	314	Serial No. 90/010, 356 Notice of Intent to Issue a Reexam Certificate dated March 2, 2010
	315	Serial No. 90/010, 356 Reexamination Certificate Issued dated June 22, 2010
	316	Serial No. 95/000,659 Inter Partes Reexam Request dated February 13, 2012
	317	Serial No. 95/000,659 Order Granting Reexamination dated April 3, 2012
	318	Serial No. 95/000,659 Office Action dated April 3, 2012
	319	Serial No. 95/000,659 Office Action Response dated June 4, 2012 (including Exhibits 1 & 2) (4 documents)
	320	Serial No. 95/000,659 Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012
	321	Serial No. 95/000,659 Appendix R-1 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Declaration of Prof. Dr. Bernhard Plattner)
	322	Serial No. 95/000,659 Appendix R-2 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Prof. Dr. Bernhard Plattner CV)
	323	Serial No. 95/000,659 Appendix R-3 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Listing of Publications to Prof. Dr. Bernhard Plattner updated February 2012)
	324	Serial No. 95/000,659 Appendix R-4 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Office Action Granting Reexamination in 95/000,660 dated May 10, 2012)
	325	Serial No. 95/000,659 Appendix R-5 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Office Action in 95/000,660 dated May 10, 2012)
	326	Serial No. 95/000,659 Appendix R-6 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Implicit Networks, Inc. USPN 6,629,163 Claims Chart)
	327	Serial No. 95/000,659 Appendix R-7 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Internet Protocol DARPA Internet Program Protocol Specification dated September 1991)
	328	Serial No. 95/000,659 Appendix R-8 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Atkinson, "IP Encapsulating Security Payload (ESP) dated August 1995)
	329	Serial No. 95/000,659 Appendix R-9 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Claim Construction Order dated February 29, 2012)
	330	Serial No. 95/000,659 Appendix R-10-1 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. I of Edward Balassanian Deposition Transcript dated May 30, 2012)
	331	Serial No. 95/000,659 Appendix R-10-2 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. II of Edward Balassanian Deposition Transcript dated May 31, 2012)
	332	Serial No. 95/000,659 Appendix R-10-3 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. III of Edward Balassanian Deposition Transcript dated June 7, 2012)
	333	Serial No. 95/000,659 Appendix R-10-4 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Vol. IV of Edward Balassanian Deposition Transcript dated June 8, 2012)
	334	Serial No. 95/000,659 Appendix R-11 to Third Party Comments to Patent Owner's Response to Office Action dated July 5, 2012 (Implicit Networks, Inc.'s Response to Juniper Networks, Inc.'s First Set of Requests for Admission 1-32)
	335	Serial No. 95/000,659 Action Closing Prosecution dated October 1, 2012
	336	Serial No. 95/000,659 Petition to Withdraw and Reissue Action Closing Prosecution dated November 20, 2012
	337	Serial No. 95/000,659 Patent Owner Comments to Action Closing Prosecution dated December 3, 2012
	338	Serial No. 95/000,659 Opposition to Petition dated December 17, 2012
	339	Serial No. 95/000,659 Third Party Comments to Action Closing Prosecution dated January 2, 2013
	340	Serial No. 95/000,660 Inter Partes Reexam Request dated March 2, 2012
	341	Serial No. 95/000,660 Order Granting Reexamination dated May 10, 2012

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 13 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
Examiner Name		

Examiner Initials*	Cite No.	Include name of author (in CAPTIAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page (s), volume-issue number (s), publisher, city and/or country where published.
	342	Serial No. 95/000,660 Office Action dated May 10, 2012
	343	Serial No. 95/000,660 Response to Office Action dated July 10, 2012 (including Exhibits 1 and 2)
	344	Serial No. 95/000,660 Third Party Comments to Office After Patent Owner's Response dated August 8, 2012 (including Revised Comments)
	345	Serial No. 95/000,660 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Declaration of Prof. Dr. Bernhard Plattner)
	346	Serial No. 95/000,660 Appendix R-1 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Prof. Dr. Bernhard Plattner CV)
	347	Serial No. 95/000,660 Appendix R-3 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Listing of Publications to Prof. Dr. Bernhard Plattner updated February 2012)
	348	Serial No. 95/000,660 Appendix R-4 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Office Action Granting Reexamination in 95/000,660 dated May 10, 2012)
	349	Serial No. 95/000,660 Appendix R-5 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Office Action in 95/000,660 dated May 10, 2012)
	350	Serial No. 95/000,660 Appendix R-6 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Implicit Networks, Inc. USPN 6,629,163 Claims Chart)
	351	Serial No. 95/000,660 Appendix R-7 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Internet Protocol DARPA Internet Program Protocol Specification dated September 1991)
	352	Serial No. 95/000,660 Appendix R-8 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Atkinson, "IP Encapsulating Security Payload (ESP) dated August 1995)
	353	Serial No. 95/000,660 Appendix R-9 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Claim Construction Order dated February 29, 2012)
	354	Serial No. 95/000,660 Appendix R-10 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Vol. I-IV of Edward Balassanian Deposition Transcript dated May 30, 2012)
	355	Serial No. 95/000,660 Appendix R-11 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Shacham, A., et al, "IP Payload Compression Protocol", Network Working Group, RFC 3173 September 2001)
	356	Serial No. 95/000,660 Appendix R-12 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Shacham, A., et al, "IP Payload Compression Protocol", Network Working Group, RFC 2393 December 1998)
	357	Serial No. 95/000,660 Appendix R-13 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 ('163 Pfeiffer Claim Chart)
	358	Serial No. 95/000,660 Appendix R-14 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Ylonen, T., "SSH Transport Layer Protocol", Network Working Group – Draft February 22, 1999)
	359	Serial No. 95/000,660 Appendix R-15 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Dommety, G., "Key and Sequence Number Extensions to GRE", Network Working Group, RFC 2890 September 2000)
	360	Serial No. 95/000,660 Appendix R-16 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Monsour, R., et al, "Compression in IP Security" March 1997)
	361	Serial No. 95/000,660 Appendix R-17 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Friend, R., Internet Working Group RFC 3943 dated November 2004 "Transport Layer Security Protocol Compression Using Lempel-Ziv-Stac)
	362	Serial No. 95/000,660 Appendix R-18 to Third Party Comments to Patent Owner's Response to Office Action dated August 8, 2012 (Implicit Networks, Inc.'s Response to Juniper Networks, Inc.'s First Set of Requests for Admission 1-32)
	363	Serial No. 95/000,660 Revised - Third Party Comments to Office After Patent Owner's Response dated November 2, 2012
	364	Serial No. 95/000,660 Action Closing Prosecution dated December 21, 2012
	365	Serial No. 95/000,660 Comments to Action Closing Prosecution dated February 21, 2013 (including Dec of Dr. Ng)
	366	Serial No. 95/000,660 Third Party Comments to Action Closing Prosecution dated March 25, 2013
	367	PCT/US00/33634 – PCT application (WO 01/2077 A2 - 7/12/01)
	368	PCT/US00/33634 – Written Opinion (WO 01/50277 A3 – 2/14/02)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Sheet 14 of 14)	<i>Complete if Known</i>	
	Application Number	13/911,324
	Filing Date	2013-06-06
	First Named Inventor	Edward BALASSANIAN
	Group Art Unit	2192
	Examiner Name	

369	PCT/US00/33634 – International Search Report (10/9/01)
370	PCT/US00/33634 – Response to Official Communication dated December 7, 2001 (3/21/02)
371	PCT/US00/33634 – International Preliminary Examination Report (4/8/02)
372	PCT/US00/33634 – Official Communication (1/24/03)
373	PCT/US00/33634 – Response to Official Communication dated January 24, 2003 (3/12/03)
374	PCT/US00/33634 – Official Communication (5/13/04)
375	PCT/US00/33634 – Response to Summons to Attend Oral Proceeding dated May 13, 2004 (10/9/04)
376	PCT/US00/33634 – Decision to Refuse a European Patent application (11/12/04)
377	PCT/US00/33634 – Minutes of the oral proceedings before the Examining Division (10/12/04)
378	PCT/US00/33634 – Closure of the procedure in respect to Application No. 00984234.5 – 2212 (2/22/05)
379	05/03/13 Expert Report of Dr. Alfonso Cardenas Regarding Validity of U.S. Patent Nos. 6,877,006; 7,167,864; 7,720,861; AND 8,082,268 (6 documents)
380	Expert Report of Dr. Alfonso Cardenas Regarding Validity of U.S. Patent No. 7,167,864 (3 documents)
381	“InfoReports User Guide: Version 3.3.1;” Platinum Technology, Publication No. PRO-X-331-UG00-00, printed April 1998; Pages 1-430.

Examiner Signature: /Jungwon Chang/	Date Considered: 02/27/2014
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CERTIFICATION STATEMENT

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18.

Signature: /Dean M. Munyon/	Date: 2013-06-25
Name/Print: Dean M. Munyon	Registration Number: 42,914



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/911,324	04/08/2014	8694683	6743-00105	4969

35690 7590 03/19/2014
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

IMPLICIT NETWORKS, INC., Bellevue, WA, Assignee (with 37 CFR 1.172 Interest);
Edward Balassanian, Seattle, WA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.



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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
13/911,324	8694683	2454	9200



Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 126601 on 09/15/2014

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 126601 is:

126601
MHKKG (Implicit/BeLabs)
P.O. Box 398
Austin, TX 78767-0398

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00080	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT TREND MICRO, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00079	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT NOKIA SOLUTIONS AND NETWORKS US, LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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DECISION/JUDGEMENT

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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00078	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT NEC CORPORATION OF AMERICA
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00076	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT HUAWEI TECHNOLOGIES USA, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00075	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT ERICSSON, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00079	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT NOKIA SOLUTIONS AND NETWORKS US, LLC
Format m/d/yyyy		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY		
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT All claims and counterclaims asserted in this suit between Implicit and Nokia are dismissed with prejudice and each party is to bear its own attorneys' fees and costs. Signed on 12/29/2016 by Judge Rodney Gilstrap.

CLERK <i>David A. O'Poole</i>	(BY) DEPUTY CLERK M. Covey	DATE Format m/d/yyyy
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ in District of Texas, Tyler Division _____ on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:17-cv-336	DATE FILED 6/7/2017	U.S. DISTRICT COURT in District of Texas, Tyler Division
PLAINTIFF Implicit, LLC		DEFENDANT Palo Alto Networks, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
5 9,325,740	4/26/2016	Implicit, LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ in District of Texas, Tyler Division _____ on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:17-cv-336	DATE FILED 6/7/2017	U.S. DISTRICT COURT in District of Texas, Tyler Division
PLAINTIFF Implicit, LLC		DEFENDANT Palo Alto Networks, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
5 9,325,740	4/26/2016	Implicit, LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following decision has been rendered or judgement issued:

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00076	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT HUAWEI TECHNOLOGIES USA, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

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Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00075	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT ERICSSON, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

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Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:16-cv-00075	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT ERICSSON, INC.
Format m/d/yyyy		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

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PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT Ordered that all claims asserted in thsi suit between Implicit and Ericsson are hereby dismissed with prejudice.

CLERK <i>David A. O'Poole</i>	(BY) DEPUTY CLERK Gleith S Green	DATE 8/3/17
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
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AO 120 (Rev. 08/10)

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00080	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT TREND MICRO, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:18-cv-46-JRG	DATE FILED 2/26/2018	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Implicit, LLC		DEFENDANT McAfee, LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:18-cv-47-JRG	DATE FILED 2/26/2018	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Implicit, LLC		DEFENDANT Sophos Ltd
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

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Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:18-cv-53-JRG	DATE FILED 3/8/2018	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Implicit, LLC		DEFENDANT NETSCOUT Systems, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:18-cv-54-JRG	DATE FILED 3/8/2018	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Implicit, LLC		DEFENDANT Sandvine Corporation
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:18-cv-46-JRG	DATE FILED 2/26/2018	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Implicit, LLC		DEFENDANT McAfee, LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT It is therefore ORDERED that Plaintiff's claims against Defendant McAfee, LLC are DISMISSED WITHOUT PREJUDICE
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CLERK <i>David A. O'Poole</i>	(BY) DEPUTY CLERK <i>Nakisha Love</i>	DATE 4/10/18
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TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Tyler Division on the following Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:16-cv-00078	DATE FILED 2/23/2016	U.S. DISTRICT COURT Eastern District of Texas - Tyler Division
PLAINTIFF IMPLICIT, LLC		DEFENDANT NEC CORPORATION OF AMERICA
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,324,685	11/27/2001	Implicit, LLC
2 8,694,683	4/8/2014	Implicit, LLC
3 8,856,779	10/7/2014	Implicit, LLC
4 9,270,790	2/23/2016	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

ORDER DISMISSING CASE. All claims asserted in this suit by Plaintiff against Defendant are hereby dismissed with prejudice, subject to the terms of a settlement agreement. All attorneys' fees and costs are to be borne by the party that incurred them

CLERK David A O'Toole	(BY) DEPUTY CLERK Michael Lantz	DATE 12/7/2016
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TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 2:18-cv-54-JRG	DATE FILED 3/8/2018	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Implicit, LLC		DEFENDANT Sandvine Corporation
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following
 Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 2:18-cv-53-JRG	DATE FILED 3/8/2018	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Implicit, LLC		DEFENDANT NETSCOUT Systems, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3 9,591,104	3/7/2017	Implicit, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas, Marshall Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:18-cv-47-JRG	DATE FILED 2/26/2018	U.S. DISTRICT COURT Eastern District of Texas, Marshall Division
PLAINTIFF Implicit, LLC		DEFENDANT Sophos Ltd
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,694,683	4/8/2014	Implicit, LLC
2 9,270,790	2/23/2016	Implicit, LLC
3 9,591,104	3/7/2017	Implicit, LLC
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Format m/d/yyyy

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT ORDERED that all claims asserted in this suit between Plaintiff Implicit and Defendant Sophos are hereby DISMISSED WITHOUT PREJUDICE.

CLERK <i>David A. O'Toole</i>	(BY) DEPUTY CLERK ch	DATE 11/2/18
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