IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Lakshmi Arunachalam
APPLICATION NO.:	11/980,185
FILING DATE:	October 30, 2007
TITLE:	Multi-Media Transactional Services (as amended)
EXAMINER:	Viet Duy Vu
ART UNIT:	2454
CONF. NO.:	5863
ATTY.DKT.NO.:	PA5041US

MAIL STOP AMENDMENT
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RESPONSE A

Examiner Vu:

In response to the non-final office action dated January 6, 2010 (*Office Action)*, please enter the following **amendments to the specification** and **claims**, which commence on **pages two** and **three**, respectively. The Applicant's **remarks** and **conclusions** may be found beginning on **pages eleven** and **fourteen**, respectively.

IN THE SPECIFICATION

PLEASE AMEND PARAGRAPHS 1-3 ON PAGE 1 OF THE ORIGINALLY FILED SPECIFICATION AS FOLLOWS:

[0001] This application is a continuation-in-part and claims the priority benefit of United States patent ~~co-pending~~ application number 09/792,323 filed February [[Feb.]] 23, 2001, now United States patent number 7,340,506, which [[was]] is a continuation-in-part and claims the priority benefit of United States patent application 08/879,958 filed June 20, 1997, now United States patent ~~U.S. Patent~~ number 5,987,500, which [[was]] is a divisional and claims the priority benefit of United States patent application number 08/700,726 filed [[Aug.]] August 5, 1996, now United States patent ~~U.S. Patent~~ number 5,778,178, which claims the priority benefit of United States ~~was related to and claimed priority from~~ provisional application number 60/006,634 filed [[Nov.]] November 13, 1995. United States patent application numbers ~~Applications~~ 09/792,323, 08,879,958, 08/700,726, and United States provisional application number 60/006,634 are hereby incorporated by reference.

[0002] In addition, related United States patent applications 09/863,704 filed May 23, 2001, 09/296,207 filed April 21, 1999 (now United States patent number 6,212,556), and United States provisional application number 60/206,422 filed May 23, 2000 are also all hereby incorporated by reference.

[0003] ~~The text of this application is substantially similar to that of application 08/700,726, now U.S. Patent 5,778,178.~~

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (currently amended) A method for delivering complete multimedia transactional services over the World Wide Web, the method comprising:

receiving a transactional request for access to multimedia content, the transactional request received from a multimedia user, wherein the transactional request includes an object that is a transactional data structure specific to a transactional web application;

executing an exchange component to provide the multimedia user with a choice of currently available multimedia content services accessible to the exchange component;

receiving a selection of a currently accessible multimedia content service from the multimedia user;

providing a choice of available multimedia content from the selected multimedia content service to the multimedia user;

receiving a request from the multimedia user for multimedia content from the selected multimedia content service; and

providing the requested multimedia content to the multimedia user ~~in real time, wherein providing the requested multimedia content includes~~ and responsive to the routing of the transactional data structure and user request for multimedia content, and wherein the routing of the transactional data structure and subsequent providing of requested multimedia content occur in a service network atop the World Wide Web, and as part of a complete, non-deferred, and real-time transaction.

2. (previously presented) The method of claim 1, wherein the multimedia content includes video.

3. (previously presented) The method of claim 1, wherein the multimedia content includes audio.

4. (previously presented) The method of claim 1, wherein the multimedia content includes web advertising.

5. (currently amended) The method of claim 1, further comprising buying or selling ~~wherein~~ the multimedia content ~~is bought or sold~~.

6. (cancelled)

7. (previously presented) The method of claim 1, wherein providing the requested multimedia content is performed through execution of a switching or exchange component.

8. (previously presented) The method of claim 7, wherein the execution of the switching or exchange component provides a plurality of vertical services.

9. (previously presented) The method of claim 8, wherein vertical services are chosen from the group consisting of messaging, archival retrieval, directory services, data staging, and financial services.

10. (currently amended) A system for delivering complete multimedia transactional services over the World Wide Web, the system comprising:

a management component stored in memory and executable by a processor to receive a request from a multimedia user for multimedia content services, the request including an object that is a transactional data structure specific to a transactional web application;

an exchange component stored in memory and executable by a processor to supply the multimedia user with a choice of available multimedia content services, and wherein the exchange component is further executable to receive a choice by the multimedia user relating to a particular multimedia content service selected from the available multimedia content services; and

a switching component stored in memory and executable by a processor to provide for the transfer of information between the selected multimedia content service and the multimedia user whereby the multimedia user may choose and receive particular multimedia content, the transfer of information responsive to the ~~including~~ routing of the transactional data structure and user request for multimedia content, and wherein the routing of the transactional data structure and subsequent providing of requested multimedia content occur in a service network atop the World Wide Web, and as part of a complete, non-deferred, and real-time transaction.

11. (previously presented) The system of claim 10, wherein the selected multimedia content includes video.

12. (previously presented) The system of claim 10, wherein the selected multimedia content includes audio.

13. (previously presented) The system of claim 10, wherein the selected multimedia content includes web advertising.

14. (cancelled)

15. (previously presented) The system of claim 10, wherein the selected multimedia content is bought or sold.

16. (previously presented) The system of claim 10, wherein the switching component is further executable to provide a plurality of vertical services.

17. (previously presented) The system of claim 16, wherein the vertical services are chosen from the group consisting of messaging, archival retrieval, directory services, data staging, and financial services.

18.-52. (cancelled)

53. (currently amended) A method for providing an enhanced value chain between web merchants and users, the method comprising:

providing a Web site where a user can access a service network atop the World Wide Web upon which a plurality of Web merchants provide complete, non-deferred, and real-time point of service transactional capabilities~~, the service network running on the Internet~~;

executing an exchange component that interacts with the Web site, wherein execution of the exchange component provides the user with information relating to available point of service applications;

receiving a choice of a point of service application from the user to complete a real-time transaction over the Web; and

routing a complete and non-deferred transactional data structure from the chosen point-of-service web application to the user in real-time, the transactional data structure being specific to the point of service web application.

54. (previously presented) The method of claim 53, wherein the exchange component communicates with a switching component.

55. (currently amended) The method of claim 54, wherein the switching component routes ~~information~~ the data structure between the user and the point of service application.

56. (previously presented) The method of claim 53 further comprising providing users a list of available point of service applications.

57. (previously presented) The method of claim 53, wherein the exchange component communicates with an object routing component.

58. (previously presented) The method of claim 57, wherein the object routing component allows completion of the real-time transaction.

59. (currently amended) The method of claim 53, wherein user is selected from the group consisting of a supplier, partner, distributor, or value-added reseller.

60.-71. (cancelled)

72. (currently amended) A method for performing a real time transaction over a digital network, the method comprising:

providing a web page for display on a computer system coupled to an input device;

providing a point of service application as a selection within the web page, wherein the point of service application provides access to both a checking and savings account, the point of service application operating in a service network atop the World Wide Web;

accepting a first signal from the user input device to select the point of service application;

accepting subsequent signals from the user input device; and

transferring funds from the checking account to the savings account in real time utilizing a routed transactional data structure that is both complete and non-deferred in addition to being specific to the point of service application, the routing occurring [[and]] in response to the subsequent signals.

73. (previously presented) The method of claim 72, wherein an exchange over the Web is used to complete the transfer of funds in a Web application.

74. (previously presented) The method of claim 72, wherein a management agent is used to complete the transfer of funds.

75. (previously presented) The method of claim 72, wherein object routing is used to complete the transfer of funds.

76. (currently amended) The method of claim 75, wherein the object routing includes the use of a distributed on-line service information base ~~bases~~.

77. (previously presented) The method of claim 72, wherein a virtual information store is used to complete the transfer of funds.

78. (previously presented) The method of claim 77, wherein the virtual information store includes a networked object specific to a web application in a Web transaction.

79. (previously presented) The method of claim 78, wherein the networked object is the object identity in a Web transaction connecting from a Web application on a Web page to a transactional application executing anywhere on the Web.

80.-82. (cancelled)

83. (previously presented) The method of claim 72, wherein the transaction is a loan requested from a lender.

84. (previously presented) The method of claim 72, wherein the transaction is a vehicle purchased with bank financing.

85. (previously presented) The method of claim 72, wherein the transaction is accessing an account.

86.-110. (cancelled)

REMARKS

AMENDMENTS TO THE SPECIFICATION

The Examiner requested that the Applicant update the status of the related applications on the first page of the specification. See *Office Action*, 1. The Applicant has provided the requested information through an amendment to the specification.

35 U.S.C. § 103(A) REJECTION

The Examiner rejects claims 1-5, 7-13, 15-17, 53-59, 72-79 and 83-85 under 35 U.S.C. 103(a) as being unpatentable over Rogers et al. (U.S. patent number 5,793,964). See *Office Action*, 2. The Applicant respectfully disagrees in that the Rogers reference fails to disclose an object that is a transactional data structure specific to a transactional web application. Rogers also fails to disclose a service network operating atop the World Wide Web. Rogers finally fails to disclose complete, non-deferred, real-time transactions.

Independent claim 1 recites the step of 'receiving a transactional request for access to multimedia content, the transactional request received from a multimedia user, wherein the transactional request includes **an object that is a transactional data structure specific to a transactional web application**.' As noted above, Rogers fails to disclose an 'object that is a transactional data structure' as that term is understood in the '185 Patent application—a data structure specific to a Web application. While pending claims are given their "broadest reasonable interpretation" during patent prosecution, that interpretation, however, must be "consistent with the specification" and construed "interpreted [as] by one of ordinary skill in the art." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005); *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004); *In re Cortright*, 165 F.3d 1353, 1359 (Fed. Cir.1999); MPEP § 2111. The Rules of

Patent Practice require claims to "conform to the invention as set forth in the remainder of the specification" and that "the meaning of the terms in the claims . . . be ascertainable by reference to the description." 37 C.F.R. § 1.75(d)(1). The Applicant respectfully submits that similar *words* do **not** equate to similar *concepts*. The Examiner's application of Rogers against the claims of the '185Application requires adoption of an interpretation of the claims that is inconsistent with the specification and that would not have been adopted by one of ordinary skill in the art.

Rogers disclose 'image objects 30, 31, 32, 33, 34.' See 964:9:67; Fig. 2. Said objects do not constitute an encapsulation of data into a 'transactional data structure specific to a transactional web application' as is the 'object' that is recited in independent claim 1 of the present application. Rogers' 'object' is not a 'transactional data structure' much less one that is specific to a non-existent transactional web application. Rogers, therefore, cannot meet this or any of the limitations in claim 1 that relate to an 'object' or transactional data structure specific to a transactional web application, including the final step of claim 1, which involves the 'routing of the transactional data structure.'

Independent claim 1 also recites '**providing . . . requested multimedia content . . . in a service network atop the World Wide Web, and as part of a complete, non-deferred, and real-time transaction**.' Rogers wholly fails to disclose a complete, non-deferred, real-time transaction. Rogers also fails disclose *any* transaction—much less one that is complete, non-deferred, and occurring in real-time—that occurs in a service network atop the World Wide Web. The Examiner's rejection (as does Rogers) fails to distinguish between the physical Internet and the claimed "service network," which may operate "atop a facilities network" such as the physical Internet, Web, email networks, or other IP-based facilities networks. Rogers concerns little more than the display, in a Web browser, of pie charts and reports. Such graphic displays are unrelated to transactional data structures specific to a transactional Web application and routing in a service network atop the World Wide Web. Rogers utilizes CGI and stripping field-by-field

from a Web form with each field being sent one at a time as standard I/O, which was previously disclaimed in parent application and now U.S. Patent number 5,778,178 at '178:1:65-2:31.

The Examiner states that "[c]laims 10-13, 15-17, 53-59 are similar in scope as that of claims 1-5 and 7-9" are similarly rejected. *Office Action*, 4. To the extent that Rogers fails to anticipate or render obvious claims 1-5 and 7-9, claims 10-13, 15-17, 53-59 are likewise novel and non-obvious per the Examiner's stated logic.

Claims 72-79 and 83-85

Rogers does not anticipate nor render obvious independent claim 72, because Rogers does not disclose or teach a transactional Web application, much less a banking Web application that is transactional, complete, non-deferred, and operating in real-time in a service network atop the World Wide Web.

CONCLUSION

The Rogers reference fails to disclose an object that is a transactional data structure specific to a transactional web application. Rogers also fails to disclose a service network operating atop the World Wide Web. Rogers finally fails to disclose complete, non-deferred, real-time transactions. In light of the foregoing, Rogers fails to disclose any of the independent claims of the present application. Rogers similarly fails to disclose the completely claimed subject matter of any dependent claim for at least the same reasons as the independent claim from which said claim depends. The present application is believed to be in condition for allowance. The Examiner is invited to contact the undersigned with any questions concerning the present response.

Respectfully submitted,
Lakshmi Arunachalam

June 7, 2010

By: /Tam Thanh Pham/

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Electronic Patent Application Fee Transmittal

Application Number:	11980185
Filing Date:	30-Oct-2007
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Filer:	TamThanh Thi Pham
Attorney Docket Number:	PA5041US

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:				
Extension - 2 months with $0 paid	1252	1	490	490

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**490**

Electronic Acknowledgement Receipt

EFS ID:	7763968
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	07-JUN-2010
Filing Date:	30-OCT-2007
Time Stamp:	20:05:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$490
RAM confirmation Number	6061
Deposit Account	060600
Authorized User	

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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		PA5041US_Response.pdf	149546 5a2a743c9d27c6f560dff36580d4247c8750be8f	yes	14

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Specification	2	2
Claims	3	10
Applicant Arguments/Remarks Made in an Amendment	11	14

Warnings:

Information:

2	Fee Worksheet (PTO-875)	fee-info.pdf	30115 e99c0fd8e9f89fb3c645ce743490b12a0ec0b6c9	no	2

Warnings:

Information:

Total Files Size (in bytes):	179661

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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.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/980,185	10/30/2007	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 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).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 06/07/2010	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 33	Minus	** 110	= 0	X $26 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 4	Minus	***13	= 0	X $110 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	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))									
☐ 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 number found in the appropriate box in column 1.

Legal Instrument Examiner:
/ANNIE c. SINGLETON/

Electronic Acknowledgement Receipt

EFS ID:	6871772
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	13:18:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	NPL Documents	WEBX_NP019C.pdf	12843257 07b89b05df3284398554a7a539739121beff95ec	no	25

Warnings:	
Information:	

2	NPL Documents	WEBX_NP020.pdf	19973048 9fa7b00782646f7511ec37c1103c3b20b7437a9b	no	101
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3	NPL Documents	WEBX_NP021.pdf	13521077 2ad8c29d56a83f10ba3f16c2eeca1eb2df0262c8	no	62
Warnings:					
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4	NPL Documents	WEBX_NP022.pdf	8824738 20c9f60a1b62f562a7c2ef77b7e99cb3727fd4ae	no	54
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5	NPL Documents	WEBX_NP023.pdf	7306945 e1dc25d4bf3989c6cf5a11e099f44b3c66396f35	no	37
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6	NPL Documents	WEBX_NP024A.pdf	18971039 1c9c1aa864a42ef72f14701ade563747bf3bffa1	no	28
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Information:					
7	NPL Documents	WEBX_NP024B.pdf	20431240 2eebb403fdbb5f82985631cb7c66778a9e2bcae3	no	28
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9	NPL Documents	WEBX_NP024D.pdf	19277402 e88a2cea188ef4987ed86d17180ea7c64bd8b2ab	no	28
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12	NPL Documents	WEBX_NP026.pdf	612127 0652893bcf2b8b4c3e9de15879220733f3f48f67	no	3
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13	NPL Documents	WEBX_NP027.pdf	1829924 da262e609eaeb13c75b9595a2aed8a50ebf001f2	no	6
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14	NPL Documents	WEBX_NP028A.pdf	16635722 3f374ae8583c852c93ae53027578d7b79bc0aea0	no	41
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15	NPL Documents	WEBX_NP028B.pdf	15519095 37225338e795d8564b7e85c05935921a1875ac3b	no	41
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16	NPL Documents	WEBX_NP029.pdf	1424885 f8ce25144a4f04657a0e3511cf7520568981d938	no	5
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17	NPL Documents	WEBX_NP030.pdf	3716363 513095c80c0c60aab0f5f3b480f49a2de83a62ce	no	20
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18	NPL Documents	WEBX_NP031.pdf	835692 7237bbde527cd1ae407483ebbb626b9a4e4955aa	no	2
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19	NPL Documents	WEBX_NP032.pdf	561313 de23e68895b5917507e7269471a84274738844c8	no	2
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Information:					

20	NPL Documents	WEBX_NP033.pdf	218232 7617992fcf9ce2af36dbacc26b7a28c88b0896f8	no	2
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21	NPL Documents	WEBX_NP034.pdf	826620 deed0596cfcfa858eed3258ffe642f26b912a8fa	no	2
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23	NPL Documents	WEBX_NP036.pdf	1533078 3a027a85896f9a9df7af888988ead219c03dc39f	no	4
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24	NPL Documents	WEBX_NP038.pdf	562207 b24b5a757563947d5dd2cd523e082a1ba8d198a2	no	2
Warnings:					
Information:					
25	NPL Documents	WEBX_NP039.pdf	672764 f9c67f3b4a0f116911aaed740eebd17974f934de	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	209661555	

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.

Electronic Acknowledgement Receipt

EFS ID:	6894727
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	13:35:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	NPL Documents	WEBX_NP207.pdf	8254685 c9abbe6c91fee6f4f858aa0edaa73cc44a3b8729	no	50

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Information:	

2	NPL Documents	WEBX_NP208.pdf	11955143 ba04f12bb65adc663f32c8c6dc7dbbb406d75fc5	no	50
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3	NPL Documents	WEBX_NP209.pdf	10454954 d9523b57355f3d041de98d10d6cdcf226dfd49f4	no	50
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4	NPL Documents	WEBX_NP211.pdf	9311124 dd0426c31ffc6b77a52a4d473a2548e1afe53fc9	no	50
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5	NPL Documents	WEBX_NP212.pdf	8252167 0d44214b47b2f51a34baba3b63cea0b8d6b1f219	no	50
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New Applications Under 35 U.S.C. 111

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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.

Electronic Acknowledgement Receipt

EFS ID:	6876023
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	13:23:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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<u>New Applications Under 35 U.S.C. 111</u>
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<u>National Stage of an International Application under 35 U.S.C. 371</u>
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.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
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:	6901290
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	13:56:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	NPL Documents	WEBX_NP076D.pdf	13610786 2bb702002272975049d583ef13fe8256d478134d	no	110

Warnings:	
Information:	

2	NPL Documents	WEBX_NP076E.pdf	13168142 246bb24379b528b34764122b315981d338aeef5a	no	107
Warnings:					
Information:					
3	NPL Documents	WEBX_NP077.pdf	1019261 9299463e2eea5a15e925b4f08eec8925ca297591	no	6
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4	NPL Documents	WEBX_NP078.pdf	2530978 0877e04da063bed5f9ac51f9153c36bc99a9e671	no	11
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Information:					
5	NPL Documents	WEBX_NP079.pdf	3743644 fe57032da4f76582afc79ea0a7b0c4f0e8f1820e	no	14
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6	NPL Documents	WEBX_NP080.pdf	12792810 5479e078a0bf43effce62d0ebe3210af3d039fa3	no	28
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8	NPL Documents	WEBX_NP082.pdf	1884016 304a2f03ed8d19b5004d371d24085ebce14490f1	no	2
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9	NPL Documents	WEBX_NP083.pdf	4166704 74c5dc90e4344f3a1e70e9d3d6558c5f699e5cae	no	17
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10	NPL Documents	WEBX_NP084.pdf	3450607 95b5e8cdc8b3a9e0c9aba58ec44c6a032910aed8	no	15
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Total Files Size (in bytes):	72681623

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.

Electronic Acknowledgement Receipt

EFS ID:	6890447
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	13:28:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

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3	NPL Documents	WEBX_NP087.pdf	3121017 6f0d42e1b9c9c26ddafc724f650518e6df811c95	no	13
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4	NPL Documents	WEBX_NP088.pdf	1730431 f0c9241f0061e3ce9509f279d110d61d63e96eae	no	9
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5	NPL Documents	WEBX_NP089A.pdf	13770712 d47135e11fc9ffd3d80953ee03ecb965266c4998	no	35
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6	NPL Documents	WEBX_NP089B.pdf	12793925 313229048575e4384016d957e895a79509145c41	no	35
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9	NPL Documents	WEBX_NP092.pdf	6032379 2bf01626133619494eeefe5571cddf710e883642	no	45
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38	NPL Documents	WEBX_NP128.pdf	8776016 2535e4cde182534ef493bac81442fabf4221c6fc	no	31
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41	NPL Documents	WEBX_NP130A.pdf	14468974 f97d7dc7c977ba8f03de8cadf132236d0955fe7b	no	130
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42	NPL Documents	WEBX_NP131.pdf	17777755 22a615cc8a3bb2a21d64afb9407e81366c5b2bb0	no	140
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43	NPL Documents	WEBX_NP132.pdf	19814803 9992c02045b2103aad051cc65189690cce88ef96	no	174
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45	NPL Documents	WEBX_NP134.pdf	7347554 40d1abcdd7d802a246ef7f04fa0b1696a91c58a3	no	72
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46	NPL Documents	WEBX_NP135A.pdf	11783106 9d06786b2051ccdd781ee83af30fff352cb51157	no	112
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47	NPL Documents	WEBX_NP135B.pdf	10986659 830a61002333fcd06c1c25dbbea079b64632eb47	no	100
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50	NPL Documents	WEBX_NP142.pdf	1668893 5216d9e1c28386ffc828b2e3b89d06194a3e43f6	no	11
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51	NPL Documents	WEBX_NP143.pdf	4329134 3695bb0655bfe1cd84ee29d7ec771502057dd0d0	no	27
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52	NPL Documents	WEBX_NP146.pdf	2589865 0da61da2dec01e59b309dab15f0285e321f9c8c5	no	9
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54	NPL Documents	WEBX_NP149A.pdf	15604062 714c04347a207177c16e57a95729f90267f2b833	no	22
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56	NPL Documents	WEBX_NP150.pdf	2379655 7f563497d89b738650d634bcd17543934c8ac024	no	10
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57	NPL Documents	WEBX_NP151.pdf	252023 a40af0956460110535 4eaa0386bb3661e2ec04fe	no	30
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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.

Electronic Acknowledgement Receipt

EFS ID:	6895630
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	13:45:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

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

2	NPL Documents	WEBX_NP260A.pdf	12637015 737ad599c9d3da250232fa1dc6c88e4edff4bb16	no	17
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4	NPL Documents	WEBX_NP261A.pdf	14016508 ce514e4785551991a9c38670b4aff13c55afe047	no	155
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6	NPL Documents	WEBX_NP261C.pdf	17813384 4a93e8177a630546328b988c126992c0bec35938	no	156
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29	NPL Documents	WEBX_NP503.pdf	2157163 4e7fcf13edce949c31500ea185ae596725b047f4	no	18
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32	NPL Documents	WEBX_NP506.pdf	4504436 3101f8d365718e2cb95d7f43e9f80b632794dea5	no	27
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33	NPL Documents	WEBX_NP507.pdf	4504424 bcf167bdd8edd325900b6e0866bd043c3447119c	no	27
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41	NPL Documents	WEBX_NP515.pdf	3013375 51bb507abc122b145ab4db1d6120c2d9a958ac8a	no	16
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44	NPL Documents	WEBX_NP518.pdf	7303815 52cde3e59fc6fe59e62072d60bd6f8b19875ded7	no	45
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52	NPL Documents	WEBX_NP523C.pdf	25533411 d679eb2ab90d20f81e512aa3dcc9e04021cb97d9	no	200
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53	NPL Documents	WEBX_NP523D.pdf	25228009 00efec749cd64bf448989f4421a9e8944c929aa9	no	200
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Filing Date	2007-10-30
First Named Inventor	Arunachalam, Lakshmi
Art Unit	2454
Examiner Name	Viet Duy Vu
Attorney Docket Number	PA5041US

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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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.

PTO/SB/08a (03-09)
Approved for use through 04/30/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	11980185
Filing Date	2007-10-30
First Named Inventor	Arunachalam, Lakshmi
Art Unit	2454
Examiner Name	Viet Duy Vu
Attorney Docket Number	PA5041US

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6948063		2005-09-20	Ganesan et al.	
	2	7076784		2006-07-11	Russell et al.	
	3	7080051		2006-07-18	Kight et al.	
	4	7107244		2006-09-12	Kight et al.	
	5	7120602		2006-10-10	Kitchen et al.	
	6	7146338		2006-12-05	Kight et al.	
	7	7177846		2007-02-13	Moenickheim et al.	
	8	7213003		2007-05-01	Kight et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11980185
	Filing Date	2007-10-30
	First Named Inventor	Arunachalam, Lakshmi
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	9	7240031		2007-07-03	Kight et al.	
	10	7251656		2007-07-31	Keown et al.	
	11	7296004		2007-11-13	Garrison et al.	
	12	7302408		2007-11-27	Engdahl et al.	
	13	7302411		2007-11-27	Ganesan et al.	
	14	7330831		2008-02-12	Biondi et al.	
	15	7334128		2008-02-19	Ganesan et al.	
	16	7366696		2008-04-29	Ganesan et al.	
	17	7366697		2008-04-29	Kitchen et al.	
	18	7383226		2008-06-03	Kight et al.	
	19	7392223		2008-06-24	Ganesan et al.	

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	Filing Date	2007-10-30
	First Named Inventor	Arunachalam, Lakshmi
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	20	7395243		2008-07-01	Zielke et al.	
	21	7340506		2008-03-04	Arunachalam	
	22	60208057		2000-05-31	Krichilsky	

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U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020152200	A1	2002-10-17	Krichilsky et al.	
	2	20030069922	A1	2003-04-10	Arunachalam	
	3	20080091801	A1	2008-04-17	Arunachalam	

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	Filing Date	2007-10-30
	First Named Inventor	Arunachalam, Lakshmi
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

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(**Not for submission under 37 CFR 1.99)**

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First Named Inventor	Lakshmi Arunachalam
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11980185
	Filing Date	2007-10-30
	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	1	'Complaint for Declaratory Judgment of Patent Non/Infringement, Invalidity, and Unenforceability; (Dated July 2, 2009) Microsoft Docket #001 (219 pages)	☐
	2	'Defendant Webxchange Inc.'S Motion To Dismiss Microsoft's Complaint With Prejudice For Lack Of Subject-Matter Jurisdiction, And For Attorneys' Fees (entered August 26, 2009) Microsoft Docket #009	☐
	3	'Microsoft's Opposition To WebXchange, Inc.'s Motion To Dismiss Microsoft's Complaint (dated September 14, 2009) Microsoft Docket #012	☐
	4	Order Dismissing Microsoft (October 30, 2009) Judge Alsup Microsoft Docket #017	☐
	5	Memorandum Opinion Microsoft (October 30, 2009) Judge Farnan Microsoft Docket #018	☐
	6	COMPLAINT filed with Jury Demand against Allstate Corporation, Allstate Insurance Company, Allstate Life Insurance Company, Allstate Financial Services LLC, Allstate Financial LLC - . (Filing fee $ 350, receipt number 03110000000000419775.) - filed by WebXchange Inc.. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Civil Cover Sheet)(lid) (Entered: 03/05/2008), Allstate Docket #1	☐
	7	ANSWER to 1 Complaint, with Jury Demand, COUNTERCLAIM against WebXchange Inc. by Allstate Corporation, Allstate Insurance Company, Allstate Life Insurance Company, Allstate Financial Services LLC, Allstate Financial LLC. (McGeever, Elizabeth) (Entered: 04/25/2008), Allstate Docket #15	☐
	8	ANSWER to 15 Answer to Complaint, Counterclaim Plaintiff WebXchange Inc.'s Answer to Defendant Allstate's Counterclaims by WebXchange Inc..(Heaney, Julia) (Entered: 05/19/2008), Allstate Docket #26	☐
	9	CLAIM CONSTRUCTION OPENING BRIEF [DEFENDANTS' OPENING BRIEF IN SUPPORT OF THEIR PROPOSED CLAIM CONSTRUCTIONS] filed by Allstate Insurance Company, Allstate Life Insurance Company, Allstate Financial Services LLC. (Moore, David) (Entered: 10/29/2008), Allstate Docket #61	☐
	10	CLAIM CONSTRUCTION OPENING BRIEF filed by WebXchange Inc.. (Attachments: # 1 Exhibits A-B)(Heaney, Julia) (Entered: 10/29/2008), Allstate Docket #62	☐
	11	FIRST AMENDED ANSWER, Affirmative Defenses, and Counterclaims to 1 Complaint by Allstate Corporation, Allstate Insurance Company, Allstate Life Insurance Company, Allstate Financial Services LLC, Allstate Financial LLC. (nms) (nms). (Entered: 01/14/2009), (Three Parts) Allstate Docket #90	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11980185
	Filing Date	2007-10-30
	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	12	ANSWER to 90 Amended Answer to Complaint, Counterclaim by WebXchange Inc..(Heaney, Julia) (Entered: 02/02/2009), Allstate Docket #96	☐
	13	MOTION to Bifurcate AND FOR EARLY TRIAL ON THE ISSUE OF INEQUITABLE CONDUCT - filed by FedEx Corporation, FedEx Kinko's Office & Print Services, Inc., FedEx Corporate Services Inc.. (Gaza, Anne) Modified on 3/23/2009 (nms). (Entered: 03/19/2009), Allstate Docket #107	☐
	14	NOTICE OF MOTION re 107 MOTION to Bifurcate AND FOR EARLY TRIAL ON THE ISSUE OF INEQUITABLE CONDUCT; Requesting the following Motion Day: April 17, 2009 (Gaza, Anne) Modified on 3/23/2009 (nms). (Entered: 03/19/2009), Allstate Docket #108	☐
	15	7.1.1 STATEMENT re 107 MOTION to Bifurcate AND FOR EARLY TRIAL ON THE ISSUE OF INEQUITABLE CONDUCT by FedEx Corporation, FedEx Kinko's Office & Print Services, Inc., FedEx Corporate Services Inc.. (Gaza, Anne) Modified on 3/23/2009 (nms). (Entered: 03/19/2009), Allstate Docket #109	☐
	16	REDACTED VERSION of 110 Opening Brief in Support,, by FedEx Corporation, FedEx Kinko's Office & Print Services, Inc., FedEx Corporate Services Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13)(Gaza, Anne) (Entered: 03/23/2009), (Four Parts) Allstate Docket #111	☐
	17	CLAIM CONSTRUCTION OPENING BRIEF Defendants' Opening Brief in Support of Their Proposed Claim Constructions filed by Allstate Insurance Company, Allstate Life Insurance Company, Allstate Financial Services LLC. (McGeever, Elizabeth) (Entered: 03/23/2009), Allstate Docket #112	☐
	18	CLAIM CONSTRUCTION OPENING BRIEF filed by WebXchange Inc.. (Attachments: # 1 Exhibits A-B)(Heaney, Julia) (Additional attachment(s) added on 3/25/2009: # 2 Main Document) (nms). (Entered: 03/23/2009), (Two Parts) Allstate Docket #114.	☐
	19	PLAINTIFF WEBXCHANGE INC.'S CORRECTED ANSWERING BRIEF IN OPPOSITION TO DEFENDANTS' MOTION TO BIFURCATE, AND FOR EARLY TRIAL ON, THE ISSUE OF INEOUITABLE CONDUCT /// CERTIFICATE OF SERVICE I, the undersigned, hereby certify that on May 13, 2009, I electronically filed the foregoing with the Clerk of the Court using CM/ECF, which will send notification of such filing(s) to the following: /// CERTIFICATE OF SERVICE I, the undersigned, hereby certify that on May 13, 2009, I electronically filed the foregoing	☐
	20	"DECLARATION OF ERIC 3. STIEGLITZ IN SUPPORT OFPLAINTIFF WEBXCHANGE INC.'S ANSWERING BRIEF IN OPPOSITIONTO DEFENDANTS' MOTION TO BIFURCATE, AND FOR EARLY TRIAL ON,THE ISSUE OF INEQUITABLE CONDUCT // REDACTED - PUBLIC VERSION / signed April 27, 2009CERTIFICATE OF SERVICEI, the undersigned, hereby certify that on May 13, 2009, I electronically filed the foregoing with the Clerk of the Court using CM/ECF, which will send notification of such filing(s) to the following: (Two Parts)", Allstate Docket #132.	☐
	21	Case 1:08-cv-00131-JJF Document 142 Filed 06/01/2009 Page 1 of 19 // REPLY BRIEF IN SUPPORT OF DEFENDANTS' MOTION TO BIFURCATE, AND 11011 EARLY TRIAL ON, THE ISSUE OF INEQUITABLE CONDUCT /// REDACTED PUBLIC VERSION /// CERTIFICATE OF SERVICE I hereby certify that on June 1, 2009, I caused to be served by electronic mail the foregoing document and electronically filed the same with the Cleric of Court using CM/ECF which will send notification of such filing(s) to the following: 'Exhibits A-W to Redacted Reply	☐
	22	"Case 1:08-cv-00131-JJF Document 146 Filed 06/18/2009 Page 1 of 5 // MOTION FOR LEAVE TO AMEND ANSWER,AFFIRMATIVE DEFENSES, AND COUNTERCLAIMS // Filed: June 18, 2009", Allstate Docket #146.	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11980185
	Filing Date	2007-10-30
	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	23	"DEFENDANTS' OPENING BRIEF IN SUPPORT OF ITS MOTION FOR LEAVE TOAMEND ANSWER, AFFIRMATIVE DEFENSES, AND COUNTERCLAIMS // Case 1:08-cv-00131-JJF, Filed 06/18/2009 Page 1 of 12 ", Allstate Docket #147.	☐
	24	PLAINTIFF WEBXCHANGE INC.'S ANSWERING BRIEF IN OPPOSITION TO ALLSTATE'S SECOND MOTION FOR LEAVE TO AMEND ITS ANSWER, C.A. No. 08-131 (JJF), Allstate Docket #148.	☐
	25	COMPLAINT filed with Jury Demand against Dell Inc. -. (Filing fee $ 350, receipt number 0311000000000000419782.) - filed by WebXchange Inc.. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Civil Cover Sheet)(lid) (Entered: 03/05/2008), Dell Docket #1.	☐
	26	ANSWER to 1 Complaint with Jury Demand, COUNTERCLAIM [DELL INC.'S ANSWER, DEFENSES AND COUNTERCLAIMS TO WEBXCHANGE INC.'S COMPLAINT FOR PATENT INFRINGEMENT] against Dell Inc. by Dell Inc..(Horwitz, Richard) (Entered: 03/26/2008), Dell Docket #8.	☐
	27	ANSWER to 8 Answer to Complaint, Counterclaim Plaintiff WebXchange Inc.'s Answer to Defendant Dell's Counterclaims by WebXchange Inc..(Heaney, Julia) (Entered: 04/18/2008), Dell Docket #11.	☐
	28	CLAIM CONSTRUCTION OPENING BRIEF [DEFENDANTS' OPENING BRIEF IN SUPPORT OF THEIR PROPOSED CLAIM CONSTRUCTIONS] filed by Dell Inc.. (Moore, David) (Entered: 10/29/2008), Dell Docket #45.	☐
	29	CLAIM CONSTRUCTION OPENING BRIEF filed by WebXchange Inc.. (Attachments: # 1 Exhibits A-B)(Heaney, Julia) (Entered: 10/29/2008), Dell Docket #46.	☐
	30	REPLY BRIEF re 37 MOTION for Discovery filed by Dell Inc.. (Attachments: # 1 Exhibit A - L, # 2 Exhibit M - S)(Gaza, Anne) (Entered: 10/31/2008), Dell Docket #47.	☐
	31	MOTION to Amend/Correct Answer and Counterclaims to Complaint (UNOPPOSED) - filed by Dell Inc.. (Attachments: # 1 Notice of Motion, # 2 Text of Proposed Order, # 3 Exhibit A (First Amended Answer), # 4 Exhibit B (Blackline of First Amended Answer))(Moore, David) Modified on 1/13/2009 (nms). (Entered: 01/12/2009), Dell Docket #72.	☐
	32	ORDER Granting 72 Defendant Dell Inc.'s Unopposed Motion to Amend its Answer and Counterclaims to Webexchange Inc's Original Complaint for Patent Infringement. Signed by Judge Joseph J. Farnan, Jr. on 1/13/2009. (nms) (Entered: 01/14/2009), Dell Docket #74.	☐
	33	Dell Inc.'s FIRST AMENDED ANSWER and Counterclaims to 1 Complaint by Dell Inc.. (nms) (Entered: 01/14/2009), Dell Docket #75.	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11980185
	Filing Date	2007-10-30
	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	34	ANSWER to 75 Amended Answer to Complaint, Counterclaim by WebXchange Inc..(Heaney, Julia) (Entered: 02/02/2009), Dell Docket #79.	☐
	35	MOTION to Bifurcate AND FOR EARLY TRIAL ON, THE ISSUE OF INEQUITABLE CONDUCT - filed by FedEx Corporation, FedEx Kinko's Office & Print Services, Inc., FedEx Corporate Services Inc.. (Gaza, Anne) Modified on 3/23/2009 (nms). (Entered: 03/19/2009), Dell Docket #85.	☐
	36	NOTICE OF MOTION re 85 MOTION to Bifurcate AND FOR EARLY TRIAL ON THE ISSUE OF INEQUITABLE CONDUCT; Requesting the following Motion Day: April 17, 2009 (Gaza, Anne) Modified on 3/23/2009 (nms). (Entered: 03/19/2009), Dell Docket #86.	☐
	37	7.1.1 STATEMENT re 85 MOTION to Bifurcate AND FOR EARLY TRIAL ON THE ISSUE OF INEQUITABLE CONDUCT by FedEx Corporation, FedEx Kinko's Office & Print Services, Inc., FedEx Corporate Services Inc.. (Gaza, Anne) Modified on 3/23/2009 (nms). (Entered: 03/19/2009), Dell Docket #87.	☐
	38	REDACTED VERSION of 88 Opening Brief in Support,, by FedEx Corporation, FedEx Kinko's Office & Print Services, Inc., FedEx Corporate Services Inc.. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4, # 5 Exhibit 5, # 6 Exhibit 6, # 7 Exhibit 7, # 8 Exhibit 8, # 9 Exhibit 9, # 10 Exhibit 10, # 11 Exhibit 11, # 12 Exhibit 12, # 13 Exhibit 13)(Gaza, Anne) (Entered: 03/23/2009), (Three Parts) Dell Docket #89.	☐
	39	CLAIM CONSTRUCTION OPENING BRIEF Defendants' Opening Brief in Support of Their Proposed Claim Constructions filed by Dell Inc.. (McGeever, Elizabeth) (Entered: 03/23/2009), Dell Docket #90.	☐
	40	CLAIM CONSTRUCTION OPENING BRIEF filed by WebXchange Inc.. (Attachments: # 1 Exhibits A-B)(Heaney, Julia) (Additional attachment(s) added on 3/25/2009: # 2 Main Document) (nms). (Entered: 03/23/2009), (Two parts) Dell Docket #92.	☐
	41	Defendant Dell Inc.'s Motion for Leave to Amend Its Answer (to file a Second Amended Answer); Jury Trial Demanded (entered July 23, 2009) Dell Docket #130.	☐
	42	Plaintiff WebXchanges Inc.'s Answering Brief in Opposition to Dell's Second Motion for Leave to Amend its Answer (entered August 10, 2009) Dell Docket #134.	☐
	43	Defendant Dell Inc.'s Opening Brief in Support of Its Motion for Leave to Amend Answer (entered August 11, 2009) Dell Docket #136.	☐
	44	Declaration of Charlotte Pontillo In Support Of WebXchange Inc.'s Answering Brief In Opposition to Dell's Second Motion for Leave to Amend Its Answer; (entered August 12, 2009) Dell Docket #137.	☐

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	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	45	Defendant Dell Inc.'s Reply Brief in Support of Its Motion for Leave to Amend Answer (entered August 20, 2009) Dell Docket #138.	☐
	46	Order, Judge Stark, Dell Docket #139.	☐
	47	COMPLAINT filed with Jury Demand against FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc. -. (Filing fee $ 350, receipt number 03110000000000419793.) - filed by WebXchange Inc.. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Civil Cover Sheet)(lid) (Entered: 03/05/2008), FedEx Docket #1	☐
	48	ANSWER to 1 Complaint, with Jury Demand, COUNTERCLAIM against WebXchange Inc. by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc..(Gaza, Anne) (Entered: 04/25/2008), FedEx Docket #13.	☐
	49	ANSWER to 13 Answer to Complaint, Counterclaim Plaintiff WebXchange Inc.'s Answer to Defendant FedEx's Counterclaims by WebXchange Inc..(Heaney, Julia) (Entered: 05/19/2008), FedEx Docket #24.	☐
	50	CLAIM CONSTRUCTION OPENING BRIEF [DEFENDANTS' OPENING BRIEF IN SUPPORT OF THEIR PROPOSED CLAIM CONSTRUCTIONS] filed by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc.. (Moore, David) (Entered: 10/29/2008), FedEx Docket #58.	☐

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Attorney Docket Number	PA5041US

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	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	1	CLAIM CONSTRUCTION OPENING BRIEF filed by WebXchange Inc.. (Attachments: # 1 Exhibits A-B)(Heaney, Julia) (Entered: 10/29/2008), FedEx Docket #59.	☐
	2	MOTION to Amend/Correct 13 Answer to Complaint, Counterclaim - filed by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc.. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C)(Gaza, Anne) (Entered: 01/12/2009), FedEx Docket #89.	☐
	3	NOTICE OF MOTION by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc. re 89 MOTION to Amend/Correct 13 Answer to Complaint, Counterclaim MOTION to Amend/Correct 13 Answer to Complaint, Counterclaim ; Requesting the following Motion Day: February 19, 2009 (Gaza, Anne) (Entered: 01/12/2009), FedEx Docket #90.	☐
	4	SEALED OPENING BRIEF in Support re 89 MOTION to Amend/Correct 13 Answer to Complaint, Counterclaim MOTION to Amend/Correct 13 Answer to Complaint, Counterclaim filed by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc..Answering Brief/Response due date per Local Rules is 1/30/2009. (Gaza, Anne) (Entered: 01/12/2009), FedEx Docket #91	☐
	5	ORDER Granting 89 Unopposed Motion for Leave to Amend Answer. Signed by Judge Joseph J. Farnan, Jr. on 1/13/2009. (nms) (Entered: 01/14/2009), FedEx Docket #96.	☐
	6	FIRST AMENDED ANSWER, Affirmative Defenses, and Counterclaims to Plaintiff re 1 Complaint, with Jury Demand by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc..(nms) (Entered: 01/14/2009), FedEx Docket #97.	☐
	7	REDACTED VERSION of 91 Opening Brief in Support, by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc.. (Attachments: # 1 Exhibit A - D)(Gaza, Anne) (Entered: 01/21/2009), FedEx Docket #98.	☐
	8	Amended ANSWER to 97 Answer to Complaint, Counterclaim by WebXchange Inc..(Heaney, Julia) (Entered: 02/02/2009), FedEx Docket #100.	☐
	9	MOTION to Bifurcate AND FOR EARLY TRIAL ON, THE ISSUE OF INEQUITABLE CONDUCT - filed by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc.. (Gaza, Anne) Modified on 3/23/2009 (nms). (Entered: 03/19/2009), FedEx Docket #108.	☐
	10	NOTICE OF MOTION re 108 MOTION to Bifurcate AND FOR EARLY TRIAL ON, THE ISSUE OF INEQUITABLE CONDUCT; Requesting the following Motion Day: April 17, 2009 (Gaza, Anne) Modified on 3/23/2009 (nms). (Entered: 03/19/2009), FedEx Docket #109.	☐
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	Attorney Docket Number	PA5041US

	12	CLAIM CONSTRUCTION OPENING BRIEF Defendants' Opening Brief in Support of Their Proposed Claim Constructions filed by FedEx Corporation, FedEx Kinko's Office & Print Services Inc., FedEx Corporate Services Inc.. (McGeever, Elizabeth) (Entered: 03/23/2009), FedEx Docket #113.	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11980185
	Filing Date	2007-10-30
	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

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	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

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PTO/SB/08a (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

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Filing Date	2007-10-30
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Art Unit	2454
Examiner Name	Viet Duy Vu
Attorney Docket Number	PA5041US

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	Filing Date	2007-10-30
	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

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	5	U.S. application 11/980,185 prosecution history filed 2008, prosecution history as of March 12, 2009 WBX263.	☐
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	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	12	09863704 Copy of Response to Non-Final Office Action 08-21-2007, WBX503.	☐
	13	09863704 Copy of Response to Non-Final Office Action 11-28-2008, WBX504.	☐
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	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	23	09863704 RCE 06-30-2009, WBX514.	☐
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	Application Number	11980185
	Filing Date	2007-10-30
	First Named Inventor	Lakshmi Arunachalam
	Art Unit	2454
	Examiner Name	Viet Duy Vu
	Attorney Docket Number	PA5041US

	34	Arunachalam , 11/980,185_Duty of Candor Rule 56 Disclosure, 2/11/09, WBX220.	☐
	35	Arunachalam , 11/980,185_Duty of Candor Rule 56 Disclosure, 3/4/09, WBX221.	☐

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Filing Date	2007-10-30
First Named Inventor	Lakshmi Arunachalam
Art Unit	2454
Examiner Name	Viet Duy Vu
Attorney Docket Number	PA5041US

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	/Tam Thanh Pham/	Date (YYYY-MM-DD)	2010-01-28
Name/Print	Tam Thanh Pham	Registration Number	50565

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.**

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S):	Lakshmi Arunachalam
APPLICATION NO.:	11/980,185
FILED:	October 30, 2007
TITLE:	Method and Apparatus for Enabling Real-Time Bi-Directional Transactions on a Network
EXAMINER:	Viet Duy Vu
GROUP ART UNIT:	2454
ATTY.DKT.NO.:	PA5041US

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INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56, and 1.97-1.98

SIR:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicant's duty of disclosure as defined by 37 C.F.R. § 1.56. No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference on this list an admission that it is prior art or pertinent to this application.

Applicant has enclosed the applicable fee of $180.00 with this submission, in accordance to C.F.R. § 1.17(p). If more fees are due, however, the Commissioner is hereby authorized to charge any necessary fees to Account Number 06-0600.

Respectfully submitted,
Lakshmi Arunachalam

January 28, 2010

By: /Tam Thanh Pham/

Tam Thanh Pham, Reg. No. 50,565
Carr & Ferrell *LLP*
2200 Geng Road
Palo Alto, CA 94303
TEL: (650) 812-3400
FAX: (650) 812-3444

Electronic Patent Application Fee Transmittal

Application Number:	11980185
Filing Date:	30-Oct-2007
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Filer:	TamThanh Thi Pham/Bindi Patel
Attorney Docket Number:	PA5041US

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:	6904859
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	14:24:43
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	649
Deposit Account	060600
Authorized User	

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Electronic Acknowledgement Receipt

EFS ID:	6894923
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	13:41:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

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4	NPL Documents	WEBX_NP156.pdf	18746363 f4af5e1e1beea7b48bb9fe1f036a3f3ff6317bdc	no	162
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5	NPL Documents	WEBX_NP157.pdf	14276301 34e917b1f623e60d106c3288ba2dc771c69ae9b5	no	172
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47	NPL Documents	WEBX_NP200.pdf	195523 9c7cb029b5f52e84c2a5c0ba41ff4b9ec89e0989	no	2
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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.

<u>New Applications Under 35 U.S.C. 111</u>
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.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
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.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
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:	6903878
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	29-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	14:13:30
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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29	NPL Documents	WEBX_NP176A.pdf	12425361 a271c23bc91f5560dd50c24603aa7c8b994ebe67	no	111
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33	NPL Documents	WEBX_NP176E.pdf	13307044 2bd4ee611c42ebd31bd238a0075687e01ad05f5f	no	120
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34	NPL Documents	WEBX_NP176F.pdf	13243428 30895f8fe2a5f619f02c7a8ea77ee13732358ef5	no	130
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39	NPL Documents	WEBX_NP176K.pdf	14981221 826abf0cd59fade063333abf01867309a89ba2b1	no	136
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44	NPL Documents	WEBX_NP180.pdf	49781 31256900a945cc980916d232bfbc792804aebf82	no	21
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45	NPL Documents	WEBX_NP181.pdf	7258966 05e4338ff78d7f573b4fedcbad530d20214462c7	no	101
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46	NPL Documents	WEBX_NP182.pdf	17233724 be88814a0cbdf021879b3421468f65b82f524b66	no	233
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47	NPL Documents	WEBX_NP183.pdf	111883 eb2728a60ce7cc4bc35fe336f868f1f670212500	no	1
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48	NPL Documents	WEBX_NP200.pdf	195523 9c7cb029b5f52e84c2a5c0ba41ff4b9ec89e0989	no	2
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50	NPL Documents	WEBX_NP202.pdf	11340715 41532ba66a1e0b0173d6223325d80600377989bb	no	50
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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.

Electronic Acknowledgement Receipt

EFS ID:	6858753
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	28-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	20:48:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

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

2	NPL Documents	MSFT_DI001B.pdf	17766932 8bc3eb7411bc828d1dd60230e50ad5dae281689d	no	21
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4	NPL Documents	MSFT_DI001C.pdf	25251304 380eef4c58731537c807533664c245158a992409	no	64
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5	NPL Documents	MSFT_DI001D.pdf	24035796 5c5ff04b4ab61a2df801900b429c1ca3a552ed0d	no	67
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7	NPL Documents	MSFT_DI012.pdf	9977319 859a6c1ef32acc9bbfcad2e6e9b07722659de115	no	27
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8	NPL Documents	MSFT_DI018.pdf	8383476 8944e245eec0a8d2fd4f73fc165256b66f0144f0	no	12
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Information:					
		Total Files Size (in bytes):	736604810		

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<u>New Applications Under 35 U.S.C. 111</u>
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.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
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.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
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:	6866671
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	28-JAN-2010
Filing Date:	30-OCT-2007
Time Stamp:	21:14:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	NPL Documents	DELL_DI086.pdf	1639529 76ad80d9f530a15a967f8ad5a8622cbd42501acf	no	4

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2	NPL Documents	DELL_DI087.pdf	1741614 80ba27956c3f15b29df445648127ebbe43f4c8e4	no	4
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3	NPL Documents	DELL_DI089A_1.pdf	9627494 e0f058a4d8dd5565853e11b1724bab7fd717a9fd	no	61
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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.

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/980,185	10/30/2007	Lakshmi Arunachalam	PA5041US	5863

22830 7590 01/06/2010

CARR & FERRELL LLP
2200 GENG ROAD
PALO ALTO, CA 94303

EXAMINER	
VU, VIET DUY	

ART UNIT	PAPER NUMBER
2454	

MAIL DATE	DELIVERY MODE
01/06/2010	PAPER

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.

Office Action Summary	Application No.	Applicant(s)	
	11/980,185	ARUNACHALAM, LAKSHMI	
	Examiner	Art Unit	
	Viet Vu	2454	

-- 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 *19 November 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ 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

4)☒ Claim(s) *1-5,7-13,15-17,53-59,72-79 and 83-85* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-13,15-17,53-59,72-79 and 83-85* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2007* 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).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).

a)☐ All b)☐ Some * c)☐ None of:

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)).

* 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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Applicant is requested to update status of related applications cited in page 1 of the specification, i.e., providing patent numbers where appropriate.

Art Rejections:

2. The following is a quotation of 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 negatived by the manner in which the invention was made.

3. Claims 1-5, 7-13, 15-17, 53-59, 72-79 and 83-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers et al, U.S. pat. No. 5,793,964.

Per claim 1, Rogers discloses a method for delivering complete multimedia transactional services over the Internet comprising:

a) receiving a request for access multimedia content from a user, wherein the request includes data structure specific to a web application (see col 9, lines 59-67 and col 10, lines 59-62);

b) executing an exchange component (web server) to provide the user with a choice of currently available contents/services accessible by the exchange component (col 9, lines 45-58):

c) receiving a selection of a multimedia content from the user (col 10, lines 17-21);

d) providing the requested content/service to the user in real-time, wherein providing the requested content includes routing the data structure (see col 10, lines 44-62).

Rogers does not explicitly teach enabling user to select desired content from a sub-menu. An official notice is taken that the use of sub-menus in user interface is well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize sub-menus in Rogers because it would have provided better user interface, i.e., reducing clutters.

Per claims 2-3, Rogers teaches delivering various types of services/contents including retails, banking, video, etc., (see col 14, lines 55-67).

Per claim 4, it is noted that the use of ads in web contents is well known in the art.

Per claim 5, Rogers teaches delivering content to the user for a fee (see col 10, lines 36-41).

Per claims 7-9, Rogers teaches using a plurality of switching and data exchange components to provide different types of services to users (see col 15-16).

Claims 10-13, 15-17, 53-59, are similar in scope as that of claims 1-5 and 7-9.

Per claims 72-79 and 83-85, Rogers does not teach performing a specific banking transaction. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Rogers's invention to perform any conventional financial transactional services including banking transactions (see col 9, lines 45-58 and col 14, line 55 - col 15, line 22).

Conclusion:

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viet Vu whose telephone number is 571-272-3977. The examiner can normally be reached on Monday through Friday from 7:00am to 4:00pm. The Group general information number is 571-272-2100. The Group fax number is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached on 571-272-1915.

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access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Viet Vu/
Primary Examiner, Art Unit 2454
01/04/10

Notice of References Cited	Application/Control No. 11/980,185	Applicant(s)/Patent Under Reexamination ARUNACHALAM, LAKSHMI	
	Examiner Viet Vu	Art Unit 2454	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,249,291	06-2001	Popp et al.	345/473
*	B	US-5,793,964	08-1998	Rogers et al.	709/202
	C	US-			
	D	US-			
	E	US-			
	F	US-			
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	M	US-			

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
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CONFIRMATION NO. 5863

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/980,185	10/30/2007	709	2454	PA5041US

APPLICANTS

Lakshmi Arunachalam, Menlo Park, CA;

**** CONTINUING DATA ***************************

This application is a CIP of 09/792,323 02/23/2001 PAT 7,340,506
which is a CIP of 08/879,958 06/20/1997 PAT 5,987,500
which is a DIV of 08/700,726 08/05/1996 PAT 5,778,178
and claims benefit of 60/006,634 11/13/1995

**** FOREIGN APPLICATIONS ***************************

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11/28/2007

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and Acknowledged /VIET VU/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CA	13	110	13

ADDRESS

CARR & FERRELL LLP
2200 GENG ROAD
PALO ALTO, CA 94303
UNITED STATES

TITLE

Method and apparatus for enabling real-time bi-directional transactions on a network

FILING FEE RECEIVED		
3880	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	16649	transaction$2 near3 (web internet)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/03 14:05
L2	196379	multimedia multi-media	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/03 14:05
L3	273	1 same 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/03 14:05
L4	15961747	@ad<"19951113"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/03 14:05
L5	1	3 and 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/03 14:05
L6	39	1 and 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/03 14:06
L7	526277	realtime (real adj time)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/03 14:44

L8	6	6 and 7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/01/03 14:44

EAST Search History (Interference)

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Sheet 1 of 1

Complete if Known	
Application Number	11/280,185
Filing Date	10/30/2007
First Named Inventor	Lakshmi Arunachalm
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

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		US-			
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		Assign Inter Partes Reexm	01/10/2009	USPTO		
		Req Inter Partes Reexam	12/19/2009	Microsoft Corp.		

Examiner Signature	/Viet Vu/	Date Considered	01/03/2010

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 1

Complete if Known	
Application Number	11/980,185
Filing Date	10/30/2007
First Named Inventor	Lakshmi Arunachalam
Art Unit	
Examiner Name	
Attorney Docket Number	

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		Appendices A-C Related				
		interpartes reexam				
		95/001,129	12/19/200			
		Part of 08/168,519 file	12/16/1993			
		Ex. 5, 95/001,129				

Examiner Signature	/Viet Vu/	Date Considered	01/03/2010

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Sheet | | of | |

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Application Number	11/980,185
Filing Date	10/30/07
First Named Inventor	LAKSHMI ARUNACHALAM
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	1	~~US~~ A COBRA BASED FRAMEWORK - - ARSHAD et al	1999		
	2	US- GENERIC MET INFO BASE BROWSER - PAVLOU et al.			
	3	US- METRO DISTRIB INFO SYSTEM - CHUNG et al	1995		
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	5	US- BROADVISION 1-1 DEV. GUIDE -	1995	CONTENTS ONLY - Vii	
	6	US- BROADVISION - PGM REF	1995	PP 4-5, 21, 30, 97	
	7	US- BROADVISION - TECH OVERVIEW	1995	PP 1-3	
	8	US- DATABASE ACCESS INTER-NETWORKS - RAATIKAINEN		P-1	
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	16	RFC 1065	1988	NETWORK WORKING GROUP		
	17	RFC 1318	1992	NETWORK WORKING GROUP		
	18	RFC 1283	1991	NETWORK WORKING GROUP		
	19	RFC 1516	1993	NETWORK WORKING GROUP		

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Sheet 1 of 4

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Art Unit	
Examiner Name	
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Filing Date	10-30-2007
First Named Inventor	Lakshmi Arunachalm
Art Unit	
Examiner Name	
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DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	
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		US- 6,055,514	4-00	WREN	
		US- 5,892,821	4-99	TURNER	
		US- 5,828,666	10-98	FOCSANEANU et al	
		US- 5,557,780	9-96	EDWARDS et al	
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		US- 5,893,076	4-99	HAFNER et al	
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		US- 6,049,785	4-00	GIFFORD	
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		US- 5,724,424	3-98	GIFFORD	
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		US- 6,128,315	10-00	TAKEUCHI	
		US- 6,185,609	2-01	RANGARAJAN et al	

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		US- 5,864,866	1-99	HENCKEL et al	
		US- 5,913,061	6-99	GUPTA et al	
		US- 6,093,053	7-00	BOESCH et al	
		US- 6,192,250	2-01	BUSKENS et al	
		US- 6,049,819	4-00	BUCKLE et al	
		US- 5,329,619	7-94	PAGE et al	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 4 of 4

Complete if Known	
Application Number	11/980,185
Filing Date	10-30-2007
First Named Inventor	Lakshmi Arunachalm
Art Unit	
Examiner Name	
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	1	LAMOND, Keith, "Credit Card Transactions Real World and Online" http://www.virtualshcool.edu/mon/ElectronProperty/klamond/credit_card/htm, pp 1-16, 1996	
	2	COX, Benjamin et al., "Netbill Security and Transaction Protocol", Carnegie Millon University, Pittsburgh, PA 15212-3890	
	3	"Tymnet", Wikipedia, the free encyclopedia, http://en.wikipedia.org/wiki/tymnet, May 2007.	
	4	HICKEY, "Shopping at Home: One Modem Line, No Waiting", Home PC, Dec. 1, 1994, p. 307, Dialog, File 647, Acc# 01038162	
	5	LANG, "Cashing in: The Rush is on to Buy and Sell on the Internet but Conflicting Schemes Leave Marketers on Sidelines for Now", Advertising Age, Dec. 19, 1994, p. 11, Dialog File 16, Acc# 05419137	
	6	BANKS, Michael A., "America Online: A Graphics-based Success", Link-Up, Jan/Feb 1992	
	7	"Hot Jave", Wikipeda, the free encycliopedia, http://en.wikipedia.org/wiki/HotJava, May 2007	

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Application Number	11/980,185
Filing Date	10-30-2007
First Named Inventor	Lakshmi Arunachalm
Art Unit	2154
Examiner Name	
Attorney Docket Number	

	1	Lichty, Tom, "America Online tour Guide", MacIntosh Edition, Version 2, Preface, Chapter 1, Ventanna Press, 1992	
	2	Lichty, Tom, "America Online tour Guide", MacIntosh Edition, Version 2, Preface, Chapter 3, Ventanna Press, 1992	
	3	Lichty, Tom, "America Online tour Guide", MacIntosh Edition, Version 2, Preface, Chapter 8, Ventanna Press, 1992	
	4	Lichty, Tom, "America Online tour Guide", MacIntosh Edition, Version 2, Preface, Chapter 10, Ventanna Press, 1992	

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Filing Date	10/30/07
First Named Inventor	LAKSHMI ARUNACHALAM
Art Unit	
Examiner Name	
Attorney Docket Number	

~~U.S. PATENT DOCUMENTS~~

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- BROAD VISION ONE-TO-ONE			P vii
	(1)	US- DEVELOPERS GUIDE			
		US-			
	(2)	US- BROAD VISION ONE-TO-ONE			
		US- INSTALLATION & SYSTEM ADMIN GUIDE			
		US-			
	(3)	US- BROAD VISION ONE-TO-ONE			PP 1-3
		US- TECHNICAL OVERVIEW			
		US-			
	(4)	US- BROAD VISION ONE-TO-ONE,			
		US- DYNAMIC COMMAND CR USER'S GUIDE			
		US-			
	(5)	US- PRODIGY MADE EASY 2ND ED			
		US-			
	(6)	US- COMPUTER NETWORKS - SYS APPROACH			
		US- PETERSON & DAVIE			
		US-			
	(7)	US- UNTANGLING THE WORLD-WIDE-WEB			
		US- REILLY, CAHILL & HINCHEY			

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		THE SIMPLE BOOK - AN INTRO				
	(8)	TO INTERNET MANAGEMENT				

Examiner Signature		Date Considered	

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	(9)	US- GOOGLE GROUPS COMP. DOC - RFC'S 1212			
		US- 1213 ON CONCISE DEFINITIONS			
		US- MIB AND MIB II			
		US-			
		US-			
	(10)	US- SMALL TALK OBJECT MODEL			
		US- http://www.objs.com/x3h7/smlktalk.htm			
		US-			
	(11)	US- A PROTOCOL & SERVER FOR A DISTRIB -			
		US- DIGITAL TECH REPORT LIBRARY			
		US-			
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	(12)	US- DISTRIBUTED APPLICATIONS IN A			
		US- HYPERMEDIA SETTING - BHARAT			
		US- & CAROELLI			
		US-			
	(13)	US- DIENST: IMPLEMENTATION REF MANUAL			
		US- LAGOZE, SHAW, DAVIS & KRAFFT			
		US-			

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	(14)	OBJECT WRAPPING FOR (WWW)				
		EDWARDS			1995	
		UNDER STANDING DCE CHART-3				
	(15)	DCE - THE NETWORK AS COMPUTER ETC				

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		US- VISUAL OBLIQ — SYS FOR BLDG DISTRIB			MULTI-USER
	(16)	US- APPS BY DIRECT MANIPULATION			
		US- BHARAT & BROWN			
		US-			
	(17)	US- USING THE WEB AS A SURVEY TOOL			
		US- PITKOW & RECKER			
		US-			
	(18)	US- COMPUSERVE FOR WINDOWS			
		US- BANKS			
		US-			
	(19)	US- DISTRIBUTED OBJECT TECHNOLOGY IN			
		US- FINANCIAL SERVICE INDUSTRY			
		US- SUN MICROSYSTEMS			
		US-			
	(20)	US- BUSINESS WIRE - OPEN MARKET RELEASES -			
		US-			
		US-			
	(21)	US- DISTRIBUTED COMPUTING - A PRACTICAL			
		US- SYNTHESIS — UMAR			

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	(22)	ORBIX — PROGRAMMER'S GUIDE				
		IONA TECHNOLOGIES LTD				
	(23)	TRAVEL SERVICES — JOIN COMPUSERVE				
		& SEE THE WORLD			1987	

Examiner Signature	/Viet Vu/	Date Considered	01/03/2010

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11/980,185
	Filing Date	OCT. 30, 2007
	First Named Inventor	LAKSHMI ARUNACHALAM
	Art Unit	
	Examiner Name	
	Attorney Docket Number	

	1	Order Granting Defendant's Motion to Dismiss - Northern District of California 02/17/2009	☐

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11980185	ARUNACHALAM, LAKSHMI
	Examiner	**Art Unit**
	Viet Vu	2454

SEARCHED

Class	Subclass	Date	Examiner
709	217, 219, 223, 225, 227, 229, 250	1/3/10	vv
719	328, 329	1/3/10	vv

SEARCH NOTES

Search Notes	Date	Examiner
EAST Text only - see printout	1/3/10	vv

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

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Attorney Docket Number	

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(1) MICROSOFT CORPORATION'S NOTICE OF MOTION AND MOTION FOR LEAVE TO AMEND (COMPLAINT)

US DISTRICT COURT - NORTHERN DISTRICT OF CALIFORNIA

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Sheet 1 of 8

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First Named Inventor	Lakshmi Arunachalam
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		Dr. GUI on Components,		http://msdn.microsoft.com/library/welcome/	
		COM, and ATL		dsmsdn/msdn-drguion020298.htm	
	1	Part 1: You're Gonna	2-2-1998		
		Do COM?...			
		Part 2: Basics of COM	2-9-1998	"	"
		Part 3: Getting Objects			
		and Interfaces	2-23-1998	"	"
		Part 4: The Class			
		Object and Class Factory	3-2-1998	"	"
		Part 5: Implementing			
		an Object	3-30-1998	"	"
		Part 6: Using our COM			
		Object in Visual Basic...	4-27-1998	"	"
		Part 7: Using our			
		Object from Visual C++	5-29-1998	"	"
		Part 8: Get Smart!			
		Using our COM Object...	7-30-1998	"	"
	2	Microsoft.com.news		http://www.microsoft.com/	com/news/drgui.asp
		Dr. GUI's Gentle Guide to COM	~11-1-1999		

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	3	Taking the Splash Diving into ISAPI Programming	1/1997	Christian Gross	http://www.microsoft.com/mind/0197/isapi-htm
	4	Chapter 1, NSAPI Basics	12/22/1997		http://developer.netscape.com/docs/manuals/enterprise/nsapi/sdrop.htm
	5	The Common Gateway Interface	Retrieved 5/22/2001		http://hoohoo.ncsa.uiuc.edu/cgi/primer.html
	6	Open Market Content Driven eBusiness Solutions	Retrieved 5/15/2001		http://www.openmarket.com/cgi-bin/gx.cgi/AppLogic+FTContentServer?pagename=FutureTense./Apps/Xcelerate/View&c=Collec...
	7	OpenMarket Content Server	5/15/2001		http://www.openmarket.com/cgi-bin/gx.cgi/AppLogic+FTContentServer?pagename=FutureTense/Apps/Xcelerate/Render&c=Artic...

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	8	Open Market Content Centre	Retrieved 5/15/2001	http://www.openmarket.com/cgi-bin/gx.cgi/AppLogic+FTContentServer?pagename=FutureTense/Apps/Xcelerate/Render&c=Artic...	
	9	OpenMarket Integration Centre	5/15/2001	"	"
	10	OpenMarket Personalization Centre	5/15/2001	"	"
	11	OpenMarket Catalog Centre	5/15/2001	"	"
	12	OpenMarket Marketing Studio	5/15/2001	"	"
	13	OpenMarket Satellite Server	5/15/2001	"	"

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	14	OpenMarket Commerce Products	5/15/2001 Retrieved	http://www.openmarket.com/cgi-bin/gx.cgi/Apologic+FTContentServer?pagename=FutureTense/Apps/Xcelerate/...	
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	16	OpenMarket Shopsite	5/15/2001	"	"
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 5 of 8

Complete if Known	
Application Number	11/980,185
Filing Date	Oct. 30, 2007
First Named Inventor	Lakshmi Arunachalam
Art Unit	
Examiner Name	
Attorney Docket Number	

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Sheet 1 of 1

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Filing Date	10-30-2007
First Named Inventor	Lakshmi Arunachalam
Art Unit	
Examiner Name	
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First Named Inventor	Arunachalam
Art Unit	
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		WO 97/18515	05-22-1997	Arunachalam		

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Sheet 1 of 1

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Application Number	11/980,185
Filing Date	OCT. 30, 2007
First Named Inventor	Lakshmi Arunachalam
Art Unit	
Examiner Name	
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	(10)	RFC 1156	05-1990	Network Working Group		

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		for Patent 5,778,178				

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Sheet 2 of 10

Complete if Known	
Application Number	10/980,185
Filing Date	10-30-2007
First Named Inventor	ARUN CHALM
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 5,475,819	12-12-1995	MILLER et al	
		US- 5859978	1-12-1999	SONDEREGGER et al	
		US- 5404523	4-4-1995	DELLA FERA	
		US- 5708780	1-13-1998	LEVERGOOD et al	
		US- 5715314	2-3-1998	PAYNE et al	
		US- 6249291	6-19-2001	POPP et al	
		US- 6125352	9-26-2000	FRANKLIN et al	
		US- 5347632	9-13-1994	FILEPP et al	
		US- 5870724	2-9-1999	LAWLOR	
		US- 6092053	7-18-2000	BOESCH et al	
		~~US- 5475819~~	~~12-12-1995~~	~~MILLER et al~~	DUP
		US- 5432937	7-11-95	TEVANIAN et al	
		US- 5873093	2-16-99	WILLIAMSON et al	
		US- 5826085	10-20-98	BENNETT et al	
		US- 5664111	9-2-97	NAHAN et al	
		US- 5892821	4-6-99	TURNER	
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		US- 5604905	2-18-97	TEVANIAN et al	
		US- ~~5708780~~		~~LEVER~~	DUP
		US- 5442771	8-15-95	FILEP et al	
		US- 5491800	2-13-96	GOLDSMITH et al	
		US- 5757917	5-26-98	ROSE et al	
		US- 5239662	8-24-93	DANIELSON et al	
		US- 5613148	3-18-97	BEZVINER et al	
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		US- 5677708	10-14-97	MATTHEWS III	
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		US- 5812779	9-22-98	CISCON et al	
		US- 5859978	1-12-99	SONDERREGGER et al	
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		US- 5873072	2-16-99	KIGHT et al	
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		US- 6553427	4-22-03	CHANG et al	
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		US-5560005	9-24-96	HOOVER et al	
		US-5712913	1-27-98	CHAUM	
		US-5757917	5-26-98	ROSE et al	
		US-5771354	6-23-98	CRAWFORD	
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		US-5878140	3-2-99	CHAUM	
		US-5884301	3-16-99	TAKANO	
		US-5890161	3-30-99	HELLAND et al	
		US-5893076	4-6-99	HAFNER et al	
		US-5897621	4-27-99	BOESCH et al	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

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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 2 hours 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, 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 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /V.V./

PTO/SB/08a (11-08)
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 9 of 10

Complete if Known	
Application Number	11/980,185
Filing Date	10-30-07
First Named Inventor	ARUNACHALAM
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 5909492	6-1-99	PAYNE et al	
		US- 5913061	6-15-99	GUPTA et al	
		US- 5956400	9-21-99	CHAUM et al	
		US- 5958004	9-28-99	HELLAND et al	
		US- 6014651	1-11-00	CRAWFORD	
		US- 6049785	4-11-00	GIFFORD	
		US- 6055514	4-25-00	WREN	
		US- 6073237	6-6-00	ELLISON	
		US- 6101482	8-8-00	DIANGELO et al	
		US- 6125185	9-26-00	BOESCH	
		US- 6128315	10-3-00	TAKEUCHI	
		US- 6185609	2-6-01	RANGARAJAN et al	
		US- 6205433	3-20-01	BOESCH et al	
		US- 6212634	4-3-01	GEER et al	
		US- 6289322	9-11-01	KITCHEN et al	
		US- 6301601	10-9-01	HELLAND et al	
		US- 6327579	10-4-01	CRAWFORD	
		US- 6360262	3-19-02	GUENTHNER et al	
		US- 6411943	6-25-02	CRAWFORD	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 10 of 10

Complete if Known	
Application Number	11/980,185
Filing Date	10-30-07
First Named Inventor	ARUNACHALAM
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 5956509	9-21-99	KAVNER	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Viet Vu/	Date Considered	01/03/2010

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/980,185	10/30/2007	Lakshmi Arunachalam	PA5041US

CONFIRMATION NO. 5863

22830
CARR & FERRELL LLP
2200 GENG ROAD
PALO ALTO, CA 94303

POA ACCEPTANCE LETTER

OC00000038814077

Date Mailed: 11/23/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/11/2009.

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.

/sibrahim/

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

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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/980,185	10/30/2007	Lakshmi Arunachalam	

CONFIRMATION NO. 5863

POWER OF ATTORNEY NOTICE

Clifford Kraft
320 Robin Hill Dr.
Naperville, IL 60540

OC000000038814052

Date Mailed: 11/23/2009

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/11/2009.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/sibrahim/

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Lakshmi Arunachalam
APPLICATION NO.:	11/980,185
FILING DATE:	October 30, 2007
TITLE:	Multimedia Transactional Services (as amended)
ART UNIT:	2454
EXAMINER:	Viet Duy Vu
ATTY.DKT.NO.:	PA5041US

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

ELECTION AND AMENDMENT

In response to the restriction requirement mailed October 19, 2009, please enter the following **amendments to the specification** and claims, which commence on **pages two** and **three**, respectively. The Applicant's **remarks** may be found on **page eleven**.

REMARKS

The Examiner requires restriction to one of the inventions identified in the *Restriction* dated October 19, 2009. *Restriction*, 2.

The Applicant hereby elects (without traverse) the invention identified as belonging to Group I and encompassing claims 1-17, 53-59, and 72-85. See *Restriction*, 2. The Applicant has cancelled all non-elected claims and reserves the right to pursue the same in a subsequently filed divisional application.

The Examiner is respectfully requested to enter the amendments presented with this response and continue with examination of the now-elected claims.

Respectfully submitted,
Lakshmi Arunachalam

November 19, 2009

By: /Tam Thanh Pham/

Tam Thanh Pham (50,565)
CARR & FERRELL *LLP*
2200 Geng Road
Palo Alto, CA 94303
T: 650.812.3400
F: 650.812.3444

Electronic Acknowledgement Receipt

EFS ID:	6492014
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA5041US
Receipt Date:	19-NOV-2009
Filing Date:	30-OCT-2007
Time Stamp:	21:07:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		00412386.pdf	58650 c4b52c837307ce330bf0c2a42eb28f97be33ffe4	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response to Election / Restriction Filed	1	1
	Specification	2	2
	Claims	3	10
	Applicant Arguments/Remarks Made in an Amendment	11	11
Warnings:			
Information:			
	Total Files Size (in bytes):	58650	

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.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/980,185	10/30/2007	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 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).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 11/19/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 33	Minus	** 110	= 0	X $26 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 4	Minus	***13	= 0	X $110 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	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))									
☐ 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 number found in the appropriate box in column 1.

Legal Instrument Examiner:
/Kim Downing/

IN THE SPECIFICATION

PLEASE AMEND THE TITLE AS FOLLOWS:

~~Method and Apparatus for Enabling Real Time Transactions on a Network~~

Multimedia Transactional Services

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (currently amended) A method for delivering complete multimedia ~~wireless~~ transactional services over the World Wide Web, the method comprising ~~the steps of~~:

receiving a transactional request for access to multimedia content, the transactional request received from a multimedia ~~wireless~~ user, wherein the transactional request includes a data structure specific to a web application ~~for access to media content~~;

~~handing said transactional request to an exchange component, said exchange component~~ executing an exchange component to provide the multimedia ~~providing said wireless~~ user with a choice of currently available multimedia content services accessible to the ~~by said~~ exchange component;

receiving a selection of a ~~particular~~ currently accessible multimedia content service from the multimedia ~~said wireless~~ user;

providing a choice of available multimedia content from ~~said particular~~ the selected multimedia content service to the multimedia ~~said wireless~~ user;

receiving a request from the multimedia ~~said wireless~~ user for ~~particular~~ multimedia content from the selected multimedia content service; and [[.]]

providing ~~said particular wireless~~ the requested multimedia content ~~in real time~~ to the multimedia ~~said wireless~~ user in real time, wherein providing the requested multimedia content includes routing of the data structure.

2. (currently amended) The method ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 1, wherein ~~said particular wireless~~ the multimedia content includes video.

3. (currently amended) The method ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 1, wherein ~~said particular wireless~~ the multimedia content includes audio.

4. (currently amended) The method ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 1, wherein ~~said particular wireless~~ the multimedia content includes web advertising.

5. (currently amended) The method ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 1, wherein ~~said particular wireless~~ the multimedia content is bought or sold ~~includes buying or selling~~.

6. (cancelled)

7. (currently amended) The method ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 1, wherein ~~the step of~~ providing ~~said particular wireless~~ the requested multimedia content is performed through execution of a switching or exchange component.

8. (currently amended) The method ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 7, wherein [[said]] the execution of the switching or exchange component provides a plurality of vertical services.

9. (currently amended) The method ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 8, wherein [[said]] vertical services are chosen from the group consisting of messaging, archival retrieval, directory services, data staging, and financial services.

10. (currently amended) A system for delivering complete multimedia ~~wireless~~ transactional services over the World Wide Web, the system comprising:

a management component stored in memory and executable by a processor to ~~capable of communicating with a wireless user, said management component receiving~~ receive a request from a multimedia ~~wireless~~ user for multimedia ~~wireless media~~ content services, the request including a data structure specific to a web application;

an exchange component stored in memory and executable by a processor to supply the multimedia ~~supplying said wireless~~ user with a choice of available multimedia content ~~wireless media~~ services, and wherein [[said]] the exchange component is further executable to receive ~~receives~~ a choice by the multimedia ~~said wireless~~ user relating to a particular ~~wireless media~~ multimedia content service selected from the available multimedia content services; and

a switching component stored in memory and executable by a processor to provide for the transfer of information ~~providing information transfer~~ between the selected multimedia content ~~said particular wireless media~~ service and the multimedia ~~said wireless~~ user whereby the multimedia ~~which said wireless~~ user may choose and receive particular ~~wireless media~~ multimedia content, the transfer of information including routing of the data structure.

11. (currently amended) The system ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 10, wherein ~~said particular~~ the selected ~~wireless media~~ multimedia content includes video.

12. (currently amended) The system ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 10, wherein ~~said particular~~ the selected multimedia ~~wireless media~~ content includes audio.

13. (currently amended) The system ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 10, wherein ~~said particular~~ the selected multimedia ~~wireless media~~ content includes web advertising.

14. (cancelled)

15. (currently amended) The system ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 10, wherein ~~said particular wireless media~~ the selected multimedia content is bought or sold ~~includes web buying and selling~~.

16. (currently amended) The system ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 10, wherein [[said]] the switching component is further executable to provide ~~provides~~ a plurality of vertical services.

17. (currently amended) The system ~~for delivering complete wireless transactional services over the World Wide Web~~ of claim 16, wherein [[said]] the vertical services are chosen from the group consisting of messaging, archival retrieval, directory services, data staging, and financial services.

18.-52. (cancelled)

53. (currently amended) A method for providing an enhanced value chain between web merchants and users, the method comprising ~~the steps of~~:

~~providing a service network running on the internet upon which a plurality of web merchants provide real-time point of service transactional capabilities;~~

providing a Web ~~at least one web~~ site where a user can access [[said]] a service network upon which a plurality of Web merchants provide real-time point of service transactional capabilities, the service network running on the Internet;

executing ~~providing~~ an exchange component that interacts with ~~said web~~ the Web site, wherein [[said]] execution of the exchange component provides [[said]] the user with information relating to available point of service applications;

receiving a choice of a point of service application from ~~allowing~~ the user ~~to choose a particular point of service application and to interact with that particular point of service application~~ to complete a real-time transaction over the Web.

54. (currently amended) The method ~~for providing an enhanced value chain between web merchants and users~~ of claim 53, wherein [[said]] the exchange component communicates with a switching component.

55. (currently amended) The method ~~for providing an enhanced value chain between web merchants and users~~ of claim 54, wherein [[said]] the switching component routes information between [[said]] the user and ~~said particular~~ the point of service application.

56. (currently amended) The method ~~for providing an enhanced value chain between web merchants and users~~ of claim 53 further comprising providing users ~~wherein users are provided~~ with a list of available point of service applications.

57. (currently amended) The method ~~for providing an enhanced value chain between web merchants and users~~ of claim 53, wherein [[said]] the exchange component communicates with an object routing component.

58. (currently amended) The method ~~for providing an enhanced value chain between web merchants and users~~ of claim 57, wherein [[said]] the object routing component allows completion of [[said]] the real-time transaction.

59. (currently amended) The method ~~for providing an enhanced value chain between web merchants and users~~ of claim 53 wherein [[said]] user is selected from the group consisting of ~~may be~~ a supplier, partner, distributor, or value-added reseller ~~resellers~~.

60.-71. (cancelled)

72. (currently amended) A method for performing a real time transaction over a digital network, the method comprising:

providing a web page for display on a computer system coupled to an input device~~, wherein a user input device is coupled to the computer system~~;

providing a point of service application as a selection within the web page, wherein the point of service application provides access to both a checking and savings account;

accepting a first signal from the user input device to select the point of service application;

accepting subsequent signals from the user input device; and

transferring~~, in real-time and in response to the subsequent signals,~~ funds from the checking account to the savings account in real time and in response to the subsequent signals.

73. (currently amended) The method of claim 72, wherein an ~~further comprising: using a web service~~ exchange over the Web is used to complete the transfer of funds in a Web application.

74. (currently amended) The method of claim 72, wherein ~~further comprising: using~~ a management agent is used to complete the transfer of funds.

75. (currently amended) The method of claim 72, wherein ~~further comprising: using~~ object routing is used to complete the transfer of funds.

76. (currently amended) The method of claim 75, wherein the object routing includes~~:~~ ~~using~~ the use of distributed on-line service information bases.

77. (currently amended) The method of claim 72, wherein ~~further comprising: using~~ a virtual information store is used to complete the transfer of funds.

78. (currently amended) The method of claim 77, wherein the virtual information store includes a ~~web service~~ networked object specific to a web application in a Web transaction.

79. (currently amended) The method of claim 78, wherein the networked object is the object identity in a Web transaction connecting from a Web application on a Web page to a transactional application executing anywhere on the Web ~~includes a networked object identity~~.

80. (cancelled)

81. (cancelled)

82. (cancelled)

83. (currently amended) The method of claim 72, wherein [[said]] the transaction is ~~requesting~~ a loan requested from a lender.

84. (currently amended) The method of claim 72, wherein [[said]] the transaction is ~~purchasing~~ a vehicle purchased with bank financing ~~from a bank~~.

85. (currently amended) The method of claim 72, wherein [[said]] the transaction is accessing an account.

86.-110. (cancelled)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Lakshmi Arunachalam
APPLICATION NO.:	11/980,185
FILING DATE:	October 30, 2007
TITLE:	Method and Apparatus for Enabling Real-Time Bi-Directional Transactions on a Network
ATTY.DKT.NO.:	PA5041US

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

REVOCATION AND POWER OF ATTORNEY

I, the undersigned, **Lakshmi Arunachalam**, as **Chief Executive Officer for WebXchange, Inc.**, the assignee of the entire right, title and interest in the above-referenced United States patent application, am **authorized to act on behalf of the assignee** and hereby revoke all prior powers of attorney previously submitted in the above-referenced U.S. patent application and hereby appoint the agents and attorneys associated with Customer Number **22830** to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith.

Please direct all communication relative to this application to the following correspondence address:

CUSTOMER NUMBER 22830

CARR & FERRELL *LLP*
2200 Geng Road
Palo Alto, CA 94303
TEL: (650) 812-3400
FAX: (650) 812.3444

Respectfully submitted,

Date: 9.22.09

Lakshmi Arunachalam

Lakshmi Arunachalam
Chief Executive Officer for WebXchange, Inc.

PTO/SB/96 (09-08)
Approved for use through 10/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: WebXchange, Inc.

Application No./Patent No.: 11/980,185 Filed/Issue Date: October 30, 2007

Entitled: Method and Apparatus for Enabling Real-Time Bi-Directional Transactions on a Network

WebXchange, Inc. , a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☑ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest
(The extent (by percentage) of its ownership interest is _____ %)

in the patent application/patent identified above by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Lakshmi Arunachalam To: WebXchange, Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☑ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Lakshmi Arunachalam
Signature

9.22.09
Date

Lakshmi Arunachalam
Printed or Typed Name

(650) 854-3393
Telephone Number

Chief Executive Officer for WebXchange, Inc.
Title

ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, I, the undersigned, **Lakshmi Arunachalam** do hereby sell, assign, and transfer to **WebXchange, Inc.**, a **corporation** with offices at **222 Stanford Ave., Menlo Park, CA 94024** ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all foreign countries, in and to any and all improvements that are disclosed in United States patent application number **11/980,185** filed **October 30, 2007** and entitled:

"Method and Apparatus for Enabling Real-Time Bi-Directional Transactions on a Network"

and in and to said application and all utility, divisional, continuing, substitute, renewal, reissue, and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all foreign countries on said improvements; and in and to all rights of priority resulting from the filing of said United States patent application; and

Agree that said Assignee may apply for and receive patents for said improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all said improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to said Assignee, its successors, assigns, and representatives, all facts known to the undersigned relating to said improvements and the history

thereof; and generally do everything possible which said Assignee, its successors, assigns or representatives shall consider desirable for aiding in securing and maintaining proper patent protection for said improvements and for vesting title to said improvements and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

Covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Date: 9.22.09

Name: Lakshmi Arunachalam

Lakshmi Arunachalam

Electronic Acknowledgement Receipt

EFS ID:	6436806
Application Number:	11980185
International Application Number:	
Confirmation Number:	5863
Title of Invention:	Method and apparatus for enabling real-time bi-directional transactions on a network
First Named Inventor/Applicant Name:	Lakshmi Arunachalam
Correspondence Address:	Clifford Kraft - 320 Robin Hill Dr. - Naperville IL 60540 US - -
Filer:	TamThanh Thi Pham/Colby Springer
Filer Authorized By:	TamThanh Thi Pham
Attorney Docket Number:	
Receipt Date:	11-NOV-2009
Filing Date:	30-OCT-2007
Time Stamp:	18:58:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		5041US_Revocation.pdf	177337 a4bf48d75fb73c2f17c05a9aaccb485e414858c3	yes	4

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Power of Attorney	1	1
	Assignee showing of ownership per 37 CFR 3.73(b).	2	4

Warnings:	
Information:	
Total Files Size (in bytes):	177337

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.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/980,185	10/30/2007	Lakshmi Arunachalam		5863

7590 10/19/2009

Clifford Kraft
320 Robin Hill Dr.
Naperville, IL 60540

EXAMINER	
VU, VIET DUY	

ART UNIT	PAPER NUMBER
2454	

MAIL DATE	DELIVERY MODE
10/19/2009	PAPER

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.

Office Action Summary	Application No.	Applicant(s)	
	11/980,185	ARUNACHALAM, LAKSHMI	
	Examiner	Art Unit	
	Viet Vu	2454	

-- 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 *1* 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 *03 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ 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

4)☒ Claim(s) *1-110* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-110* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ 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).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).

a)☐ All b)☐ Some * c)☐ None of:

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)).

* 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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Restriction:

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-17, 53-59 and 72-85, drawn to interface for conducting Internet transaction, classified in class 709, subclass 219.

II. Claims 18-24, drawn to network portal for accessing application database, classified in class 709, subclasses 219, 250.

III. Claims 25-39 and 60-71, drawn to data switching/routing in network, classified in class 709, subclasses 219, 328.

IV. Claims 40-52, drawn to application of web service, classified in class 709, subclass 219 and class 705, subclasses 26, 28.

V. Claims 86-110, drawn to provisioning web services, classified in class 709, subclasses 203, 219 and class 719, subclass 313.

Inventions I-V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is

separately usable. In the instant case, each invention has a distinct application as set forth above.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the technological complex art, examination of all inventions would impose serious burden to the examiner. Accordingly, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (see 37 CFR 1.143).

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viet Vu whose telephone number is 571-272-3977. The examiner can normally be reached on Monday through Friday from 7:00am to 4:00pm. The Group general information number is 571-272-2100. The Group fax number is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached on 571-272-1915.

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).

/Viet Vu/
Primary Examiner, Art Unit 2454
10/14/09

IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Art Unit:
	)	
Lakshmi Arunachalam	)	Examiner
	)	
Serial No. 11/980,185	)	
	)	
Filing Date: Oct. 30, 2007	)	
	)	
Title: METHOD AND APPARATUS FOR ENABLING REAL TIME TRANSACTIONS ON A NETWORK	)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Honorable Commissioner:

In accordance with 37 C.F.R. §1.97, please accept this Information Disclosure Statement and copies of any non-US patent art. This material was supplied by a defendant in a patent lawsuit of the parent patent in this case. It was not available before this date.

COMMENTS

It is believed that this disclosure complies with 37 C.F.R. §1.56 and 1.98 and M.P.E.P. §2000. This disclosure statement should not be construed as a representation that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(a) exists. A copy of each non-US patent reference

is being supplied. Some references may contain marks; no significance should be attached to these.

Respectfully submitted

Clifford Kraft

Cifford H. Kraft
Reg. No. 35,229
Attorney of Record

CORRESPONDENCE ADDRESS **CUSTOMER NUMBER: 000074642**

Clifford H. Kraft
320 Robin Hill Dr.
Naperville, IL 60540

(708) 528-9092

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450 with sufficient postage.

On: MARCH 9, 2009

By: Clifford Kraft

Name: Clifford H. Kraft

PTO/SB/08a (01-09)
Approved for use through 02/28/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | | of | |

Complete if Known	
Application Number	11/980,185
Filing Date	OCT. 30, 2007
First Named Inventor	LAKSHMI ARUNACHALAM
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-			
		US-		(1) MICROSOFT CORPORATION'S	
		US-		NOTICE OF MOTION AND MOTION	
		US-		FOR LEAVE TO AMEND	
		US-		(COMPLAINT)	
		US-			
		US-			
		US-		US DISTRICT COURT - NORTHERN	
		US-		DISTRICT OF CALIFORNIA	
		US-			
		US-			
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		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Art Unit: 2455
	)	
Lakshmi Arunachalam	)	Examiner:
	)	
Serial No. 11/980,185	)	
	)	
Filing Date: October 30, 2007	)	
	)	
Title: METHOD AND APPARAUTUS FOR ENABLING REAL TIME Bi-DIRECTIONAL TRANSACTIONS ON A NETWORK	)	

DUTY OF CANDOR DISCLOSURE UNDER 37. C.F.R §1.56

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Honorable Commissioner:

In accordance with 37 C.F.R. §1.56, please accept this Duty of Candor Disclosure.

COMMENTS

Microsoft Corporation filed complaint CV 08 05149 in the United States Federal Court for the Northern District of California against the owner of several of the parent patents (applications) to this pending application 11/980,185. The motion to dismiss Microsoft's complaint was granted by Judge Alsup on February 17, 2009, in which he

ruled that, failing Microsoft amending its claims by March 3, 2009, all of Microsoft's claims will be dismissed with prejudice. Microsoft amended its complaint on March 3, 2009, which will be supplied in an Information Disclosure Statement in this application. Judge Alsup's ruling stated that "Microsoft is using counterfeit logic to manufacture a controversy where none exists.", regarding Microsoft's "effort to open a new front in a new district arising out of patent litigation already proceeding in another district", namely the Delaware Court under the Honorable Judge Farnan.

Microsoft had asked for a declaratory judgment of enforceability based on alleged inequitable conduct against the present inventor in procuring the following parent patents: 5,778,178 (08/700,726), 6,212,556 (09/296,207) and 7,340,506 (09/792,323). All of these patents are priority applications to the present application. The complaint and dismissal order have already been supplied in an Information Disclosure Statement in this application and are currently in the record.

Microsoft alleged that the inventor Ms. Lakshmi Arunachalam failed to disclose certain documents during the course of prosecution of the three patents, namely, 5,778,178 (08/700,726), 6,212,556 (09/296,207) and 7,340,506 (09/792,323). In particular, Microsoft alleged that the inventor did not disclose the following three documents: 1) SMI RFC-1155, "Structure and Identification of Management Information for TCP/IP Based Internets", published May 1990, 2) MIB II RFC-1213, "Management Information Base for Network Management for TCP/IP Based Internets: MIB-II", published March 1991, and 3) SNMP RFC-1157, "A Simple Network Management Protocol (SNMP)", published May 1990. All three of these SNMP documents have already been supplied to the Patent Office in an Information Disclosure in the present

application. Also, the inventor had disclosed SNMP to the USPTO during initial prosecution in Column 7, Line 63, in the 5,778,178 patent and in several pages of the provisional patent application having the Serial Number 60/006,634 filed on November 13, 1995. The inventor had worked on porting SNMP software across multiple UNIX platforms, but had neither seen nor read the SNMP standards' documents during initial prosecution. In a previous Rule 56 disclosure filed in this application, the attorney's statement that "the applicant did not know of the existence of these documents during initial prosecution.", simply meant that the applicant/inventor had neither seen nor read the SNMP standards' documents. The attorney inadvertently filed the previous disclosure without sending it to the inventor for review.

Microsoft also alleged that the inventor not only knew of these documents, but copied portions of them into the specification of these patents.

Microsoft, in their complaint, presented the Table below, but omitted in their Table many lines from the 5,778,178 patent. For example, Microsoft omitted Lines 29-34 from Column 8 of the 5,778,178 patent, thereby leaving out the context of a Web transaction, causing a possible mistaken impression that SNMP and a Web transaction are one and the same. Likewise, Microsoft has made numerous other omissions in their Table. For example, Lines 25-37 of Column 8 of the 5,778,178 patent are as follows: "Each object in the DOLSIB has a name, a syntax and an encoding. The name is an administratively assigned object ID specifying an object type. The object type together with the object instance serves to uniquely identify a specific instantiation of the object. For example, if object 610 is information about models of cars, then one instance of that object would provide user 100 with information about a specific model of the car while

another instance would provide information about a different model of the car. The syntax of an object type defines the abstract data structure corresponding to that object type. Encoding of objects defines how the object is represented by the object type syntax while being transmitted over the network."

Likewise, Microsoft has omitted many lines from the 5,778,178 patent and the Provisional Patent application number 60/006,634 in their Table, again leading to a possible mistaken impression.

RFC 1156 Excerpts	'178 Patent Excerpts
Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using Abstract Syntax Notation One (ASN.1) [8] defined in the [Internet standard] SMI. In particular, each object has a name, a syntax, and an encoding. The name is an object identifier, an administratively assigned name, which specifies an object type. The object type together with an object instance serves to uniquely identify a specific instantiation of the object. For human convenience, we often use a textual string, termed the OBJECT DESCRIPTOR, to also refer to the object type. The syntax of an object type defines the abstract data structure corresponding to that object type. The ASN.1 language is used for this purpose. However, the SMI [12] purposely restricts the ASN.1 constructs which may be used. These restrictions are explicitly made for simplicity. The encoding of an object type is simply how that object type is represented using the object type's syntax. Implicitly tied to the notion of an object type's syntax and encoding is how the object type is represented when being transmitted on the network. The SMI specifies the use of the basic encoding rules of ASN.1 [9], subject to the additional requirements imposed by the SNMP.	DOLSIBs are virtual information stores optimized for networking. .... Each object in the DOLSIB has a name, a syntax and an encoding. The name is an administratively assigned object ID specifying an object type. The object type together with the object instance serves to uniquely identify a specific instantiation of the object. ..... The syntax of an object type defines the abstract data structure corresponding to that object type. Encoding of objects defines how the object is represented by the object type syntax while being transmitted over the network. 12. A method for enabling object routing on the World Wide Web, said method for enabling object routing comprising the steps of: creating a virtual information store containing information entries and attributes; .... 15. The method claim 12 wherein said step of associating each of said information entries and said attributes with said object identity further includes the step of storing a name, a syntax and an encoding for each of said object identities. 16. The method in claim 15 wherein said name of said object identity specifies an object type.

The inventor/applicant admits that these SNMP documents were not disclosed to the Patent Office in the previous cases. She had already disclosed SNMP in the Provisional patent application having the Serial Number 60/006,634 filed on November 13, 1995 and in the 5,778,178 patent. The inventor further admits that there is language in her specification that is similar, though NOT IDENTICAL, to that contained in these SNMP documents, and her specification also has language that Microsoft chose to omit in the Table above that clearly shows the innovative context that was totally unrelated to SNMP. The words in her specification connote a unique, novel, inventive meaning (distinctly different from SNMP) that she has taught extensively throughout the parent patents. For example, SNMP has nothing to do with a "checking account" on a Web page, or a "car" POSvc application on the Web offered by a Web Merchant. SNMP is about managing physical devices on a physical network. SNMP does not support object operations. Besides, the Web is a simple windowing network atop the Internet. The Web and Internet are not the same. The inventor wrote the sentences appearing in the Provisional patent application having the Serial Number 60/006,634 filed on November 13, 1995 and in the 5,778,178 specification and approved them during initial prosecution of the Provisional and the 5,778,178 patents. The attorney in the previous Rule 56 disclosure did not mean that "the inventor is not sure where the similar language appearing in the specification came from" - in the sense of not knowing who wrote it, he simply meant that the applicant/inventor had not read the SNMP standards' documents and did not realize that the language was similar. The attorney inadvertently filed the previous disclosure without sending it to the inventor for review.

Microsoft also alleged that the inventor failed to notify the Patent Office about her PCT application No. PCT/US96/18165 published in 1997 as WO 97/18515 in the case of patent number 6,212,556 (09/296,556) filed April 21, 1999. Since the '556 patent application was a continuation-in-part, it contained new matter, and claims to new matter.

The inventor admits that her PCT application was published in 1997, more than one year before the filing date of the application for the '556 patent, and that the application for the '556 patent was a CIP and contained new matter. The inventor did not disclose the PCT application to the examiner. However, as Microsoft states in their complaint, the PCT application was almost identical to the original parent application U.S. Patent number 5,778,178 (08/700,634). This original US parent application was on file at the Patent Office and known to the examiner through the chain of priority claimed in the application for the '556 patent. Since the PCT application was almost identical to the original parent, it did not contain any of the new matter. Therefore, the inventor was therefore not required to disclose it to the examiner since it was cumulative. In any case, a copy of PCT/US96/18165 has already been supplied in an Information Disclosure Statement in the present application.

To the extent that the present examiner concludes that the material in the SNMP RFCs 1155, 1213, 1157 is relevant to the present case, further examination is invited by the inventor. However, it is the inventor's belief that these SNMP documents are not material to the present claims. The present claims are directed to real-time transactions related to Web pages involving switching in real-time between a plurality of sellers/Web Merchants. The SNMP RFC documents simply do not discuss switching in real-time

between a plurality of sellers/Web Merchants presenting multiple Web pages so that real-time transactions can take place or that a user interactively settles multiple Web transactions from different sellers/Web Merchants simultaneously.

Example claims from the current application are Claims 25, 1, 2, 3, 4, 5, 7, 8, 9, 18, 19, 20, 21, 23, 26, 40, 47, 50, 51, 53, 72, 83, 84:

Claim 25: An exchange component of a web-based transactional service comprising: a plurality of application components; a switching component; an object routing component; a web page component; wherein said web page component provides a web page to a user that allows said user to select a particular transactional service, said switching component switches information between said user and an application component related to said particular transactional service, and said object routing component routes media content objects between said particular transactional service and said user.

Claim 1: A method for delivering complete wireless transactional services over the World Wide Web comprising the steps of: receiving a transactional request from a wireless user for access to media content; handing said transactional request to an exchange component, said exchange component providing said wireless user with a choice of currently available media content services accessible by said exchange component; receiving a selection of a particular accessible media content service from said wireless user; providing a choice of available media content from said particular media content service to said wireless user; receiving a request from said wireless user for particular media content; providing said particular wireless media content in real time

to said wireless user.

Claim 2: The method for delivering complete wireless transactional services over the World Wide Web of claim 1 wherein said particular wireless media content includes video.

Claim 3: The method for delivering complete wireless transactional services over the World Wide Web of claim 1 wherein said particular wireless media content includes audio.

Claim 4: The method for delivering complete wireless transactional services over the World Wide Web of claim 1 wherein said particular wireless media content includes web advertising.

Claim 5: The method for delivering complete wireless transactional services over the World Wide Web of claim 1 wherein said particular wireless media content includes buying or selling.

Claim 7: The method for delivering complete wireless transactional services over the World Wide Web of claim 1 wherein the step of providing said particular wireless media content is performed through a switching or exchange component.

Claim 8: The method for delivering complete wireless transactional services over the

World Wide Web of claim 7 wherein said switching or exchange component provides a plurality of vertical services.

Claim 9: The method for delivering complete wireless transactional services over the World Wide Web of claim 8 wherein said vertical services are chosen from the group consisting of messaging, archival retrieval, directory services, data staging and financial services.

Claim 18: An employee-accessible web service network portal operated by a business entity comprising: a point of service application provided by a particular sub-entity related to said business entity; a second application provided by a different sub-entity also related to said business entity; a portal allowing an employee access to said point of service application, said portal also allowing said employee to transfer information from said second application to said point of service application.

Claim 19: The employee-accessible web service network portal of claim 18 wherein said particular sub-entity is a payroll department.

Claim 20: The employee-accessible web service network portal of claim 18 wherein said different sub-entity is a human resources department.

Claim 21: The employee-accessible web service network portal of claim 18 wherein funds can be transferred by said point of service application to benefit said employee.

Claim 23: The employee-accessible web service network portal of claim 18 wherein one of said point of service application allows access to the group of services consisting of 401K plans, expense reports, time cards, payroll, travel, vacation and commissions.

Claim 26: The exchange component of a web-based transactional service of claim 25 wherein said switching component is a value added network switch.

Claim 40: A web service transaction system for allowing N-Way transactions comprising: a web-based application accessible by N web participants, where N is an integer greater than 1, each of said web participants providing a service, and wherein said web-based application allows transfer of information between members of said N web participants; a user interface to said web-based application, wherein a user can access a service from at least one of said N web participants; and wherein said web-based application notifies at least one of said web participants when the user accesses a service from another of said web participants.

Claim 47: A cooperative multiple merchant web service system comprising: at least one point of service application accessible by a plurality of web merchants, each of said web merchants providing goods or services, said point of service application allowing transfer of information between said web merchants; a user interface to said point of service application, wherein said user can access at least some of said goods or services, and wherein access by said user to one of said merchant's goods or services is communicated to at least one other of said merchants.

Claim 50: The cooperative multiple merchant web service system of claim 47 wherein one of said merchants is a financial institution.

Claim 51: The cooperative multiple merchant web service system of claim 47 wherein at least one of said merchants provides fungible goods.

Claim 53: A method for providing an enhanced value chain between web merchants and users comprising the steps of: providing a service network running on the internet upon which a plurality of web merchants provide real-time point of service transactional capabilities; providing at least one web site where a user can access said service network; providing an exchange component that interacts with said web site, wherein said exchange component provides said user with information relating to available point of service applications; allowing the user to choose a particular point of service application and to interact with that particular point of service application to complete a real-time transaction over the Web.

Claim 72: A method for performing a real time transaction over a digital network, the method comprising: providing a web page for display on a computer system, wherein a user input device is coupled to the computer system; providing a point of service application as a selection within the web page, wherein the point of service application provides access to both a checking and savings account; accepting a first signal from the user input device to select the point of service application; accepting subsequent signals from the user input device; and transferring, in real-time and in response to the subsequent signals, funds from the checking account to the savings account.

Claim 83: The method of claim 72 wherein said transaction is requesting a loan from a lender.

Claim 84: The method of claim 72 wherein said transaction is purchasing a vehicle with financing from a bank.

None of the three SNMP RFC documents mention anything about a Web page. None of them mention switching a user in real-time between a plurality of sellers/Web Merchants. None of them mention switching a user from a first server to a 401K or payroll application. None of them mention media content that includes video, audio, financial services. None of them mention a user interactively settling multiple Web transactions from different sellers/Web Merchants simultaneously. Similar arguments apply to the other claims.

The Federal Circuit in the case Rohm & Haas Co. v. Crystal Chemical Co., 772 F.2d 1556, 220 U.S.P.Q. 289, 301 (Fed. Cir. 1983) has discussed what, if anything, can be done in the PTO during prosecution to cure or overcome possible previous misconduct.

There has been no misconduct, as alleged by Microsoft. However, in an abundance of caution, the inventor/applicant hereby applies the formula given by the Federal Circuit to cure or overcome possible previous misconduct. The formula given by the Federal Circuit is a) the applicant must expressly advise the PTO of the existence of a prior misrepresentation, stating specifically where it resides; b) the applicant must advise the PTO of the actual facts, if the prior misrepresentation was factual, and must indicate that further examination may be required; and c) the applicant must establish the patentability of the claimed subject matter.

Thus, following this formula: a) The inventor has disclosed that there is an allegation of inequitable conduct in a parent case, and that the allegation names documents that were not submitted to the examiner at that time. The applicant admits that she did not submit these SNMP documents in the parent case, and has submitted them in the present case. She had already disclosed SNMP in the 5,778,178 in Column 7, Line 63, and in the Provisional patent application having Serial number 60/006,634, filed on November 13, 1995 reinforcing that she had no deceptive intent nor has there been any misrepresentation. b) The inventor does not believe these SNMP documents to be material; however, to the extent the PTO feels they are material, the inventor invites the examiner to use these documents in the present application. c) The applicant has argued how the claims in the current application are patentable over these SNMP documents, since these SNMP documents do not teach Web pages, nor switching in real-time between a plurality of sellers/Web Merchants, nor that user interactively settles multiple Web transactions from different sellers/Web Merchants simultaneously, nor electronic mail.

Respectfully Submitted

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450 with sufficient postage.

On: MARCH 4, 2009

By: Clifford Kraft

Name: Clifford H. Kraft

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11/980,185
	Filing Date	OCT. 30, 2007
	First Named Inventor	LAKSHMI ARUNACHALAM
	Art Unit	
	Examiner Name	
	Attorney Docket Number	

	1	Order Granting Defendant's Motion to Dismiss - Northern District of California 02/17/2009	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*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.

DFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Art Unit:
	)	
Lakshmi Arunachalam	)	Examiner
	)	
Serial No. 11/980,185	)	
	)	
Filing Date: Oct. 30, 2007	)	
	)	
Title: METHOD AND APPARATUS FOR ENABLING REAL TIME TRANSACTIONS ON A NETWORK	)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Honorable Commissioner:

In accordance with 37 C.F.R. §1.97, please accept this Information Disclosure Statement and copies of any non-US patent art. This material was supplied by a defendant in a patent lawsuit of the parent patent in this case. It was not available before this date.

COMMENTS

It is believed that this disclosure complies with 37 C.F.R. §1.56 and 1.98 and M.P.E.P. §2000. This disclosure statement should not be construed as a representation that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(a) exists. A copy of each non-US patent reference

is being supplied. Some references may contain marks; no significance should be attached to these.

Respectfully submitted

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450 with sufficient postage.

On: MAR. 1, 2009

By: Clifford Kraft

Name: Clifford H. Kraft

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Art Unit:
	)	
Lakshmi Arunachalam	)	Examiner:
	)	
Serial No. 11/980,185	)	
	)	
Filing Date: Oct. 30, 2007	)	
	)	
Title: METHOD AND APPARAUTUS FOR ENABLING REAL-TIME TRANSACTIONS ON A NETWORK	)	

DUTY OF CANDOR DISCLOSURE UNDER 37. C.F.R §1.56

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Honorable Commissioner:

In accordance with 37 C.F.R. §1.56, please accept this Duty of Candor Disclosure.

COMMENTS

Microsoft Corporation has recently filed a complaint CV 08 5149 in the United States Federal Court for the Northern District of California against the owner of several of the parent patents (applications) in this case. Microsoft has asked for a declaratory judgment of unenforceability based on alleged inequitable conduct against the present inventor in procuring the following parent patents: 5,778,178 (08/700,726), 6,212,556 (09/296,207) and 7,340,506 (09/792,323). All of these patents are priority applications

to the present case. This complaint has already been supplied in an Information Disclosure Statement in this case and is currently in the record.

Microsoft alleges that the inventor Ms. Lakshmi Arunachalam failed to disclose certain documents during the course of prosecution of these three patents. In particular, Microsoft alleges that the inventor did not disclose the following three documents: 1) SMI RFC-1155, "Structure and Identification of Management Information for TCP/IP Based Internets", published May 1990, 2) MIB II RFC-1213 "Structure and Identification of Management Information for TCP/IP Based Internets", published March 1991, and 3) SNMP RFC-1157, "A Simple Network Management Protocol (SNMP)", published May 1990. All three of these documents have already been supplied to the Patent Office in an Information Disclosure in the present case. However, the applicant did not know of the existence of these documents during initial prosecution.

Microsoft also alleges that the inventor not only knew of these documents, but copied portions of them into the specification of these patents.

Microsoft, in their complaint, presented the following table:

RFC 1156 Excerpts	'178 Patent Excerpts
Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using Abstract Syntax Notation One (ASN.1) [8] defined in the [Internet standard] SMI. In particular, each object has a name, a syntax, and an encoding. The name is an object identifier, an administratively assigned name, which specifies an object type. The object type together with an object instance	DOLSIBs are virtual information stores optimized for networking. .... Each object in the DOLSIB has a name, a syntax and an encoding. The name is an administratively assigned object ID specifying an object type. The object type together with the object instance serves to uniquely identify a specific instantiation of the object. ..... The syntax of an object type defines the abstract data structure corresponding to that object type. Encoding

serves to uniquely identify a specific instantiation of the object. For human convenience, we often use a textual string, termed the OBJECT DESCRIPTOR, to also refer to the object type.

The syntax of an object type defines the abstract data structure corresponding to that object type. The ASN.1 language is used for this purpose. However, the SMI [12] purposely restricts the ASN.1 constructs which may be used. These restrictions are explicitly made for simplicity.

The encoding of an object type is simply how that object type is represented using the object type's syntax. Implicitly tied to the notion of an object type's syntax and encoding is how the object type is represented when being transmitted on the network. The SMI specifies the use of the basic encoding rules of ASN.1 [9], subject to the additional requirements imposed by the SNMP.

---

of objects defines how the object is represented by the object type syntax while being transmitted over the network.

12. A method for enabling object routing on the World Wide Web, said method for enabling object routing comprising the steps of:
creating a virtual information store containing information entries and attributes;
....

15. The method claim 12 wherein said step of associating each of said information entries and said attributes with said object identity further includes the step of storing a name, a syntax and an encoding for each of said object identities.

16. The method in claim 15 wherein said name of said object identity specifies an object type.

The inventor admits that these documents were not disclosed to the Patent Office in the previous cases since she did not know of them, and that there is language in her specification that is similar to that contained in these documents. The inventor is not sure where the similar language appearing in her specification came from.

Microsoft also alleges that the inventor failed to notify the Patent Office about her PCT application No. PCT/US96/18165 published in 1997 as WO 97/18515 in the case of patent number 6,212,556 (09/296,556) filed April 21, 1999. Since the `556 patent application was a continuation-in-part, it contained new matter, and claims to new matter.

The inventor admits that her PCT application was published in 1997, more than one year before the filing date of the application for the `556 patent, and that the application for the `556 patent was a CIP and contained new matter. The inventor did not disclose the PCT application to the examiner. However, as Microsoft states in their complaint, the PCT application was almost identical to the original parent application U.S. Patent number 5,778,178 (08,700,634). This original US parent application was on file at the Patent Office and known to the examiner through the chain of priority claimed in the application for the `556 patent. Since the PCT application was almost identical to the original parent, it did not contain any of the new matter. Therefore, the inventor was therefore not required to disclose it to the examiner since it was cumulative. In any case, a copy of PCT/US96/18165 has been already been supplied in an information disclosure in the present case.

To the extent that the present examiner concludes that the material in RFCs 1155, 1213 and 1157 is relevant to the present case, further examination is invited by the inventor. However, it is the inventor's belief that these SNMP documents are not material to the present claims. The present claims are directed to real time transactions relating to web pages involving switching between multiple servers. The RFC documents simply do not discuss switching users between multiple servers presenting multiple web pages so that real time transactions can take place.

An example claim from the current case is claim 87:

> Claim 87. A method of permitting an online transaction in real-time by a user with at least one computing device on the World Wide Web comprising the steps of:

presenting a first web page from a first server allowing a user to choose a transaction from a plurality of possible transactions;

presenting a second web page allowing said user to display said second web page on said computing device and to interactively enter into said transaction with a particular seller;

switching said user from said first server to a payment server remote from said first server allowing said user to interactively settle said transaction wherein said user communicates directly from a user device to said payment server;

allowing said user to communicate by electronic mail with said seller.

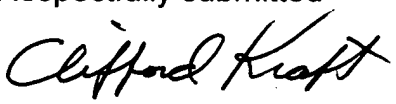
None of the three RFC documents mention anything about a web page. None of them mention switching a user from a first server to a payment server. None of them mention electronic mail. Similar arguments apply to the other claims.

The Federal Circuit in the case Rohm & Haas Co. v. Crystal Chemical Co., 772 F.2d 1556, 220 U.S.P.Q. 289, 301 (Fed. Cir. 1983) has discussed what, if anything, can be done in the PTO during prosecution to cure or overcome possible previous misconduct. The formula given by the Federal Circuit is a) the applicant must expressly advise the PTO of the existence of a prior misrepresentation, stating specifically where it resides; b) the applicant must advise the PTO of the actual facts, if the prior misrepresentation was factual, and must indicate that further examination may be required, and c) the applicant must establish the patentability of the claimed subject matter.

Thus, following this formula: a)The inventor has disclosed that there is an

allegation of inequitable conduct in a parent case, and that the allegation names documents that were not submitted to the examiner at that time. The applicant admits that she did not submit these documents in the parent case since she did not know of them, and has submitted them in the present case. b) The inventor does not believe these documents to be material; however, to the extent the PTO feels they are material, the inventor invites the examiner to use these documents in the present case. c) The applicant has argued how the claims in the current case are patentable over these documents since these documents do not teach web pages, switching in real time between multiple servers and electronic mail.

Respectfully submitted



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On: FEB. 11, 2009

By: Clifford Kraft

Name: Clifford H. Kraft

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Art Unit:
	)	
Lakshmi Arunachalam	)	Examiner
	)	
Serial No. 11/980,185	)	
	)	
Filing Date: Oct. 30, 2007	)	
	)	
Title: METHOD AND APPARATUS FOR ENABLING REAL TIME TRANSACTIONS ON A NETWORK	)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
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Alexandria VA 22313-1450

Honorable Commissioner:

In accordance with 37 C.F.R. §1.97, please accept this Information Disclosure Statement and copies of any non-US patent art. This material was supplied by a defendant in a patent lawsuit of the parent patent in this case. It was not available before this date.

COMMENTS

It is believed that this disclosure complies with 37 C.F.R. §1.56 and 1.98 and M.P.E.P. §2000. This disclosure statement should not be construed as a representation that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(a) exists. A copy of each non-US patent reference

is being supplied. Some references may contain marks; no significance should be attached to these.

Respectfully submitted

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On: FEB. 9, 2009

By: Clifford Kraft

Name: Clifford H. Kraft

PTO/SB/08a (01-09)
Approved for use through 02/28/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

Complete if Known	
Application Number	11/980,185
Filing Date	10/30/07
First Named Inventor	LAKSHMI ARUNACHALAM
Art Unit	
Examiner Name	
Attorney Docket Number	

~~U.S. PATENT DOCUMENTS~~

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- BROAD VISION ONE-TO-ONE			P vii
	(1)	US- DEVELOPERS GUIDE			
		US-			
	(2)	US- BROAD VISION ONE-TO-ONE			
		US- INSTALLATION & SYSTEM ADMIN GUIDE			
		US-			
	(3)	US- BROAD VISION ONE-TO-ONE			PP 1-3
		US- TECHNICAL OVERVIEW			
		US-			
	(4)	US- BROAD VISION ONE-TO-ONE,			
		US- DYNAMIC COMMAND CR USERS GUIDE			
		US-			
	(5)	US- PRODIGY MADE EASY 2ND ED			
		US-			
	(6)	US- COMPUTER NETWORKS - SYS APPROACH			
		US- PETERSON & DAVIE			
		US-			
	(7)	US- UNTANGLING THE WORLD-WIDE-WEB			
		US- REKHAN, CAHILL & HINCHEY			

~~FOREIGN PATENT DOCUMENTS~~

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
		THE SIMPLE BOOK - AN INTRO				
	(8)	TO INTERNET MANAGEMENT				

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08a (01-09)
Approved for use through 02/28/2009. OMB 0651-0031
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 3

Complete if Known	
Application Number	11/980,185
Filing Date	10/30/07
First Named Inventor	LAKSHMI ARUNACHALAM
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	(9)	US- GOOGLE GROUPS COMP. DOC - RFC'S 1212			
		US- 1213 ON CONCISE DEFINITIONS			
		US- MIB AND MIB II			
		US-			
		US-			
	(10)	US- SMALL TALK OBJECT MODEL			
		US- http://www.objs.com/x3h7/smlktalk.htm			
		US-			
	(11)	US- A PROTOCOL & SERVER FOR A DISTRIB -			
		US- DIGITAL TECH REPORT LIBRARY			
		US-			
		US-			
	(12)	US- DISTRIBUTED APPLICATIONS IN A			
		US- HYPERMEDIA SETTING - BHARAT			
		US- & CAROELLI			
		US-			
	(13)	US- DIENST: IMPLEMENTATION REF MANUAL			
		US- LAGOZE, SHAW, DAVIS & KRAFFT			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	(14)	OBJECT WRAPPING FOR (WWW)				
		EDWARDS			1995	
		UNDER STANDING DCE CHAPT-3				
	(15)	DCE - THE NETWORK AS COMPUTER ETC				

Examiner Signature		Date Considered	

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 3 of 3

Complete if Known	
Application Number	11/980,185
Filing Date	10/30/07
First Named Inventor	LAKSHMI ARUNACHALAM
Art Unit	
Examiner Name	
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		US- VISUAL OBLIQ — JYA FOR BLOG DISTRIB			MULTI-USER
	(16)	US- APPS BY DIRECT MANIPULATION			
		US- BHARAT & BROWN			
		US-			
	(17)	US- USING THE WEB AS A SURVEY TOOL			
		US- PITKOW & RECKER			
		US-			
	(18)	US- COMPUSERVE FOR WINDOWS			
		US- BANKS			
		US-			
	(19)	US- DISTRIBUTED OBJECT TECHNOLOGY IN			
		US- FINANCIAL SERVICE INDUSTRY			
		US- SUN MICROSYSTEMS			
		US-			
	(20)	US- BUSINESS WIRE - OPEN MARKET RELEASES -			
		US-			
		US-			
	(21)	US- DISTRIBUTED COMPUTING - A PRACTICAL			
		US- SYNTHESIS — UMAR			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	(22)	ORBIX — PROGRAMMER'S GUIDE				
		IONA TECHNOLOGIES LTD				
	(23)	TRAVEL SERVICES — JOIN COMPUSERVE				
		& SEE THE WORLD			1987	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

IPW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Art Unit:
	)	
Lakshmi Arunachalam	)	Examiner
	)	
Serial No. 11/980,185	)	
	)	
Filing Date: Oct. 30, 2007	)	
	)	
Title: METHOD AND APPARATUS FOR ENABLING REAL TIME TRANSACTIONS ON A NETWORK	)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Honorable Commissioner:

In accordance with 37 C.F.R. §1.97, please accept this Information Disclosure Statement and copies of any non-US patent art. This material was supplied by a defendant in a patent lawsuit of the parent patent in this case. It was not available before this date.

COMMENTS

It is believed that this disclosure complies with 37 C.F.R. §1.56 and 1.98 and M.P.E.P. §2000. This disclosure statement should not be construed as a representation that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(a) exists. A copy of each non-US patent reference

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Respectfully submitted

Clifford Kraft

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | | of | |

Complete if Known	
Application Number	11/980,185
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First Named Inventor	LAKSHMI ARUNACHALAM
Art Unit	
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Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	~~US~~ A COBRA BASED FRAMEWORK - - ARSHAD et al	1999		
	2	US- GENERIC MET INFO BASE BROWSER - PAVLOU et al.			
	3	US- METRO DISTRIB INFO SYSTEM - CHUNG et al	1995		
	4	US- AGENT BASED SYSTEM - INTERNET BASED - EHIKIOYA	1999		
	5	US- BROADVISION 1-1 DEV. GUIDE -	1995	CONTENTS ONLY - Vii	
	6	US- BROADVISION - PGM REF	1995	PP 4-5, 21, 30, 97	
	7	US- BROADVISION - TECH OVERVIEW	1995	PP 1-3	
	8	US- DATABASE ACCESS INTE-NETWORKS - RAATIKAINEN		P-1	
	9	US- 802.3 REPEATER DEVICES	1992	PP 1-3	
	10	US- ERP MEETS WEB E-COMMERCE	1998	P-1	
	11	US- MICROSOFT TRANSACTION SERVER - LIMPRECHT	1997		
	12	US- NETBILL - - PROTOCOL		P-1 TYGAR	
	13	US- OBJ ORIENTED - HYPER G - MS WINDOWS -		CONTENTS & P3	
	14	US- DIALOG WEB - M. HICKEY	1994	P-1	
	15	US- TRANSACTION INTERNET PROTOCOL - VOGER et al.	1999		
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	16	RFC 1065	1988	NETWORK WORKING GROUP		
	17	RFC 1318	1992	NETWORK WORKING GROUP		
	18	RFC 1283	1991	NETWORK WORKING GROUP		
	19	RFC 1516	1993	NETWORK WORKING GROUP		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

Network Working Group
Request for Comments: 1065

M. Rose
K. McCloghrie
TWG
August 1988

Structure and Identification of Management Information for TCP/IP-based internets

Table of Contents

1. Status of this Memo

This memo provides the common definitions for the structure and identification of management information for TCP/IP-based internets. In particular, together with its companion memos which describe the initial management information base along with the initial network management protocol, these documents provide a simple, workable

architecture and system for managing TCP/IP-based internets and in particular, the Internet.

This memo specifies a draft standard for the Internet community. TCP/IP implementations in the Internet which are network manageable are expected to adopt and implement this specification.

Distribution of this memo is unlimited.

2. Introduction

This memo describes the common structures and identification scheme for the definition of management information used in managing TCP/IP-based internets. Included are descriptions of an object information model for network management along with a set of generic types used to describe management information. Formal descriptions of the structure are given using Abstract Syntax Notation One (ASN.1) [1].

This memo is largely concerned with organizational concerns and administrative policy: it neither specifies the objects which are managed, nor the protocols used to manage those objects. These concerns are addressed by two companion memos: one describing the Management Information Base (MIB) [2], and the other describing the Simple Network Management Protocol (SNMP) [3].

This memo is based in part on the work of the Internet Engineering Task Force, particularly the working note titled "Structure and Identification of Management Information for the Internet" [4]. This memo uses a skeletal structure derived from that note, but differs in one very significant way:that note focuses entirely on the use of OSI-style network management. As such, it is not suitable for use in the short-term for which a non-OSI protocol, the SNMP, has been designated as the standard.

This memo attempts to achieve two goals: simplicity and extensibility. Both are motivated by a common concern: although the management of TCP/IP-based internets has been a topic of study for some time, the authors do not feel that the depth and breadth of such understanding is complete. More bluntly, we feel that previous experiences, while giving the community insight, are hardly conclusive. By fostering a simple SMI, the minimal number of constraints are imposed on future potential approaches; further, by fostering an extensible SMI, the maximal number of potential approaches are available for experimentation.

It is believed that this memo and its two companions comply with the guidelines set forth in RFC 1052, "IAB Recommendations for the

Development of Internet Network Management Standards" [5]. In particular, we feel that this memo, along with the memo describing the initial management information base, provide a solid basis for network management of the Internet.

3. Structure and Identification of Management Information

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using Abstract Syntax Notation One (ASN.1) [1].

Each type of object (termed an object type) has a name, a syntax, and an encoding. The name is represented uniquely as an OBJECT IDENTIFIER. An OBJECT IDENTIFIER is an administratively assigned name. The administrative policies used for assigning names are discussed later in this memo.

The syntax for an object type defines the abstract data structure corresponding to that object type. For example, the structure of a given object type might be an INTEGER or OCTET STRING. Although in general, we should permit any ASN.1 construct to be available for use in defining the syntax of an object type, this memo purposely restricts the ASN.1 constructs which may be used. These restrictions are made solely for the sake of simplicity.

The encoding of an object type is simply how instances of that object type are represented using the object's type syntax. Implicitly tied to the notion of an object's syntax and encoding is how the object is represented when being transmitted on the network. This memo specifies the use of the basic encoding rules of ASN.1 [6].

It is beyond the scope of this memo to define either the initial MIB used for network management or the network management protocol. As mentioned earlier, these tasks are left to the companion memos. This memo attempts to minimize the restrictions placed upon its companions so as to maximize generality. However, in some cases, restrictions have been made (e.g., the syntax which may be used when defining object types in the MIB) in order to encourage a particular style of management. Future editions of this memo may remove these restrictions.

3.1. Names

Names are used to identify managed objects. This memo specifies names which are hierarchical in nature. The OBJECT IDENTIFIER concept is used to model this notion. An OBJECT IDENTIFIER can be used for purposes other than naming managed object types; for example, each international standard has an OBJECT IDENTIFIER assigned to it for the purposes of identification. In short, OBJECT IDENTIFIERs are a means for identifying some object, regardless of the semantics associated with the object (e.g., a network object, a standards document, etc.)

An OBJECT IDENTIFIER is a sequence of integers which traverse a global tree. The tree consists of a root connected to a number of labeled nodes via edges. Each node may, in turn, have children of its own which are labeled. In this case, we may term the node a subtree. This process may continue to an arbitrary level of depth. Central to the notion of the OBJECT IDENTIFIER is the understanding that administrative control of the meanings assigned to the nodes may be delegated as one traverses the tree. A label is a pairing of a brief textual description and an integer.

The root node itself is unlabeled, but has at least three children directly under it: one node is administered by the International Standards Organization, with label iso(1); another is administrated by the International Telegraph and Telephone Consultative Committee, with label ccitt(2); and the third is jointly administered by the ISO and the CCITT, joint-iso-ccitt(3).

Under the iso(1) node, the ISO has designated one subtree for use by other (inter)national organizations, org(3). Of the children nodes present, two have been assigned to the U.S. National Bureau of Standards. One of these subtrees has been transferred by the NBS to the U.S. Department of Defense, dod(6).

As of this writing, the DoD has not indicated how it will manage its subtree of OBJECT IDENTIFIERs. This memo assumes that DoD will allocate a node to the Internet community, to be administered by the Internet Activities Board (IAB) as follows:

```
internet    OBJECT IDENTIFIER ::= { iso org(3) dod(6) 1 }
```

That is, the Internet subtree of OBJECT IDENTIFIERs starts with the prefix:

```
1.3.6.1.
```

This memo, as an RFC approved by the IAB, now specifies the policy under which this subtree of OBJECT IDENTIFIERs is administered. Initially, four nodes are present:

```
directory     OBJECT IDENTIFIER ::= { internet 1 }
mgmt          OBJECT IDENTIFIER ::= { internet 2 }
experimental   OBJECT IDENTIFIER ::= { internet 3 }
private       OBJECT IDENTIFIER ::= { internet 4 }
```

3.1.1. DIRECTORY

The directory(1) subtree is reserved for use with a future memo that discusses how the OSI Directory may be used in the Internet.

3.1.2. MGMT

The mgmt(2) subtree is used to identify objects which are defined in IAB-approved documents. Administration of the mgmt(2) subtree is delegated by the IAB to the Assigned Numbers authority for the Internet. As RFCs which define new versions of the Internet-standard Management Information Base are approved, they are assigned an OBJECT IDENTIFIER by the Assigned Numbers authority for identifying the objects defined by that memo.

For example, the RFC which defines the initial Internet standard MIB would be assigned management document number 1. This RFC would use the OBJECT IDENTIFIER

```
{ mgmt 1 }
```

or

```
1.3.6.1.2.1
```

in defining the Internet-standard MIB.

The generation of new versions of the Internet-standard MIB is a rigorous process. Section 5 of this memo describes the rules used when a new version is defined.

3.1.3. EXPERIMENTAL

The experimental(3) subtree is used to identify objects used in Internet experiments. Administration of the experimental(3) subtree is delegated by the IAB to the Assigned Numbers authority of the Internet.

For example, an experimenter might received number 17, and would have available the OBJECT IDENTIFIER

```
{ experimental 17 }
```

or

```
1.3.6.1.3.17
```

for use.

As a part of the assignment process, the Assigned Numbers authority may make requirements as to how that subtree is used.

3.1.4. PRIVATE

The private(4) subtree is used to identify objects defined unilaterally. Administration of the private(4) subtree is delegated by the IAB to the Assigned Numbers authority for the Internet. Initially, this subtree has at least one child:

```
enterprises   OBJECT IDENTIFIER ::= { private 1 }
```

The enterprises(1) subtree is used, among other things, to permit parties providing networking subsystems to register models of their products.

Upon receiving a subtree, the enterprise may, for example, define new MIB objects in this subtree. In addition, it is strongly recommended that the enterprise will also register its networking subsystems under this subtree, in order to provide an unambiguous identification mechanism for use in management protocols. For example, if the "Flintstones, Inc." enterprise produced networking subsystems, then they could request a node under the enterprises subtree from the Assigned Numbers authority. Such a node might be numbered:

```
1.3.6.1.4.1.42
```

The "Flintstones, Inc." enterprise might then register their "Fred Router" under the name of:

```
1.3.6.1.4.1.42.1.1
```

3.2. Syntax

Syntax is used to define the structure corresponding to object types. ASN.1 constructs are used to define this structure, although the full generality of ASN.1 is not permitted.

The ASN.1 type ObjectSyntax defines the different syntaxes which may be used in defining an object type.

3.2.1. Primitive Types

Only the ASN.1 primitive types INTEGER, OCTET STRING, OBJECT IDENTIFIER, and NULL are permitted. These are sometimes referred to as non-aggregate types.

3.2.1.1. Guidelines for Enumerated INTEGERs

If an enumerated INTEGER is listed as an object type, then a named-number having the value 0 shall not be present in the list of

enumerations. Use of this value is prohibited.

3.2.2. Constructor Types

The ASN.1 constructor type SEQUENCE is permitted, providing that it is used to generate either lists or tables.

For lists, the syntax takes the form:

```
SEQUENCE { <type1>, ..., <typeN> }
```

where each <type> resolves to one of the ASN.1 primitive types listed above. Further, these ASN.1 types are always present (the DEFAULT and OPTIONAL clauses do not appear in the SEQUENCE definition).

For tables, the syntax takes the form:

```
SEQUENCE OF <entry>
```

where <entry> resolves to a list constructor.

Lists and tables are sometimes referred to as aggregate types.

3.2.3. Defined Types

In addition, new application-wide types may be defined, so long as they resolve into an IMPLICITly defined ASN.1 primitive type, list, table, or some other application-wide type. Initially, few application-wide types are defined. Future memos will no doubt define others once a consensus is reached.

3.2.3.1. NetworkAddress

This CHOICE represents an address from one of possibly several protocol families. Currently, only one protocol family, the Internet family, is present in this CHOICE.

3.2.3.2. IpAddress

This application-wide type represents a 32-bit internet address. It is represented as an OCTET STRING of length 4, in network byte-order.

When this ASN.1 type is encoded using the ASN.1 basic encoding rules, only the primitive encoding form shall be used.

3.2.3.3. Counter

This application-wide type represents a non-negative integer which

monotonically increases until it reaches a maximum value, when it wraps around and starts increasing again from zero. This memo specifies a maximum value of 2^32-1 (4294967295 decimal) for counters.

3.2.3.4. Gauge

This application-wide type represents a non-negative integer, which may increase or decrease, but which latches at a maximum value. This memo specifies a maximum value of 2^32-1 (4294967295 decimal) for gauges.

3.2.3.5. TimeTicks

This application-wide type represents a non-negative integer which counts the time in hundredths of a second since some epoch. When object types are defined in the MIB which use this ASN.1 type, the description of the object type identifies the reference epoch.

3.2.3.6. Opaque

This application-wide type supports the capability to pass arbitrary ASN.1 syntax. A value is encoded using the ASN.1 basic rules into a string of octets. This, in turn, is encoded as an OCTET STRING, in effect "double-wrapping" the original ASN.1 value.

Note that a conforming implementation need only be able to accept and recognize opaquely-encoded data. It need not be able to unwrap the data and then interpret its contents.

Further note that by use of the ASN.1 EXTERNAL type, encodings other than ASN.1 may be used in opaquely-encoded data.

3.3. Encodings

Once an instance of an object type has been identified, its value may be transmitted by applying the basic encoding rules of ASN.1 to the syntax for the object type.

4. Managed Objects

Although it is not the purpose of this memo to define objects in the MIB, this memo specifies a format to be used by other memos which define these objects.

An object type definition consists of five fields:

OBJECT:

A textual name, termed the OBJECT DESCRIPTOR, for the object type, along with its corresponding OBJECT IDENTIFIER.

Syntax:
The abstract syntax for the object type. This must resolve to an instance of the ASN.1 type ObjectSyntax (defined below).

Definition:
A textual description of the semantics of the object type. Implementations should ensure that their instance of the object fulfills this definition since this MIB is intended for use in multi-vendor environments. As such it is vital that objects have consistent meaning across all machines.

Access:
One of read-only, read-write, write-only, or not-accessible.

Status:
One of mandatory, optional, or obsolete.

Future memos may also specify other fields for the objects which they define.

4.1. Guidelines for Object Names

No object type in the Internet-Standard MIB shall use a sub-identifier of 0 in its name. This value is reserved for use with future extensions.

Each OBJECT DESCRIPTOR corresponding to an object type in the internet-standard MIB shall be a unique, but mnemonic, printable string. This promotes a common language for humans to use when discussing the MIB and also facilitates simple table mappings for user interfaces.

4.2. Object Types and Instances

An object type is a definition of a kind of managed object; it is

declarative in nature. In contrast, an object instance is an instantiation of an object type which has been bound to a value. For example, the notion of an entry in a routing table might be defined in the MIB. Such a notion corresponds to an object type; individual entries in a particular routing table which exist at some time are object instances of that object type.

A collection of object types is defined in the MIB. Each such subject type is uniquely named by its OBJECT IDENTIFIER and also has a textual name, which is its OBJECT DESCRIPTOR. The means whereby object instances are referenced is not defined in the MIB. Reference to object instances is achieved by a protocol-specific mechanism: it is the responsibility of each management protocol adhering to the SMI to define this mechanism.

An object type may be defined in the MIB such that an instance of that object type represents an aggregation of information also represented by instances of some number of "subordinate" object types. For example, suppose the following object types are defined in the MIB:

```
OBJECT:
-------
   atIndex { atEntry 1 }

Syntax:
   INTEGER

Definition:
   The interface number for the physical address.

Access:
   read-write.

Status:
   mandatory.


OBJECT:
-------
   atPhysAddress { atEntry 2 }

Syntax:
   OCTET STRING

Definition:
   The media-dependent physical address.
```

```
   Access:
      read-write.

   Status:
      mandatory.


   OBJECT:
   -------
      atNetAddress { atEntry 3 }

   Syntax:
      NetworkAddress

   Definition:
      The network address corresponding to the media-dependent physical
      address.

   Access:
      read-write.

   Status:
      mandatory.
```

Then, a fourth object type might also be defined in the MIB:

```
   OBJECT:
   -------
      atEntry { atTable 1 }

   Syntax:

      AtEntry ::= SEQUENCE {
            atIndex
            INTEGER,
            atPhysAddress
            OCTET STRING,
            atNetAddress
            NetworkAddress
            }

   Definition:
      An entry in the address translation table.

   Access:
      read-write.
```

Status:
mandatory.

Each instance of this object type comprises information represented by instances of the former three object types. An object type defined in this way is called a list.

Similarly, tables can be formed by aggregations of a list type. For example, a fifth object type might also be defined in the MIB:

OBJECT:
---
atTable { at 1 }

Syntax:
SEQUENCE OF AtEntry

Definition:
The address translation table.

Access:
read-write.

Status:
mandatory.

such that each instance of the atTable object comprises information represented by the set of atEntry object types that collectively constitute a given atTable object instance, that is, a given address translation table.

Consider how one might refer to a simple object within a table. Continuing with the previous example, one might name the object type

{ atPhysAddress }

and specify, using a protocol-specific mechanism, the object instance

{ atNetAddress } = { internet "10.0.0.52" }

This pairing of object type and object instance would refer to all instances of atPhysAddress which are part of any entry in some address translation table for which the associated atNetAddress value is { internet "10.0.0.52" }.

To continue with this example, consider how one might refer to an aggregate object (list) within a table. Naming the object type

```
{ atEntry }
```

and specifying, using a protocol-specific mechanism, the object instance

```
{ atNetAddress } = { internet "10.0.0.52" }
```

refers to all instances of entries in the table for which the associated atNetAddress value is { internet "10.0.0.52" }.

Each management protocol must provide a mechanism for accessing simple (non-aggregate) object types. Each management protocol specifies whether or not it supports access to aggregate object types. Further, the protocol must specify which instances are "returned" when an object type/instance pairing refers to more than one instance of a type.

To afford support for a variety of management protocols, all information by which instances of a given object type may be usefully distinguished, one from another, is represented by instances of object types defined in the MIB.

4.3. Macros for Managed Objects

In order to facilitate the use of tools for processing the definition of the MIB, the OBJECT-TYPE macro may be used. This macro permits the key aspects of an object type to be represented in a formal way.

```
OBJECT-TYPE MACRO ::=
BEGIN
    TYPE NOTATION ::= "SYNTAX" type (TYPE ObjectSyntax)
                      "ACCESS" Access
                      "STATUS" Status
    VALUE NOTATION ::= value (VALUE ObjectName)

    Access ::= "read-only"
                    | "read-write"
                    | "write-only"
                    | "not-accessible"
    Status ::= "mandatory"
                    | "optional"
                    | "obsolete"
    END
```

Given the object types defined earlier, we might imagine the following definitions being present in the MIB:

```
            atIndex OBJECT-TYPE
```

```
                SYNTAX  INTEGER
                ACCESS  read-write
                STATUS  mandatory
                ::= { atEntry 1 }

        atPhysAddress OBJECT-TYPE
                SYNTAX  OCTET STRING
                ACCESS  read-write
                STATUS  mandatory
                ::= { atEntry 2 }

        atNetAddress OBJECT-TYPE
                SYNTAX  NetworkAddress
                ACCESS  read-write
                STATUS  mandatory
                ::= { atEntry 3 }

        atEntry OBJECT-TYPE
                SYNTAX  AtEntry
                ACCESS  read-write
                STATUS  mandatory
                ::= { atTable 1 }

        atTable OBJECT-TYPE
                SYNTAX  SEQUENCE OF AtEntry
                ACCESS  read-write
                STATUS  mandatory
                ::= { at 1 }

        AtEntry ::= SEQUENCE {
            atIndex
                INTEGER,
            atPhysAddress
                OCTET STRING,
            atNetAddress
                NetworkAddress
        }
```

The first five definitions describe object types, relating, for example, the OBJECT DESCRIPTOR atIndex to the OBJECT IDENTIFIER { atEntry 1 }. In addition, the syntax of this object is defined (INTEGER) along with the access permitted (read-write) and status (mandatory). The sixth definition describes an ASN.1 type called AtEntry.

5. Extensions to the MIB

Every Internet-standard MIB document obsoletes all previous such documents. The portion of a name, termed the tail, following the OBJECT IDENTIFIER

{ mgmt version-number }

used to name objects shall remain unchanged between versions. New versions may:

(1) declare old object types obsolete (if necessary), but not delete their names;

(2) augment the definition of an object type corresponding to a list by appending non-aggregate object types to the object types in the list; or,

(3) define entirely new object types.

New versions may not:

(1) change the semantics of any previously defined object without changing the name of that object.

These rules are important because they admit easier support for multiple versions of the Internet-standard MIB. In particular, the semantics associated with the tail of a name remain constant throughout different versions of the MIB. Because multiple versions of the MIB may thus coincide in "tail-space," implementations supporting multiple versions of the MIB can be vastly simplified.

However, as a consequence, a management agent might return an instance corresponding to a superset of the expected object type. Following the principle of robustness, in this exceptional case, a manager should ignore any additional information beyond the definition of the expected object type. However, the robustness principle requires that one exercise care with respect to control actions: if an instance does not have the same syntax as its expected object type, then those control actions must fail. In both the monitoring and control cases, the name of an object returned by an operation must be identical to the name requested by an operation.

6. Definitions

```
RFC1065-SMI DEFINITIONS ::= BEGIN

EXPORTS -- EVERYTHING
        internet, directory, mgmt,
        experimental, private, enterprises,
        OBJECT-TYPE, ObjectName, ObjectSyntax, SimpleSyntax,
        ApplicationSyntax, NetworkAddress, IpAddress,
        Counter, Gauge, TimeTicks, Opaque;

-- the path to the root

internet      OBJECT IDENTIFIER ::= { iso org(3) dod(6) 1 }

directory     OBJECT IDENTIFIER ::= { internet 1 }

mgmt          OBJECT IDENTIFIER ::= { internet 2 }

experimental  OBJECT IDENTIFIER ::= { internet 3 }

private       OBJECT IDENTIFIER ::= { internet 4 }
enterprises   OBJECT IDENTIFIER ::= { private 1 }


-- definition of object types

OBJECT-TYPE MACRO ::=
BEGIN
    TYPE NOTATION ::= "SYNTAX" type (TYPE ObjectSyntax)
                      "ACCESS" Access
                      "STATUS" Status
    VALUE NOTATION ::= value (VALUE ObjectName)

    Access ::= "read-only"
                    | "read-write"
                    | "write-only"
                    | "not-accessible"
    Status ::= "mandatory"
                    | "optional"
                    | "obsolete"
END

   -- names of objects in the MIB

   ObjectName ::=
       OBJECT IDENTIFIER
```

```
-- syntax of objects in the MIB

ObjectSyntax ::=
    CHOICE {
        simple
            SimpleSyntax,

-- note that simple SEQUENCEs are not directly
-- mentioned here to keep things simple (i.e.,
-- prevent mis-use).  However, application-wide
-- types which are IMPLICITly encoded simple
-- SEQUENCEs may appear in the following CHOICE

            application-wide
                ApplicationSyntax
        }

   SimpleSyntax ::=
       CHOICE {
           number
               INTEGER,

           string
               OCTET STRING,

           object
               OBJECT IDENTIFIER,

           empty
               NULL
       }

  ApplicationSyntax ::=
      CHOICE {
          address
              NetworkAddress,

          counter
              Counter,

          gauge
              Gauge,

          ticks
              TimeTicks,

          arbitrary
              Opaque
```

```
-- other application-wide types, as they are
-- defined, will be added here
    }


-- application-wide types

NetworkAddress ::=
    CHOICE {
        internet
            IpAddress
    }

IpAddress ::=
    [APPLICATION 0]          -- in network-byte order
        IMPLICIT OCTET STRING (SIZE (4))

Counter ::=
    [APPLICATION 1]
        IMPLICIT INTEGER (0..4294967295)

Gauge ::=
    [APPLICATION 2]
        IMPLICIT INTEGER (0..4294967295)

TimeTicks ::=
    [APPLICATION 3]
        IMPLICIT INTEGER

Opaque ::=
    [APPLICATION 4]          -- arbitrary ASN.1 value,
        IMPLICIT OCTET STRING   --   "double-wrapped"

END
```

7. Acknowledgements

This memo was influenced by three sets of contributors:

First, Lee Labarre of the MITRE Corporation, who as author of the NETMAN SMI [4], presented the basic roadmap for the SMI.

Second, several individuals who provided valuable comments on this memo prior to its initial distribution:

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Dean Throop, Data General
Unni Warrier, Unisys

8. References

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Network Working Group
Request for Comments: 1318

B. Stewart, Editor
Xyplex, Inc.
April 1992

Definitions of Managed Objects for Parallel-printer-like Hardware Devices

Status of this Memo

This document specifies an IAB standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "IAB Official Protocol Standards" for the standardization state and status of this protocol. Distribution of this memo is unlimited.

1. Abstract

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in TCP/IP based internets. In particular, it defines objects for the management of parallel-printer-like devices.

2. The Network Management Framework

The Internet-standard Network Management Framework consists of three components. They are:

RFC 1155 which defines the SMI, the mechanisms used for describing and naming objects for the purpose of management. RFC 1212 defines a more concise description mechanism, which is wholly consistent with the SMI.

RFC 1156 which defines MIB-I, the core set of managed objects for the Internet suite of protocols. RFC 1213, defines MIB-II, an evolution of MIB-I based on implementation experience and new operational requirements.

RFC 1157 which defines the SNMP, the protocol used for network access to managed objects.

The Framework permits new objects to be defined for the purpose of experimentation and evaluation.

3. Objects

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB.

Objects in the MIB are defined using the subset of Abstract Syntax Notation One (ASN.1) [7] defined in the SMI. In particular, each object has a name, a syntax, and an encoding. The name is an object identifier, an administratively assigned name, which specifies an object type.

The object type together with an object instance serves to uniquely identify a specific instantiation of the object. For human convenience, we often use a textual string, termed the OBJECT DESCRIPTOR, to also refer to the object type.

The syntax of an object type defines the abstract data structure corresponding to that object type. The ASN.1 language is used for this purpose. However, the SMI [3] purposely restricts the ASN.1 constructs which may be used. These restrictions are explicitly made for simplicity.

The encoding of an object type is simply how that object type is represented using the object type's syntax. Implicitly tied to the notion of an object type's syntax and encoding is how the object type is represented when being transmitted on the network.

The SMI specifies the use of the basic encoding rules of ASN.1 [8], subject to the additional requirements imposed by the SNMP.

3.1. Format of Definitions

Section 5 contains the specification of all object types contained in this MIB module. The object types are defined using the conventions defined in the SMI, as amended by the extensions specified in [9,10].

4. Overview

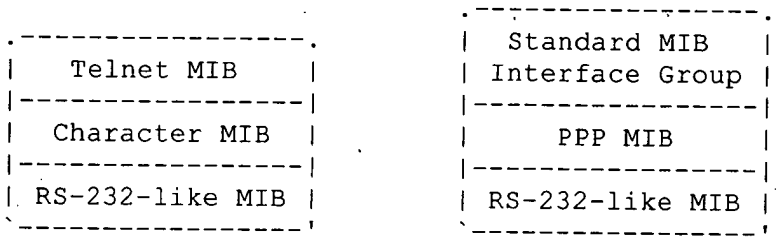
The Parallel-printer-like Hardware Device MIB applies to interface ports that might logically support the Interface MIB, a Transmission MIB, or the Character MIB (most likely the latter). The most common example is a Centronics or Data Products type parallel printer port.

The Parallel-printer-like MIB is one of a set of MIBs designed for complementary use. At this writing, the set comprises:

Character MIB
PPP MIB
RS-232-like MIB
Parallel-printer-like MIB

The RS-232-like MIB and the Parallel-printer-like MIB represent the physical layer, providing service to higher layers such as the Character MIB or PPP MIB. Further MIBs may appear above these.

The following diagram shows two possible "MIB stacks", each using the RS-232-like MIB.



The intent of the model is for the physical-level MIBs to represent the lowest level, regardless of the higher level that may be using it. In turn, separate higher level MIBs represent specific applications, such as a terminal (the Character MIB) or a network connection (the PPP MIB).

The Parallel-printer-like MIB is mandatory for all systems that have such a hardware port supporting services managed through some other MIB, for example, the Character MIB.

The Parallel-printer-like MIB includes multiple similar types of hardware, and as a result contains objects not applicable to all of those types. Such objects are in a separate branch of the MIB, which is required when applicable and otherwise absent.

The Parallel-printer-like MIB includes Centronics, Data Products, and other parallel physical links with a similar set of control signals.

The MIB contains objects that relate to physical layer connections. Such connections may provide interesting hardware signals (other than for basic data transfer), such as Power and PaperOut.

The MIB comprises one base object and three tables, detailed

in the following sections. The tables contain objects for ports and input and output control signals.

5. Definitions

```
        RFC1318-MIB DEFINITIONS ::= BEGIN

        IMPORTS
                Counter
                        FROM RFC1155-SMI
                transmission
                        FROM RFC1213-MIB
                OBJECT-TYPE
                        FROM RFC-1212;

    -- this is the MIB module for Parallel-printer-like
    -- hardware devices

    para    OBJECT IDENTIFIER ::= { transmission 34 }

    -- the generic Parallel-printer-like group

    -- Implementation of this group is mandatory for all
    -- systems that have Parallel-printer-like hardware
    -- ports supporting higher level services such as
    -- character streams

    paraNumber OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The number of ports (regardless of their current
            state) in the Parallel-printer-like port table."
        ::= { para 1 }


    -- the Parallel-printer-like Port table

    paraPortTable OBJECT-TYPE
        SYNTAX SEQUENCE OF ParaPortEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
            "A list of port entries.  The number of entries is
            given by the value of paraNumber."
        ::= { para 2 }
```

```
paraPortEntry OBJECT-TYPE
    SYNTAX ParaPortEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Status and parameter values for a port."
    INDEX { paraPortIndex }
    ::= { paraPortTable 1 }

ParaPortEntry ::=
    SEQUENCE {
        paraPortIndex
            INTEGER,
        paraPortType
            INTEGER,
        paraPortInSigNumber
            INTEGER,
        paraPortOutSigNumber
            INTEGER
    }

paraPortIndex OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "A unique value for each port.  Its value ranges
        between 1 and the value of paraNumber.  By
        convention and if possible, hardware port numbers
        map directly to external connectors.  The value for
        each port must remain constant at least from one
        re-initialization of the network management agent to
        the next."
    ::= { paraPortEntry 1 }

paraPortType OBJECT-TYPE
    SYNTAX INTEGER {
        other(1),
        centronics(2),
        dataproducts(3)
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The port's hardware type."
    ::= { paraPortEntry 2 }

paraPortInSigNumber OBJECT-TYPE
```

```
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The number of input signals for the port in the
            input signal table (paraPortInSigTable).  The table
            contains entries only for those signals the software
            can detect."
        ::= { paraPortEntry 3 }

    paraPortOutSigNumber OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The number of output signals for the port in the
            output signal table (paraPortOutSigTable).  The
            table contains entries only for those signals the
            software can assert."
        ::= { paraPortEntry 4 }


    -- the Input Signal table

    paraInSigTable OBJECT-TYPE
        SYNTAX SEQUENCE OF ParaInSigEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
            "A list of port input control signal entries."
        ::= { para 3 }

    paraInSigEntry OBJECT-TYPE
        SYNTAX ParaInSigEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
            "Input control signal status for a hardware port."
        INDEX { paraInSigPortIndex, paraInSigName }
        ::= { paraInSigTable 1 }

    ParaInSigEntry ::=
        SEQUENCE {
            paraInSigPortIndex
                INTEGER,
            paraInSigName
                INTEGER,
            paraInSigState
```

```
                INTEGER,
            paraInSigChanges
                Counter
        }

    paraInSigPortIndex OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The value of paraPortIndex for the port to which
            this entry belongs."
        ::= { paraInSigEntry 1 }

    paraInSigName OBJECT-TYPE
        SYNTAX INTEGER { power(1), online(2), busy(3),
                         paperout(4), fault(5) }
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Identification of a hardware signal."
        ::= { paraInSigEntry 2 }

    paraInSigState OBJECT-TYPE
        SYNTAX INTEGER { none(1), on(2), off(3) }
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The current signal state."
        ::= { paraInSigEntry 3 }

    paraInSigChanges OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The number of times the signal has changed from
            'on' to 'off' or from 'off' to 'on'."
        ::= { paraInSigEntry 4 }


    -- the Output Signal table

    paraOutSigTable OBJECT-TYPE
        SYNTAX SEQUENCE OF ParaOutSigEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
```

```
            "A list of port output control signal entries."
        ::= { para 4 }

    paraOutSigEntry OBJECT-TYPE
        SYNTAX ParaOutSigEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
            "Output control signal status for a hardware port."
        INDEX { paraOutSigPortIndex, paraOutSigName }
        ::= { paraOutSigTable 1 }

    ParaOutSigEntry ::=
        SEQUENCE {
            paraOutSigPortIndex
                INTEGER,
            paraOutSigName
                INTEGER,
            paraOutSigState
                INTEGER,
            paraOutSigChanges
                Counter
        }

    paraOutSigPortIndex OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The value of paraPortIndex for the port to which
            this entry belongs."
        ::= { paraOutSigEntry 1 }

    paraOutSigName OBJECT-TYPE
        SYNTAX INTEGER { power(1), online(2), busy(3),
                         paperout(4), fault(5) }
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Identification of a hardware signal."
        ::= { paraOutSigEntry 2 }

    paraOutSigState OBJECT-TYPE
        SYNTAX INTEGER { none(1), on(2), off(3) }
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The current signal state."
```

```
        ::= { paraOutSigEntry 3 }

    paraOutSigChanges OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "The number of times the signal has changed from
            'on' to 'off' or from 'off' to 'on'."
        ::= { paraOutSigEntry 4 }

    END
```

6. Acknowledgements

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[3] Rose M., and K. McCloghrie, "Structure and Identification of Management Information for TCP/IP-based internets", RFC 1155, Performance Systems International, Hughes LAN Systems, May 1990.

[4] McCloghrie K., and M. Rose, "Management Information Base for Network Management of TCP/IP-based internets", RFC 1156, Hughes LAN Systems, Performance Systems International, May 1990.

[5] Case, J., Fedor, M., Schoffstall, M., and J. Davin, Simple Network Management Protocol", RFC 1157, SNMP Research, Performance Systems International, Performance Systems International, MIT Laboratory for Computer Science, May 1990.

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[8] Information processing systems - Open Systems Interconnection - Specification of Basic Encoding Rules for Abstract Notation One (ASN.1), International Organization for Standardization, International Standard 8825, December 1987.

[9] Rose, M., and K. McCloghrie, Editors, "Concise MIB Definitions", RFC 1212, Performance Systems International, Hughes LAN Systems, March 1991.

[10] Rose, M., Editor, "A Convention for Defining Traps for use with the SNMP", RFC 1215, Performance Systems International, March 1991.

8. Security Considerations

Security issues are not discussed in this memo.

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<- RFC Index (1201..1300)

RFC 1283

Obsoleted by RFC 1418

Network Working Group
Request for Comments: 1283
Obsoletes: RFC 1161

M. Rose
Dover Beach Consulting, Inc.
December 1991

SNMP over OSI

Status of this Memo

This memo defines an Experimental Protocol for the Internet community. Discussion and suggestions for improvement are requested. Please refer to the current edition of the "IAB Official Protocol Standards" for the standardization state and status of this protocol. Distribution of this memo is unlimited.

Table of Contents

1. Background

The Simple Network Management Protocol (SNMP) as defined in [1] is now used as an integral part of the network management framework for TCP/IP-based internets. Together, with its companions standards, which define the Structure of Management Information (SMI) [2], and the Management Information Base (MIB) [3], the SNMP has received widespread deployment in many operational networks running the Internet suite of protocols.

It should not be surprising that many of these sites might acquire OSI capabilities and may wish to leverage their investment in SNMP technology towards managing those OSI components. This memo addresses these concerns by defining a framework for running the SNMP

in an environment which supports the OSI transport services.

In OSI, there are two such services, a connection-oriented transport services (COTS) as defined in [4], and a connectionless-mode transport service (CLTS) as defined in [5]. Although the primary deployment of the SNMP is over the connectionless-mode transport service provided by the Internet suite of protocols (i.e., the User Datagram Protocol or UDP [6]), a design goal of the SNMP was to be able to use either a CO-mode or CL-mode transport service. As such, this memo describes mappings from the SNMP onto both the COTS and the CLTS.

1.1. A Digression on User Interfaces

It is likely that user-interfaces to the SNMP will be developed that support multiple transport backings. In an environment such as this, it is often important to maintain a consistent addressing scheme for users. Since the mappings described in this memo are onto the OSI transport services, use of the textual scheme described in [7], which describes a string encoding for OSI presentation addresses, is recommended. The syntax defined in [7] is equally applicable towards transport addresses.

In this context, a string encoding usually appears as:

[<t-selector>/]<n-provider><n-address>[+<n-info>]

where:

(1) <t-selector> is usually either an ASCII string enclosed in double-quotes (e.g., "snmp"), or a hexadecimal number (e.g., '736e6d70'H);

(2) <n-provider> is one of several well-known providers of a connectivity-service, one of: "Internet=" for a transport-service from the Internet suite of protocols, "Int-X25=" for the 1980 CCITT X.25 recommendation, or "NS+" for the OSI network service;

(3) <n-address> is an address in a format specific to the <n-provider>; and,

(4) <n-info> is any additional addressing information in a format specific to the <n-provider>.

It is not the purpose of this memo to provide an exhaustive description of string encodings such as these. Readers should consult [7] for detailed information on the syntax. However, this

memo recommends that, as an implementation option, user-interfaces to the SNMP that support multiple transport backings SHOULD implement this syntax.

1.1.1. Addressing Conventions for UDP-based service

In the context of a UDP-based transport backing, addresses would be encoded as:

Internet=<host>+161+2

which says that the transport service is from the Internet suite of protocols, residing at <host>, on port 161, using the UDP (2). The token <host> may be either a domain name or a dotted-quad, e.g., both

Internet=cheetah.nyser.net+161+2

and

Internet=192.52.180.1+161+2

are both valid. Note however that if domain name "cheetah.nyser.net" maps to multiple IP addresses, then this implies multiple transport addresses. The number of addresses examined by the application (and the order of examination) are specific to each application.

Of course, this memo does not require that other interface schemes not be used. Clearly, use of a simple hostname is preferable to the string encoding above. However, for the sake of uniformity, for those user-interfaces to the SNMP that support multiple transport backings, it is strongly RECOMMENDED that the syntax in [7] be adopted and even the mapping for UDP-based transport be valid.

1.2. A Digression of Layering

Although other frameworks view network management as an application, extensive experience with the SNMP suggests otherwise. In essense, network management is a function unlike any other user of a transport service. The citation [8] develops this argument in full. As such, it is inappropriate to map the SNMP onto the OSI application layer. Rather, it is mapped to OSI transport services, in order to build on the proven success of the Internet network management framework.

2. Mapping onto CLTS

Mapping the SNMP onto the CLTS is straight-forward. The elements of procedure are identical to that of using the UDP, with one exception: a slightly different Trap PDU is used. Further, note that the CLTS

and the service offered by the UDP both transmit packets of

information which contain full addressing information. Thus, mapping the SNMP onto the CLTS, a "transport address" in the context of [1], is simply a transport-selector and network address.

2.1. Addressing Conventions

Unlike the Internet suite of protocols, OSI does not use well-known ports. Rather demultiplexing occurs on the basis of "selectors", which are opaque strings of octets, which have meaning only at the destination. In order to foster interoperable implementations of the SNMP over the CLTS, it is necessary define a selector for this purpose.

2.1.1. Conventions for CLNP-based service

When the CLTS is used to provide the transport backing for the SNMP, demultiplexing will occur on the basis of transport selector. The transport selector used shall be the four ASCII characters

snmp

Thus, using the string encoding of [7], such addresses may be textual, described as:

"snmp"/NS+<nsap>

where:

(1) <nsap> is a hex string defining the nsap, e.g.,

"snmp"/NS+490059080020003 8bafe00

Similarly, SNMP traps are, by convention, sent to a manager listening on the transport selector

snmp-trap

which consists of nine ASCII characters.

3. Mapping onto COTS

Mapping the SNMP onto the COTS is more difficult as the SNMP does not specifically require an existing connection. Thus, the mapping consists of establishing a transport connection, sending one or more SNMP messages on that connection, and then releasing the transport connection. Further, a slightly different Trap PDU is used.

Consistent with the SNMP model, the initiator of a connection should not require that responses to a request be returned on that connection. However, if a responder to a connection sends SNMP messages on a connection, then these MUST be in response to requests received on that connection.

Ideally, the transport connection SHOULD be released by the initiator, however, note that the responder may release the connection due to resource limitations. Further note, that the amount of time a connection remains established is implementation-specific. Implementors should take care to choose an appropriate dynamic algorithm.

Also consistent with the SNMP model, the initiator should not associate any reliability characteristics with the use of a connection. Issues such as retransmission of SNMP messages, etc., always remain with the SNMP application, not with the transport service.

3.1. Addressing Conventions

Unlike the Internet suite of protocols, OSI does not use well-known ports. Rather demultiplexing occurs on the basis of "selectors", which are opaque strings of octets, which have meaning only at the destination. In order to foster interoperable implementations of the SNMP over the COTS, it is necessary define a selector for this purpose. However, to be consistent with the various connectivity-services, different conventions, based on the actual underlying service, will be used.

3.1.1. Conventions for TP4/CLNP-based service

When a COTS based on the TP4/CLNP is used to provide the transport backing for the SNMP, demultiplexing will occur on the basis of transport selector. The transport selector used shall be the four ASCII characters

snmp

Thus, using the string encoding of [7], such addresses may be textual, described as:

"snmp"/NS+<nsap>

where:

(1) <nsap> is a hex string defining the nsap, e.g.,

"snmp"/NS+490059080020003 8bafe00

Similarly, SNMP traps are, by convention, sent to a manager listening on the transport selector

snmp-trap

which consists of nine ASCII characters.

3.1.2. Conventions for TP0/X.25-based service

When a COTS based on the TP0/X.25 is used to provide the transport backing for the SNMP, demultiplexing will occur on the basis of X.25 protocol-ID. The protocol-ID used shall be the four octets

03018200

This is the X.25 protocol-ID assigned for local management purposes. Thus, using the string encoding of [7], such addresses may be textual described as:

Int-X25=<dte>+PID+03018200

where:

(1) <dte> is the X.121 DTE, e.g.,

Int-X25=23421920030013+PID+03018200

Similarly, SNMP traps are, by convention, sent to a manager listening on the protocol-ID

03019000

This is an X.25 protocol-ID assigned for local purposes.

4. Trap PDU

The Trap-PDU defined in [1] is designed to represent traps generated on IP networks. As such, a slightly different PDU must be used when representing traps generated on OSI networks.

```
RFC1283 DEFINTIONS ::= BEGIN

IMPORTS
     TimeTicks
         FROM RFC1155-SMI  -- [2] --
     VarBindList
         FROM RFC1157-SNMP -- [1] --
     ClnpAddress
```

```
         FROM CLNS-MIB     -- [9] --;

   Trap-PDU ::=
        [4]
            IMPLICT SEQUENCE {
                enterprise              -- type of object generating
                    OBJECT IDENTIFIER,  -- trap, see sysObjectID

                agent-addr              -- address of object generating
                    ClnpAddress,        -- trap
```

```
        generic-trap            -- generic trap type
            INTEGER {
                coldStart(0),
                warmStart(1),
                linkDown(2),
                linkUp(3),
                authenticationFailure(4),
                egpNeighborLoss(5),
                enterpriseSpecific(6)
            },

        specific-trap           -- specific code, present even
            INTEGER,            -- if generic-trap is not
                                -- enterpriseSpecific

        time-stamp              -- time elapsed between the last
            TimeTicks,          -- (re)initialization of the
                                -- network entity and the
                                -- generation of the trap

        variable-bindings       -- "interesting" information
            VarBindList
    }

END
```

5. Acknowledgements

The predecessor of this document (RFC 1161) was produced by the SNMP Working Group, and subsequently modified by the editor to reflect operational experience gained since the original publication.

6. References

[1] Case, J., Fedor, M., Schoffstall, M., and J. Davin, "A Simple Network Management Protocol (SNMP)", RFC 1157, SNMP Research, Performance Systems International, Performance Systems

---

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[3] McCloghrie K., and M. Rose, Editors, "Management Information Base for Network Management of TCP/IP-based internets", RFC 1213, Hughes LAN Systems, Performance Systems International, March 1991.

[4] Information Processing Systems - Open Systems Interconnection, "Transport Service Definition", International Organization for Standardization, International Standard 8072, June 1986.

[5] Information Processing Systems - Open Systems Interconnection, "Transport Service Definition - Addendum 1: Connectionless-mode Transmission", International Organization for Standardization, International Standard 8072/AD 1, December 1986.

[6] Postel, J., "User Datagram Protocol", RFC 768, USC/Information Sciences Institute, November 1980.

[7] Kille, S., "A String Encoding of Presentation Address", RFC 1278, Department of Computer Science, University College London, November 1991.

[8] Case, J., Davin, J., Fedor, M., and M. Schoffstall, "Network Management and the Design of SNMP", ConneXions (ISSN 0894-5926), Volume 3, Number 3, March 1989.

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7. Security Considerations

Security issues are not discussed in this memo.

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Definitions of Managed Objects for IEEE 802.3 Repeater Devices

Status of this Memo

This RFC specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" for the standardization state and status of this protocol. Distribution of this memo is unlimited.

Abstract

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it defines objects for managing IEEE 802.3 10 Mb/second baseband repeaters, sometimes referred to as "hubs."

Table of Contents

1. The Network Management Framework

The Internet-standard Network Management Framework consists of three components. They are:

- o STD 16, RFC 1155 which defines the SMI, the mechanisms used for describing and naming objects for the purpose of management. STD 16, RFC 1212 defines a more concise description mechanism, which is wholly consistent with the SMI.

- o STD 17, RFC 1213 defines MIB-II, the core set of managed objects for the Internet suite of protocols.

- o STD 15, RFC 1157 which defines the SNMP, the protocol used for network access to managed objects.

The Framework permits new objects to be defined for the purpose of experimentation and evaluation.

1.1. Object Definitions

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using the subset of Abstract Syntax Notation One (ASN.1) defined in the SMI. In particular, each object object type is named by an OBJECT IDENTIFIER, an administratively assigned name. The object type together with an object instance serves to uniquely identify a specific instantiation of the object. For human convenience, we often use a textual string, termed the descriptor, to refer to the object type.

2. Overview

Instances of the object types defined in this memo represent attributes of an IEEE 802.3 (Ethernet-like) repeater, as defined by Section 9, "Repeater Unit for 10 Mb/s Baseband Networks" in the IEEE 802.3/ISO 8802-3 CSMA/CD standard [7].

These Repeater MIB objects may be used to manage non-standard repeater-like devices, but defining objects to describe

implementation-specific properties of non-standard repeater-like devices is outside the scope of this memo.

The definitions presented here are based on the IEEE draft standard P802.3K, "Layer Management for 10 Mb/s Baseband Repeaters" [8]. Implementors of these MIB objects should note that [8] explicitly describes when, where, and how various repeater attributes are measured. The IEEE document also describes the effects of repeater actions that may be invoked by manipulating instances of the MIB objects defined here.

The counters in this document are defined to be the same as those counters in the IEEE 802.3 Repeater Management draft, with the intention that the same instrumentation can be used to implement both the IEEE and IETF management standards.

2.1. Terminology

2.1.1. Repeaters, Hubs and Concentrators

In late 1988, the IEEE 802.3 Hub Management task force was chartered to define managed objects for both 802.3 repeaters and the proposed 10BASE-FA synchronous active stars. The term "hub" was used to cover both repeaters and active stars.

In March, 1991, the active star proposal was dropped from the 10BASE-F draft. Subsequently the 802.3 group changed the name of the task force to be the IEEE 802.3 Repeater Management Task Force, and likewise renamed their draft.

The use of the term "hub" has led to some confusion, as the terms "hub," "intelligent hub," and "concentrator" are often used to indicate a modular chassis with plug-in modules that provide generalized LAN/WAN connectivity, often with a mix of 802.3 repeater, token ring, and FDDI connectivity, internetworked by bridges, routers, and terminal servers.

To be clear that this work covers the management of IEEE 802.3 repeaters only, the editors of this MIB definitions document chose to call this a "Repeater MIB" instead of a "Hub MIB."

2.1.2. Repeaters, Ports, and MAUs

The following text roughly defines the terms "repeater," "port," and "MAU" as used in the context of this memo. This text is imprecise and omits many technical details. For a more complete and precise definition of these terms, refer to Section 9 of [7].

An IEEE 802.3 repeater connects "Ethernet-like" media segments together to extend the network length and topology beyond what can be achieved with a single coax segment. It can be pictured as a star structure with two or more input/output ports. The diagram below illustrates a 6-port repeater:

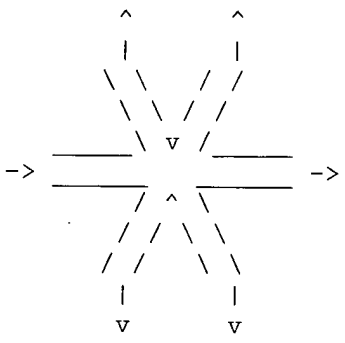

Figure 1. Repeater Unit

All the stations on the media segments connected to a given repeater's ports participate in a single collision domain. A packet transmitted by any of these stations is seen by all of these stations.

Data coming in on any port in the repeater is transmitted out through each of the remaining n-1 ports. If data comes in to the repeater on two or more ports simultaneously or the repeater detects a collision on the incoming port, the repeater transmits a jamming signal out on all ports for the duration of the collision.

A repeater is a bit-wise store-and-forward device. It is differentiated from a bridge (a frame store-and-forward device) in that it is primarily concerned with carrier sense and data bits, and does not make data-handling decisions based on the legality or contents of a packet. A repeater retransmits data bits as they are received. Its data FIFO holds only enough bits to make sure that the FIFO does not underflow when the data rate of incoming bits is slightly slower than the repeater's transmission rate.

A repeater is not an end-station on the network, and does not count toward the overall limit of 1024 stations. A repeater has no MAC address associated with it, and therefore packets may not be addressed to the repeater or to its ports. (Packets may be addressed to the MAC address of a management entity that is monitoring a repeater. This management entity may or may not be connected to the network through one of the repeater's ports. How the management entity obtains information about the activity on the repeater is an

implementation issue, and is not discussed in this memo.)

A repeater is connected to the network with Medium Attachment Units (MAUs), and sometimes through Attachment Unit Interfaces (AUIs) as well. ("MAUs" are also known as transceivers, and an "AUI" is the same as a 15-pin Ethernet or DIX connector.)

The 802.3 standard defines a "repeater set" as the "repeater unit" plus its associated MAUs (and AUIs if present). The "repeater unit" is defined as the portion of the repeater set that is inboard of the physical media interfaces. The MAUs may be physically separate from the repeater unit, or they may be integrated into the same physical package.

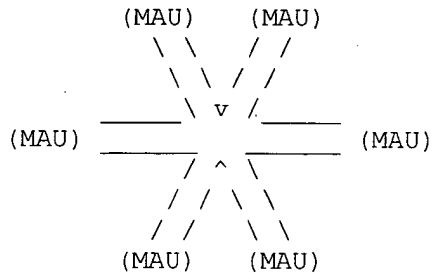

Figure 2. Repeater Set

The most commonly-used MAUs are the 10BASE-5 (AUI to thick "yellow" coax), 10BASE-2 (BNC to thin coax), 10BASE-T (unshielded twisted-pair), and FOIRL (asynchronous fiber optic inter-repeater link, which is being combined into the 10BASE-F standard as 10BASE-FL). The draft 10BASE-F standard also includes the definition for a new synchronous fiber optic attachment, known as 10BASE-FB.

It should be stressed that the repeater MIB being defined by the IEEE covers only the repeater unit management - it does not include management of the MAUs that form the repeater set. The IEEE recognizes that MAU management should be the same for MAUs connected to end-stations (DTEs) as it is for MAUs connected to repeaters. This memo follows the same strategy; the definition of management information for MAUs is being addressed in a separate memo.

2.1.3. Ports and Groups

Repeaters are often implemented in modular "concentrators," where a card cage holds several field-replaceable cards. Several cards may form a single repeater unit, with each card containing one or more of the repeater's ports. Because of this modular architecture, users typically identify these repeater ports with a card number plus the

port number relative to the card, e.g., Card 3, Port 11.

To support this modular numbering scheme, this document follows the example of the IEEE Repeater Management draft [8], allowing an implementor to separate the ports in a repeater into "groups", if desired. For example, an implementor might choose to represent field-replaceable units as groups of ports so that the port numbering would match the modular hardware implementation.

This group mapping is recommended but optional. An implementor may choose to put all of a modular repeater's ports into a single group, or to divide the ports into groups that do not match physical divisions.

The object rptrGroupCapacity, which has a maximum value of 1024, indicates the maximum number of groups that a given repeater may contain. The value of rptrGroupCapacity must remain constant from one management restart to the next.

Each group within the repeater is uniquely identified by a group number in the range 1..rptrGroupCapacity. Groups may come and go without causing a management reset, and may be sparsely numbered within the repeater. For example, in a 12- card cage, cards 3, 5, 6, and 7 may together form a single repeater, and the implementor may choose to number them as groups 3, 5, 6, and 7, respectively.

The object rptrGroupPortCapacity, which also has a maximum value of 1024, indicates the maximum number of ports that a given group may contain. The value of rptrGroupPortCapacity must not change for a given group. However, a group may be deleted from the repeater and replaced with a group containing a different number of ports. The value of rptrGroupLastOperStatusChange will indicate that a change took place.

Each port within the repeater is uniquely identified by a combination of group number and port number, where port number is an integer in the range 1..rptrGroupPortCapacity. As with groups within a repeater, ports within a group may be sparsely numbered. Likewise, ports may come and go within a group without causing a management reset.

2.1.4. Internal Ports and MAUs

Repeater ports may be thought of as sources of traffic into the repeater. In addition to the externally visible ports mentioned above, such as those with 10BASE-T MAUs, or AUI ports with external transceivers, some implementations may have internal ports that are not obvious to the end-user but are nevertheless sources of traffic

into the repeater. Examples include internal management ports, through which an agent communicates, and ports connecting to a backplane internal to the implementation.

Some implementations may not manage all of a repeater's ports. For managed ports, there must be entries in the port table; unmanaged ports will not show up in the table.

It is the decision of the implementor to select the appropriate group(s) in which to place internal ports. GroupCapacity for a given group always reflects the number of MANAGED ports in that group.

If some ports are unmanaged such that not all packet sources are represented by managed ports, then the sum of the input counters for the repeater will not equal the actual output of the repeater.

2.2. Supporting Functions

The IEEE 802.3 Hub Management draft [8] defines the following seven functions and seven signals used to describe precisely when port counters are incremented. The relationship between the functions and signals is shown in Figure 3.

The CollisionEvent, ActivityDuration, CarrierEvent, FramingError, OctetCount, FCSError, and SourceAddress output signals defined here are not retrievable MIB objects, but rather are concepts used in defining the MIB objects. The inputs are defined in Section 9 of the IEEE 802.3 standard [7].

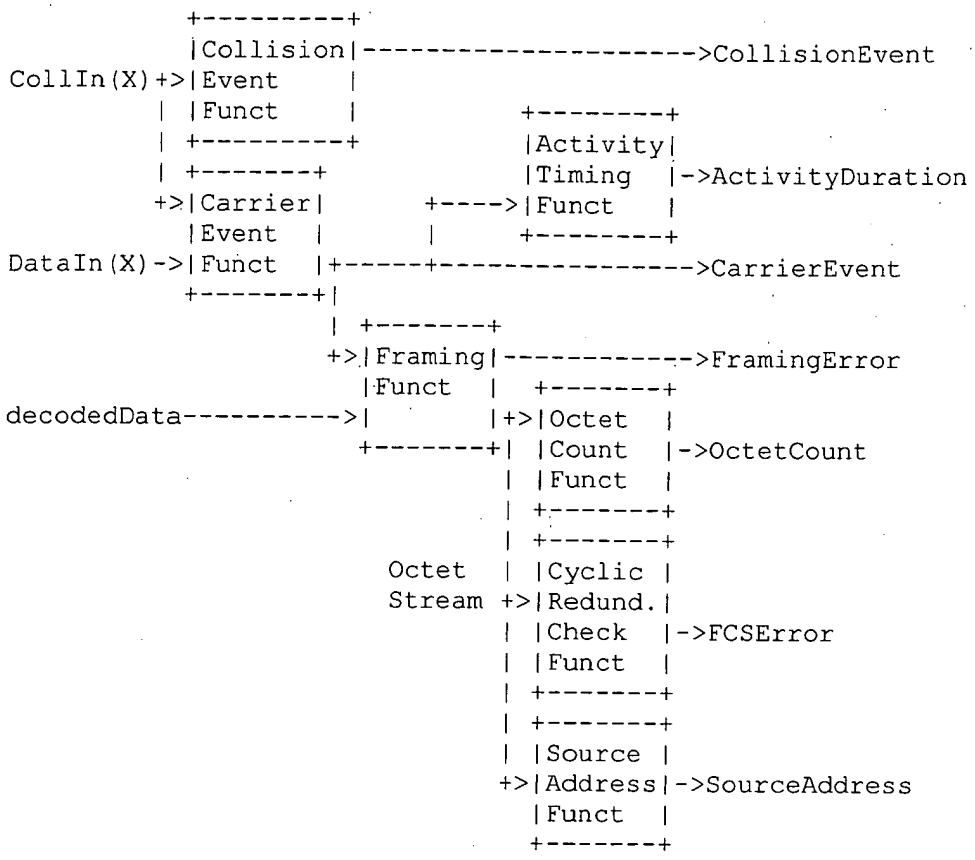

Figure 3. Port Functions Relationship

Collision Event Function: The collision event function asserts the CollisionEvent signal when the CollIn(X) variable has the value SQE. The CollisionEvent signal remains asserted until the assertion of any CarrierEvent signal due to the reception of the following event.

Carrier Event Function: The carrier event function asserts the CarrierEvent signal when the repeater exits the IDLE state, Fig 9-2 [7], and the port has been determined to be port N. It deasserts the CarrierEvent signal when, for a duration of at least Carrier Recovery Time (Ref: 9.5.6.5 [7]), both the DataIn(N) variable has the value II and the CollIn(N) variable has the value -SQE. The value N is the port assigned at the time of transition from the IDLE state.

Framing Function: The framing function recognizes the boundaries of an incoming frame by monitoring the CarrierEvent signal and the

decoded data stream. Data bits are accepted while the CarrierEvent signal is asserted. The framing function strips preamble and start of frame delimiter from the received data stream. The remaining bits are aligned along octet boundaries. If there is not an integral number of octets, then FramingError shall be asserted. The FramingError signal is cleared upon the assertion of the CarrierEvent signal due to the reception of the following event.

Activity Timing Function: The activity timing function measures the duration of the assertion of the CarrierEvent signal. This duration value must be adjusted by removing the value of Carrier Recovery Time (Ref: 9.5.6.5 [7]) to obtain the true duration of activity on the network. The output of the Activity Timing function is the ActivityDuration value, which represents the duration of the CarrierEvent signal as expressed in units of bit times.

Octet Counting Function: The octet counting function counts the number of complete octets received from the output of the framing function. The output of the octet counting function is the OctetCount value. The OctetCount value is reset to zero upon the assertion of the CarrierEvent signal due to the reception of the following event.

Cyclic Redundancy Check Function: The cyclic redundancy check function verifies that the sequence of octets output by the framing function contains a valid frame check sequence field. The frame check sequence field is the last four octets received from the output of the framing function. The algorithm for generating an FCS from the octet stream is specified in 3.2.8 [7]. If the FCS generated according to this algorithm is not the same as the last four octets received from the framing function then the FCSError signal is asserted. The FCSError signal is cleared upon the assertion of the CarrierEvent signal due to the reception of the following event.

Source Address Function: The source address function extracts octets from the stream output by the framing function. The seventh through twelfth octets shall be extracted from the octet stream and output as the SourceAddress variable. The SourceAddress variable is set to an invalid state upon the assertion of the CarrierEvent signal due to the reception of the following event.

2.3. Structure of MIB

Objects in this MIB are arranged into MIB groups. Each MIB group is organized as a set of related objects.

2.3.1. The Basic Group Definitions

This mandatory group contains the objects which are applicable to all repeaters. It contains status, parameter and control objects for the repeater as a whole, the port groups within the repeater, as well as for the individual ports themselves.

2.3.2. The Monitor Group Definitions

This optional group contains monitoring statistics for the repeater as a whole and for individual ports.

2.3.3. The Address Tracking Group Definitions

This optional group contains objects for tracking the MAC addresses of the DTEs attached to the ports of the repeater.

2.4. Relationship to Other MIBs

It is assumed that a repeater implementing this MIB will also implement (at least) the 'system' group defined in MIB-II [3].

2.4.1. Relationship to the 'system' group

In MIB-II, the 'system' group is defined as being mandatory for all systems such that each managed entity contains one instance of each object in the 'system' group. Thus, those objects apply to the entity even if the entity's sole functionality is management of a repeater.

2.4.2. Relationship to the 'interfaces' group

In MIB-II, the 'interfaces' group is defined as being mandatory for all systems and contains information on an entity's interfaces, where each interface is thought of as being attached to a the Internet suite of protocols.)

This Repeater MIB uses the notion of ports on a repeater. The concept of a MIB-II interface has NO specific relationship to a repeater's port. Therefore, the 'interfaces' group applies only to the one (or more) network interfaces on which the entity managing the repeater sends and receives management protocol operations, and does not apply to the repeater's ports.

This is consistent with the physical-layer nature of a repeater. A repeater is a bitwise store-and-forward device. It recognizes activity and bits, but does not process incoming data based on any packet-related information (such as checksum or addresses). A

repeater has no MAC address, no MAC implementation, and does not pass packets up to higher-level protocol entities for processing.

(When a network management entity is observing the repeater, it may appear as though the repeater is passing packets to a higher-level protocol entity. However, this is only a means of implementing management, and this passing of management information is not part of the repeater functionality.)

2.5. Textual Conventions

The datatype MacAddress is used as a textual convention in this document. This textual convention has NO effect on either the syntax nor the semantics of any managed object. Objects defined using this convention are always encoded by means of the rules that define their primitive type. Hence, no changes to the SMI or the SNMP are necessary to accommodate this textual convention which is adopted merely for the convenience of readers.

3. Definitions

```
SNMP-REPEATER-MIB DEFINITIONS ::= BEGIN

IMPORTS
    Counter, TimeTicks, Gauge
                                        FROM RFC1155-SMI
    DisplayString                       FROM RFC1213-MIB
    TRAP-TYPE                           FROM RFC-1215
    OBJECT-TYPE                         FROM RFC-1212;


snmpDot3RptrMgt OBJECT IDENTIFIER ::= { mib-2 22 }


-- All representations of MAC addresses in this MIB Module use,
-- as a textual convention (i.e., this convention does not affect
-- their encoding), the data type:

MacAddress ::= OCTET STRING (SIZE (6))     -- a 6 octet address in
                                           -- the "canonical" order
-- defined by IEEE 802.1a, i.e., as if it were transmitted least
-- significant bit first.


--                      References
--
-- The following references are used throughout this MIB:
--
```

```
-- [IEEE 802.3 Std]
--    refers to IEEE 802.3/ISO 8802-3 Information processing
--    systems - Local area networks - Part 3: Carrier sense
--    multiple access with collision detection (CSMA/CD)
--    access method and physical layer specifications
--    (2nd edition, September 21, 1990).
--
-- [IEEE 802.3 Rptr Mgt]
--    refers to IEEE P802.3K, 'Layer Management for 10 Mb/s
--    Baseband Repeaters, Section 19,' Draft Supplement to
--    ANSI/IEEE 802.3, (Draft 8, April 9, 1992)


--                      MIB Groups
--
-- The rptrBasicPackage group is mandatory.
-- The rptrMonitorPackage and rptrAddrTrackPackage
-- groups are optional.


rptrBasicPackage
    OBJECT IDENTIFIER ::= { snmpDot3RptrMgt 1 }

rptrMonitorPackage
    OBJECT IDENTIFIER ::= { snmpDot3RptrMgt 2 }

rptrAddrTrackPackage
    OBJECT IDENTIFIER ::= { snmpDot3RptrMgt 3 }


-- object identifiers for organizing the information
-- in the groups by repeater, port-group, and port

rptrRptrInfo
    OBJECT IDENTIFIER ::= { rptrBasicPackage 1 }
rptrGroupInfo
    OBJECT IDENTIFIER ::= { rptrBasicPackage 2 }
rptrPortInfo
    OBJECT IDENTIFIER ::= { rptrBasicPackage 3 }

rptrMonitorRptrInfo
    OBJECT IDENTIFIER ::= { rptrMonitorPackage 1 }
rptrMonitorGroupInfo
    OBJECT IDENTIFIER ::= { rptrMonitorPackage 2 }
rptrMonitorPortInfo
    OBJECT IDENTIFIER ::= { rptrMonitorPackage 3 }

rptrAddrTrackRptrInfo     -- this subtree is currently unused
```

```
    OBJECT IDENTIFIER ::= { rptrAddrTrackPackage 1 }
rptrAddrTrackGroupInfo    -- this subtree is currently unused
    OBJECT IDENTIFIER ::= { rptrAddrTrackPackage 2 }
rptrAddrTrackPortInfo
    OBJECT IDENTIFIER ::= { rptrAddrTrackPackage 3 }


--
--                    The BASIC GROUP
--
-- Implementation of the Basic Group is mandatory for all
-- managed repeaters.

--
-- Basic Repeater Information
--
-- Configuration, status, and control objects for the overall
-- repeater
--

rptrGroupCapacity OBJECT-TYPE
    SYNTAX    INTEGER (1..1024)
    ACCESS    read-only
    STATUS    mandatory
    DESCRIPTION
            "The rptrGroupCapacity is the number of groups
            that can be contained within the repeater.  Within
            each managed repeater, the groups are uniquely
            numbered in the range from 1 to rptrGroupCapacity.

            Some groups may not be present in the repeater, in
            which case the actual number of groups present
            will be less than rptrGroupCapacity.  The number
            of groups present will never be greater than
            rptrGroupCapacity.

            Note:  In practice, this will generally be the
            number of field-replaceable units (i.e., modules,
            cards, or boards) that can fit in the physical
            repeater enclosure, and the group numbers will
            correspond to numbers marked on the physical
            enclosure."
    REFERENCE
            "Reference IEEE 802.3 Rptr Mgt, 19.2.3.2,
            aRepeaterGroupCapacity."
    ::= { rptrRptrInfo 1 }

rptrOperStatus OBJECT-TYPE
```

```
        SYNTAX  INTEGER {
                    other(1),           -- undefined or unknown status
                    ok(2),              -- no known failures
                    rptrFailure(3),     -- repeater-related failure
                    groupFailure(4),    -- group-related failure
                    portFailure(5),     -- port-related failure
                    generalFailure(6)   -- failure, unspecified type
                }
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "The rptrOperStatus object indicates the
                operational state of the repeater.  The
                rptrHealthText object may be consulted for more
                specific information about the state of the
                repeater's health.

                In the case of multiple kinds of failures (e.g.,
                repeater failure and port failure), the value of
                this attribute shall reflect the highest priority
                failure in the following order, listed highest
                priority first:

                    rptrFailure(3)
                    groupFailure(4)
                    portFailure(5)
                    generalFailure(6)."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.3.2,
                aRepeaterHealthState."
        ::= { rptrRptrInfo 2 }

    rptrHealthText OBJECT-TYPE
        SYNTAX    DisplayString (SIZE (0..255))
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "The health text object is a text string that
                provides information relevant to the operational
                state of the repeater.  Agents may use this string
                to provide detailed information on current
                failures, including how they were detected, and/or
                instructions for problem resolution.  The contents
                are agent-specific."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.3.2,
                aRepeaterHealthText."
        ::= { rptrRptrInfo 3 }
```

```
    rptrReset OBJECT-TYPE
        SYNTAX      INTEGER {
                        noReset(1),
                        reset(2)
                    }
        ACCESS      read-write
        STATUS      mandatory
        DESCRIPTION
                "Setting this object to reset(2) causes a
                transition to the START state of Fig 9-2 in
                section 9 [IEEE 802.3 Std].

                Setting this object to noReset(1) has no effect.
                The agent will always return the value noReset(1)
                when this object is read.

                After receiving a request to set this variable to
                reset(2), the agent is allowed to delay the reset
                for a short period.  For example, the implementor
                may choose to delay the reset long enough to allow
                the SNMP response to be transmitted.  In any
                event, the SNMP response must be transmitted.

                This action does not reset the management counters
                defined in this document nor does it affect the
                portAdminStatus parameters.  Included in this
                action is the execution of a disruptive Self-Test
                with the following characteristics:  a) The nature
                of the tests is not specified.  b) The test resets
                the repeater but without affecting management
                information about the repeater.  c) The test does
                not inject packets onto any segment.  d) Packets
                received during the test may or may not be
                transferred.  e) The test does not interfere with
                management functions.

                After performing this self-test, the agent will
                update the repeater health information (including
                rptrOperStatus and rptrHealthText), and send a
                rptrHealth trap."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.3.3,
                acResetRepeater."
        ::= { rptrRptrInfo 4 }

    rptrNonDisruptTest OBJECT-TYPE
        SYNTAX      INTEGER {
                        noSelfTest(1),
```

```
                    selfTest(2)
                }
        ACCESS      read-write
        STATUS      mandatory
        DESCRIPTION
                "Setting this object to selfTest(2) causes the
                repeater to perform a agent-specific, non-
                disruptive self-test that has the following
                characteristics:  a) The nature of the tests is
                not specified.  b) The test does not change the
                state of the repeater or management information
                about the repeater.  c) The test does not inject
                packets onto any segment.  d) The test does not
                prevent the relay of any packets.  e) The test
                does not interfere with management functions.

                After performing this test, the agent will update
                the repeater health information (including
                rptrOperStatus and rptrHealthText) and send a
                rptrHealth trap.

                Note that this definition allows returning an
                'okay' result after doing a trivial test.

                Setting this object to noSelfTest(1) has no
                effect.  The agent will always return the value
                noSelfTest(1) when this object is read."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.3.3,
                acExecuteNonDisruptiveSelfTest."
        ::= { rptrRptrInfo 5 }

    rptrTotalPartitionedPorts OBJECT-TYPE
        SYNTAX      Gauge
        ACCESS      read-only
        STATUS      mandatory
        DESCRIPTION
                "This object returns the total number of ports in
                the repeater whose current state meets all three
                of the following criteria:  rptrPortOperStatus
                does not have the value notPresent(3),
                rptrPortAdminStatus is enabled(1), and
                rptrPortAutoPartitionState is autoPartitioned(2)."
        ::= { rptrRptrInfo 6 }
```

```
    --
    -- The Basic Port Group Table
    --

    rptrGroupTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF RptrGroupEntry
        ACCESS    not-accessible
        STATUS    mandatory
        DESCRIPTION
                "Table of descriptive and status information about
                the groups of ports."
        ::= { rptrGroupInfo 1 }

    rptrGroupEntry OBJECT-TYPE
        SYNTAX    RptrGroupEntry
        ACCESS    not-accessible
        STATUS    mandatory
        DESCRIPTION
                "An entry in the table, containing information
                about a single group of ports."
        INDEX     { rptrGroupIndex }
        ::= { rptrGroupTable 1 }

    RptrGroupEntry ::=
        SEQUENCE {
            rptrGroupIndex
                INTEGER,
            rptrGroupDescr
                DisplayString,
            rptrGroupObjectID
                OBJECT IDENTIFIER,
            rptrGroupOperStatus
                INTEGER,
            rptrGroupLastOperStatusChange
                TimeTicks,
            rptrGroupPortCapacity
                INTEGER
        }

    rptrGroupIndex OBJECT-TYPE
        SYNTAX    INTEGER (1..1024)
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This object identifies the group within the
                repeater for which this entry contains
                information.  This value is never greater than
                rptrGroupCapacity."
```

```
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.5.2,
                aGroupID."
        ::= { rptrGroupEntry 1 }

    rptrGroupDescr OBJECT-TYPE
        SYNTAX    DisplayString (SIZE (0..255))
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "A textual description of the group.  This value
                should include the full name and version
                identification of the group's hardware type and
                indicate how the group is differentiated from
                other types of groups in the repeater.  Plug-in
                Module, Rev A' or 'Barney Rubble 10BASE-T 4-port
                SIMM socket Version 2.1' are examples of valid
                group descriptions.

                It is mandatory that this only contain printable
                ASCII characters."
        ::= { rptrGroupEntry 2 }

    rptrGroupObjectID OBJECT-TYPE
        SYNTAX    OBJECT IDENTIFIER
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "The vendor's authoritative identification of the
                group.  This value may be allocated within the SMI
                enterprises subtree (1.3.6.1.4.1) and provides a
                straight-forward and unambiguous means for
                determining what kind of group is being managed.

                For example, this object could take the value
                1.3.6.1.4.1.4242.1.2.14 if vendor 'Flintstones,
                Inc.' was assigned the subtree 1.3.6.1.4.1.4242,
                and had assigned the identifier
                1.3.6.1.4.1.4242.1.2.14 to its 'Wilma Flintstone
                6-Port FOIRL Plug-in Module.'"
        ::= { rptrGroupEntry 3 }

    rptrGroupOperStatus OBJECT-TYPE
        SYNTAX    INTEGER {
                      other(1),
                      operational(2),
                      malfunctioning(3),
                      notPresent(4),
```

```
                    underTest(5),
                    resetInProgress(6)
                }
        ACCESS      read-only
        STATUS      mandatory
        DESCRIPTION
                "An object that indicates the operational status
                of the group.

                A status of notPresent(4) indicates that the group
                is temporarily or permanently physically and/or
                logically not a part of the repeater.  It is an
                implementation-specific matter as to whether the
                agent effectively removes notPresent entries from
                the table.

                A status of operational(2) indicates that the
                group is functioning, and a status of
                malfunctioning(3) indicates that the group is
                malfunctioning in some way."
        ::= { rptrGroupEntry 4 }

    rptrGroupLastOperStatusChange OBJECT-TYPE
        SYNTAX      TimeTicks
        ACCESS      read-only
        STATUS      mandatory
        DESCRIPTION
                "An object that contains the value of sysUpTime at
                the time that the value of the rptrGroupOperStatus
                object for this group last changed.

                A value of zero indicates that the group's
                operational status has not changed since the agent
                last restarted."
        ::= { rptrGroupEntry 5 }

    rptrGroupPortCapacity OBJECT-TYPE
        SYNTAX      INTEGER (1..1024)
        ACCESS      read-only
        STATUS      mandatory
        DESCRIPTION
                "The rptrGroupPortCapacity is the number of ports
                that can be contained within the group.  Valid
                range is 1-1024.  Within each group, the ports are
                uniquely numbered in the range from 1 to
                rptrGroupPortCapacity.

                Note:  In practice, this will generally be the
```

```
                number of ports on a module, card, or board, and
                the port numbers will correspond to numbers marked
                on the physical embodiment."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.5.2,
                aGroupPortCapacity."
        ::= { rptrGroupEntry 6 }


    --
    -- The Basic Port Table
    --

    rptrPortTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF RptrPortEntry
        ACCESS    not-accessible
        STATUS    mandatory
        DESCRIPTION
                "Table of descriptive and status information about
                the ports."
        ::= { rptrPortInfo 1 }

    rptrPortEntry OBJECT-TYPE
        SYNTAX    RptrPortEntry
        ACCESS    not-accessible
        STATUS    mandatory
        DESCRIPTION
                "An entry in the table, containing information
                about a single port."
        INDEX     { rptrPortGroupIndex, rptrPortIndex }
        ::= { rptrPortTable 1 }

    RptrPortEntry ::=
        SEQUENCE {
            rptrPortGroupIndex
                INTEGER,
            rptrPortIndex
                INTEGER,
            rptrPortAdminStatus
                INTEGER,
            rptrPortAutoPartitionState
                INTEGER,
            rptrPortOperStatus
                INTEGER
        }

    rptrPortGroupIndex OBJECT-TYPE
        SYNTAX    INTEGER (1..1024)
```

```
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This object identifies the group containing the
                port for which this entry contains information."
        ::= { rptrPortEntry 1 }

    rptrPortIndex OBJECT-TYPE
        SYNTAX    INTEGER (1..1024)
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This object identifies the port within the group
                for which this entry contains information.  This
                value can never be greater than
                rptrGroupPortCapacity for the associated group."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aPortID."
        ::= { rptrPortEntry 2 }

    rptrPortAdminStatus OBJECT-TYPE
        SYNTAX    INTEGER {
                      enabled(1),
                      disabled(2)
                  }
        ACCESS    read-write
        STATUS    mandatory
        DESCRIPTION
                "Setting this object to disabled(2) disables the
                port.  A disabled port neither transmits nor
                receives.  Once disabled, a port must be
                explicitly enabled to restore operation.  A port
                which is disabled when power is lost or when a
                reset is exerted shall remain disabled when normal
                operation resumes.

                The admin status takes precedence over auto-
                partition and functionally operates between the
                auto-partition mechanism and the AUI/PMA.

                Setting this object to enabled(1) enables the port
                and exerts a BEGIN on the port's auto-partition
                state machine.

                (In effect, when a port is disabled, the value of
                rptrPortAutoPartitionState for that port is frozen
                until the port is next enabled.  When the port
```

```
                becomes enabled, the rptrPortAutoPartitionState
                becomes notAutoPartitioned(1), regardless of its
                pre-disabling state.)"
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aPortAdminState and 19.2.6.3, acPortAdminControl."
        ::= { rptrPortEntry 3 }

    rptrPortAutoPartitionState OBJECT-TYPE
        SYNTAX      INTEGER {
                        notAutoPartitioned(1),
                        autoPartitioned(2)
                    }
        ACCESS      read-only
        STATUS      mandatory
        DESCRIPTION
                "The autoPartitionState flag indicates whether the
                port is currently partitioned by the repeater's
                auto-partition protection.

                The conditions that cause port partitioning are
                specified in partition state machine in Section 9
                [IEEE 802.3 Std].  They are not differentiated
                here."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aAutoPartitionState."
        ::= { rptrPortEntry 4 }

    rptrPortOperStatus  OBJECT-TYPE
        SYNTAX      INTEGER {
                        operational(1),
                        notOperational(2),
                        notPresent(3)
                    }
        ACCESS      read-only
        STATUS      mandatory
        DESCRIPTION
                "This object indicates the port's operational
                status.  The notPresent(3) status indicates the
                port is physically removed (note this may or may
                not be possible depending on the type of port.)
                The operational(1) status indicates that the port
                is enabled (see rptrPortAdminStatus) and working,
                even though it might be auto-partitioned (see
                rptrPortAutoPartitionState).

                If this object has the value operational(1) and
```

```
                rptrPortAdminStatus is set to disabled(2), it is
                expected that this object's value will soon change
                to notOperational(2)."
        ::= { rptrPortEntry 5 }


    --
    --                      The MONITOR GROUP
    --
    -- Implementation of this group is optional, but within the
    -- group all elements are mandatory.  If a managed repeater
    -- implements any part of this group, the entire group shall
    -- be implemented.

    --
    -- Repeater Monitor Information
    --
    -- Performance monitoring statistics for the repeater
    --

    rptrMonitorTransmitCollisions OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This counter is incremented every time the
                repeater state machine enters the TRANSMIT
                COLLISION state from any state other than ONE PORT
                LEFT (Ref: Fig 9-2, IEEE 802.3 Std).

                The approximate minimum time for rollover of this
                counter is 16 hours."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.3.2,
                aTransmitCollisions."
        ::= { rptrMonitorRptrInfo 1 }


    --
    -- The Group Monitor Table
    --

    rptrMonitorGroupTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF RptrMonitorGroupEntry
        ACCESS    not-accessible
        STATUS    mandatory
        DESCRIPTION
                "Table of performance and error statistics for the
```

```
            groups."
    ::= { rptrMonitorGroupInfo 1 }

rptrMonitorGroupEntry OBJECT-TYPE
    SYNTAX    RptrMonitorGroupEntry
    ACCESS    not-accessible
    STATUS    mandatory
    DESCRIPTION
            "An entry in the table, containing total
            performance and error statistics for a single
            group.  Regular retrieval of the information in
            this table provides a means of tracking the
            performance and health of the networked devices
            attached to this group's ports.

            The counters in this table are redundant in the
            sense that they are the summations of information
            already available through other objects.  However,
            these sums provide a considerable optimization of
            network management traffic over the otherwise
            necessary retrieval of the individual counters
            included in each sum."
    INDEX    { rptrMonitorGroupIndex }
    ::= { rptrMonitorGroupTable 1 }

RptrMonitorGroupEntry ::=
    SEQUENCE {
        rptrMonitorGroupIndex
            INTEGER,
        rptrMonitorGroupTotalFrames
            Counter,
        rptrMonitorGroupTotalOctets
            Counter,
        rptrMonitorGroupTotalErrors
            Counter
    }

rptrMonitorGroupIndex OBJECT-TYPE
    SYNTAX    INTEGER (1..1024)
    ACCESS    read-only
    STATUS    mandatory
    DESCRIPTION
            "This object identifies the group within the
            repeater for which this entry contains
            information."
    ::= { rptrMonitorGroupEntry 1 }

rptrMonitorGroupTotalFrames OBJECT-TYPE
```

```
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "The total number of frames of valid frame length
                that have been received on the ports in this group
                and for which the FCSError and CollisionEvent
                signals were not asserted.  This counter is the
                summation of the values of the
                rptrMonitorPortReadableFrames counters for all of
                the ports in the group.

                This statistic provides one of the parameters
                necessary for obtaining the packet error rate.
                The approximate minimum time for rollover of this
                counter is 80 hours."
        ::= { rptrMonitorGroupEntry 2 }

    rptrMonitorGroupTotalOctets OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "The total number of octets contained in the valid
                frames that have been received on the ports in
                this group.  This counter is the summation of the
                values of the rptrMonitorPortReadableOctets
                counters for all of the ports in the group.

                This statistic provides an indicator of the total
                data transferred.  The approximate minimum time
                for rollover of this counter is 58 minutes."
        ::= { rptrMonitorGroupEntry 3 }

    rptrMonitorGroupTotalErrors OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "The total number of errors which have occurred on
                all of the ports in this group.  This counter is
                the summation of the values of the
                rptrMonitorPortTotalErrors counters for all of the
                ports in the group."
        ::= { rptrMonitorGroupEntry 4 }

    --
    -- The Port Monitor Table
```

```
    --

    rptrMonitorPortTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF RptrMonitorPortEntry
        ACCESS    not-accessible
        STATUS    mandatory
        DESCRIPTION
                "Table of performance and error statistics for the
                ports."
        ::= { rptrMonitorPortInfo 1 }

    rptrMonitorPortEntry OBJECT-TYPE
        SYNTAX    RptrMonitorPortEntry
        ACCESS    not-accessible
        STATUS    mandatory
        DESCRIPTION
                "An entry in the table, containing performance and
                error statistics for a single port."
        INDEX     { rptrMonitorPortGroupIndex, rptrMonitorPortIndex }
        ::= { rptrMonitorPortTable 1 }

    RptrMonitorPortEntry ::=
        SEQUENCE {
            rptrMonitorPortGroupIndex
                INTEGER,
            rptrMonitorPortIndex
                INTEGER,
            rptrMonitorPortReadableFrames
                Counter,
            rptrMonitorPortReadableOctets
                Counter,
            rptrMonitorPortFCSErrors
                Counter,
            rptrMonitorPortAlignmentErrors
                Counter,
            rptrMonitorPortFrameTooLongs
                Counter,
            rptrMonitorPortShortEvents
                Counter,
            rptrMonitorPortRunts
                Counter,
            rptrMonitorPortCollisions
                Counter,
            rptrMonitorPortLateEvents
                Counter,
            rptrMonitorPortVeryLongEvents
                Counter,
            rptrMonitorPortDataRateMismatches
```

```
            Counter,
        rptrMonitorPortAutoPartitions
            Counter,
        rptrMonitorPortTotalErrors
            Counter
    }

rptrMonitorPortGroupIndex OBJECT-TYPE
    SYNTAX    INTEGER (1..1024)
    ACCESS    read-only
    STATUS    mandatory
    DESCRIPTION
            "This object identifies the group containing the
            port for which this entry contains information."
    ::= { rptrMonitorPortEntry 1 }

rptrMonitorPortIndex OBJECT-TYPE
    SYNTAX    INTEGER (1..1024)
    ACCESS    read-only
    STATUS    mandatory
    DESCRIPTION
            "This object identifies the port within the group
            for which this entry contains information."
    REFERENCE
            "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
            aPortID."
    ::= { rptrMonitorPortEntry 2 }

rptrMonitorPortReadableFrames OBJECT-TYPE
    SYNTAX    Counter
    ACCESS    read-only
    STATUS    mandatory
    DESCRIPTION
            "This object is the number of frames of valid
            frame length that have been received on this port.
            This counter is incremented by one for each frame
            received on this port whose OctetCount is greater
            than or equal to minFrameSize and less than or
            equal to maxFrameSize (Ref: IEEE 802.3 Std,
            4.4.2.1) and for which the FCSError and
            CollisionEvent signals are not asserted.

            This statistic provides one of the parameters
            necessary for obtaining the packet error rate.
            The approximate minimum time for rollover of this
            counter is 80 hours."
    REFERENCE
            "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
```

```
                aReadableFrames."
        ::= { rptrMonitorPortEntry 3 }

    rptrMonitorPortReadableOctets OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This object is the number of octets contained in
                valid frames that have been received on this port.
                This counter is incremented by OctetCount for each
                frame received on this port which has been
                determined to be a readable frame (i.e., including
                FCS octets but excluding framing bits and dribble
                bits).

                This statistic provides an indicator of the total
                data transferred.  The approximate minimum time
                for rollover of this counter is 58 minutes."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aReadableOctets."
        ::= { rptrMonitorPortEntry 4 }

    rptrMonitorPortFCSErrors OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This counter is incremented by one for each frame
                received on this port with the FCSError signal
                asserted and the FramingError and CollisionEvent
                signals deasserted and whose OctetCount is greater
                than or equal to minFrameSize and less than or
                equal to maxFrameSize (Ref: 4.4.2.1, IEEE 802.3
                Std).

                The approximate minimum time for rollover of this
                counter is 80 hours."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aFrameCheckSequenceErrors."
        ::= { rptrMonitorPortEntry 5 }

    rptrMonitorPortAlignmentErrors OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
```

```
        DESCRIPTION
                "This counter is incremented by one for each frame
                received on this port with the FCSError and
                FramingError signals asserted and CollisionEvent
                signal deasserted and whose OctetCount is greater
                than or equal to minFrameSize and less than or
                equal to maxFrameSize (Ref: IEEE 802.3 Std,
                4.4.2.1).  If rptrMonitorPortAlignmentErrors is
                incremented then the rptrMonitorPortFCSErrors
                Counter shall not be incremented for the same
                frame.

                The approximate minimum time for rollover of this
                counter is 80 hours."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aAlignmentErrors."
        ::= { rptrMonitorPortEntry 6 }

    rptrMonitorPortFrameTooLongs OBJECT-TYPE
        SYNTAX     Counter
        ACCESS     read-only
        STATUS     mandatory
        DESCRIPTION
                "This counter is incremented by one for each frame
                received on this port whose OctetCount is greater
                than maxFrameSize (Ref: 4.4.2.1, IEEE 802.3 Std).
                If rptrMonitorPortFrameTooLongs is incremented
                then neither the rptrMonitorPortAlignmentErrors
                nor the rptrMonitorPortFCSErrors counter shall be
                incremented for the frame.

                The approximate minimum time for rollover of this
                counter is 61 days."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aFramesTooLong."
        ::= { rptrMonitorPortEntry 7 }

    rptrMonitorPortShortEvents OBJECT-TYPE
        SYNTAX     Counter
        ACCESS     read-only
        STATUS     mandatory
        DESCRIPTION
                "This counter is incremented by one for each
                CarrierEvent on this port with ActivityDuration
                less than ShortEventMaxTime.  ShortEventMaxTime is
                greater than 74 bit times and less than 82 bit
```

```
                times.  ShortEventMaxTime has tolerances included
                to provide for circuit losses between a
                conformance test point at the AUI and the
                measurement point within the state machine.

                Note:  shortEvents may indicate externally
                generated noise hits which will cause the repeater
                to transmit Runts to its other ports, or propagate
                a collision (which may be late) back to the
                transmitting DTE and damaged frames to the rest of
                the network.

                Implementors may wish to consider selecting the
                ShortEventMaxTime towards the lower end of the
                allowed tolerance range to accommodate bit losses
                suffered through physical channel devices not
                budgeted for within this standard.

                The approximate minimum time for rollover of this
                counter is 16 hours."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aShortEvents."
        ::= { rptrMonitorPortEntry 8 }

    rptrMonitorPortRunts OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This counter is incremented by one for each
                CarrierEvent on this port that meets one of the
                following two conditions.  Only one test need be
                made.  a) The ActivityDuration is greater than
                ShortEventMaxTime and less than ValidPacketMinTime
                and the CollisionEvent signal is deasserted.  b)
                The OctetCount is less than 64, the
                ActivityDuration is greater than ShortEventMaxTime
                and the CollisionEvent signal is deasserted.
                ValidPacketMinTime is greater than or equal to 552
                bit times and less than 565 bit times.

                An event whose length is greater than 74 bit times
                but less than 82 bit times shall increment either
                the shortEvents counter or the runts counter but
                not both.  A CarrierEvent greater than or equal to
                552 bit times but less than 565 bit times may or
                may not be counted as a runt.
```

```
                ValidPacketMinTime has tolerances included to
                provide for circuit losses between a conformance
                test point at the AUI and the measurement point
                within the state machine.

                Runts usually indicate collision fragments, a
                normal network event.  In certain situations
                associated with large diameter networks a
                percentage of collision fragments may exceed
                ValidPacketMinTime.

                The approximate minimum time for rollover of this
                counter is 16 hours."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2, aRunts."
        ::= { rptrMonitorPortEntry 9 }

    rptrMonitorPortCollisions OBJECT-TYPE
        SYNTAX     Counter
        ACCESS     read-only
        STATUS     mandatory
        DESCRIPTION
                "This counter is incremented by one for any
                CarrierEvent signal on any port for which the
                CollisionEvent signal on this port is also
                asserted.

                The approximate minimum time for rollover of this
                counter is 16 hours."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aCollisions."
        ::= { rptrMonitorPortEntry 10 }

    rptrMonitorPortLateEvents OBJECT-TYPE
        SYNTAX     Counter
        ACCESS     read-only
        STATUS     mandatory
        DESCRIPTION
                "This counter is incremented by one for each
                CarrierEvent on this port in which the CollIn(X)
                variable transitions to the value SQE (Ref:
                9.6.6.2, IEEE 802.3 Std) while the
                ActivityDuration is greater than the
                LateEventThreshold.  Such a CarrierEvent is
                counted twice, as both a collision and as a
                lateEvent.
```

```
                The LateEventThreshold is greater than 480 bit
                times and less than 565 bit times.
                LateEventThreshold has tolerances included to
                permit an implementation to build a single
                threshold to serve as both the LateEventThreshold
                and ValidPacketMinTime threshold.

                The approximate minimum time for rollover of this
                counter is 81 hours."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aLateEvents."
        ::= { rptrMonitorPortEntry 11 }

    rptrMonitorPortVeryLongEvents OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This counter is incremented by one for each
                CarrierEvent on this port whose ActivityDuration
                is greater than the MAU Jabber Lockup Protection
                timer TW3 (Ref: 9.6.1 & 9.6.5, IEEE 802.3 Std).
                Other counters may be incremented as appropriate."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aVeryLongEvents."
        ::= { rptrMonitorPortEntry 12 }

    rptrMonitorPortDataRateMismatches OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This counter is incremented by one for each frame
                received on this port that meets all of the
                following conditions:  a) The CollisionEvent
                signal is not asserted.  b) The ActivityDuration
                is greater than ValidPacketMinTime.  c) The
                frequency (data rate) is detectably mismatched
                from the local transmit frequency.  The exact
                degree of mismatch is vendor specific and is to be
                defined by the vendor for conformance testing.

                When this event occurs, other counters whose
                increment conditions were satisfied may or may not
                also be incremented, at the implementor's
                discretion.  Whether or not the repeater was able
```

```
            to maintain data integrity is beyond the scope of
            this standard."
        REFERENCE
            "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
            aDataRateMismatches."
        ::= { rptrMonitorPortEntry 13 }

    rptrMonitorPortAutoPartitions OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
            "This counter is incremented by one for each time
            the repeater has automatically partitioned this
            port.  The conditions that cause port partitioning
            are specified in the partition state machine in
            Section 9 [IEEE 802.3 Std].  They are not
            differentiated here."
        REFERENCE
            "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
            aAutoPartitions."
        ::= { rptrMonitorPortEntry 14 }

    rptrMonitorPortTotalErrors OBJECT-TYPE
        SYNTAX    Counter
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
            "The total number of errors which have occurred on
            this port.  This counter is the summation of the
            values of other error counters (for the same
            port), namely:

                rptrMonitorPortFCSErrors,
                rptrMonitorPortAlignmentErrors,
                rptrMonitorPortFrameTooLongs,
                rptrMonitorPortShortEvents,
                rptrMonitorPortLateEvents,
                rptrMonitorPortVeryLongEvents, and
                rptrMonitorPortDataRateMismatches.

            This counter is redundant in the sense that it is
            the summation of information already available
            through other objects.  However, it is included
            specifically because the regular retrieval of this
            object as a means of tracking the health of a port
            provides a considerable optimization of network
            management traffic over the otherwise necessary
```

```
            retrieval of the summed counters."
    ::= { rptrMonitorPortEntry 15 }


--
--                    The ADDRESS TRACKING GROUP
--
-- Implementation of this group is optional; it is appropriate
-- for all systems which have the necessary instrumentation.  If a
-- managed repeater implements any part of this group, the entire
-- group shall be implemented.

--
-- The Port Address Tracking Table
--

rptrAddrTrackTable OBJECT-TYPE
    SYNTAX    SEQUENCE OF RptrAddrTrackEntry
    ACCESS    not-accessible
    STATUS    mandatory
    DESCRIPTION
            "Table of address mapping information about the
            ports."
    ::= { rptrAddrTrackPortInfo 1 }

rptrAddrTrackEntry OBJECT-TYPE
    SYNTAX    RptrAddrTrackEntry
    ACCESS    not-accessible
    STATUS    mandatory
    DESCRIPTION
            "An entry in the table, containing address mapping
            information about a single port."
    INDEX     { rptrAddrTrackGroupIndex, rptrAddrTrackPortIndex }
    ::= { rptrAddrTrackTable 1 }

RptrAddrTrackEntry ::=
    SEQUENCE {
        rptrAddrTrackGroupIndex
            INTEGER,
        rptrAddrTrackPortIndex
            INTEGER,
        rptrAddrTrackLastSourceAddress      -- DEPRECATED OBJECT
            MacAddress,
        rptrAddrTrackSourceAddrChanges
            Counter,
        rptrAddrTrackNewLastSrcAddress
            OCTET STRING
    }
```

```
    rptrAddrTrackGroupIndex OBJECT-TYPE
        SYNTAX     INTEGER (1..1024)
        ACCESS     read-only
        STATUS     mandatory
        DESCRIPTION
                "This object identifies the group containing the
                port for which this entry contains information."
        ::= { rptrAddrTrackEntry 1 }

    rptrAddrTrackPortIndex OBJECT-TYPE
        SYNTAX     INTEGER (1..1024)
        ACCESS     read-only
        STATUS     mandatory
        DESCRIPTION
                "This object identifies the port within the group
                for which this entry contains information."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aPortID."
        ::= { rptrAddrTrackEntry 2 }

    rptrAddrTrackLastSourceAddress OBJECT-TYPE
        SYNTAX     MacAddress
        ACCESS     read-only
        STATUS     deprecated
        DESCRIPTION
                "This object is the SourceAddress of the last
                readable frame (i.e., counted by
                rptrMonitorPortReadableFrames) received by this
                port.

                This object has been deprecated because its value
                is undefined when no frames have been observed on
                this port.  The replacement object is
                rptrAddrTrackNewLastSrcAddress."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aLastSourceAddress."
        ::= { rptrAddrTrackEntry 3 }

    rptrAddrTrackSourceAddrChanges OBJECT-TYPE
        SYNTAX     Counter
        ACCESS     read-only
        STATUS     mandatory
        DESCRIPTION
                "This counter is incremented by one for each time
                that the rptrAddrTrackLastSourceAddress attribute
                for this port has changed.
```

```
                This may indicate whether a link is connected to a
                single DTE or another multi-user segment.

                The approximate minimum time for rollover of this
                counter is 81 hours."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aSourceAddressChanges."
        ::= { rptrAddrTrackEntry 4 }

    rptrAddrTrackNewLastSrcAddress OBJECT-TYPE
        SYNTAX    OCTET STRING (SIZE(0 | 6))
        ACCESS    read-only
        STATUS    mandatory
        DESCRIPTION
                "This object is the SourceAddress of the last
                readable frame (i.e., counted by
                rptrMonitorPortReadableFrames) received by this
                port.  If no frames have been received by this
                port since the agent began monitoring the port
                activity, the agent shall return a string of
                length zero."
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.6.2,
                aLastSourceAddress."
        ::= { rptrAddrTrackEntry 5 }


    -- Traps for use by Repeaters

    -- Traps are defined using the conventions in RFC 1215 [6].

    rptrHealth TRAP-TYPE
        ENTERPRISE  snmpDot3RptrMgt
        VARIABLES   { rptrOperStatus }
        DESCRIPTION
                "The rptrHealth trap conveys information related
                to the operational status of the repeater.  This
                trap is sent either when the value of
                rptrOperStatus changes, or upon completion of a
                non-disruptive test.

                The rptrHealth trap must contain the
                rptrOperStatus object.  The agent may optionally
                include the rptrHealthText object in the varBind
                list.  See the rptrOperStatus and rptrHealthText
                objects for descriptions of the information that
                is sent.
```

```
                The agent must throttle the generation of
                consecutive rptrHealth traps so that there is at
                least a five-second gap between traps of this
                type.  When traps are throttled, they are dropped,
                not queued for sending at a future time.  (Note
                that 'generating' a trap means sending to all
                configured recipients.)"
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.3.4,
                hubHealth notification."
        ::= 1

    rptrGroupChange TRAP-TYPE
        ENTERPRISE  snmpDot3RptrMgt
        VARIABLES   { rptrGroupIndex }
        DESCRIPTION
                "This trap is sent when a change occurs in the
                group structure of a repeater.  This occurs only
                when a group is logically or physically removed
                from or added to a repeater.  The varBind list
                contains the identifier of the group that was
                removed or added.

                The agent must throttle the generation of
                consecutive rptrGroupChange traps for the same
                group so that there is at least a five-second gap
                between traps of this type.  When traps are
                throttled, they are dropped, not queued for
                sending at a future time.  (Note that 'generating'
                a trap means sending to all configured
                recipients.)"
        REFERENCE
                "Reference IEEE 802.3 Rptr Mgt, 19.2.3.4,
                groupMapChange notification."
        ::= 2

    rptrResetEvent TRAP-TYPE
        ENTERPRISE  snmpDot3RptrMgt
        VARIABLES   { rptrOperStatus }
        DESCRIPTION
                "The rptrResetEvent trap conveys information
                related to the operational status of the repeater.
                This trap is sent on completion of a repeater
                reset action.  A repeater reset action is defined
                as an a transition to the START state of Fig 9-2
                in section 9 [IEEE 802.3 Std], when triggered by a
                management command (e.g., an SNMP Set on the
                rptrReset object).
```

```
            The agent must throttle the generation of
            consecutive rptrResetEvent traps so that there is
            at least a five-second gap between traps of this
            type.  When traps are throttled, they are dropped,
            not queued for sending at a future time.  (Note
            that 'generating' a trap means sending to all
            configured recipients.)

            The rptrResetEvent trap is not sent when the agent
            restarts and sends an SNMP coldStart or warmStart
            trap.  However, it is recommended that a repeater
            agent send the rptrOperStatus object as an
            optional object with its coldStart and warmStart
            trap PDUs.

            The rptrOperStatus object must be included in the
            varbind list sent with this trap.  The agent may
            optionally include the rptrHealthText object as
            well."
        REFERENCE
            "Reference IEEE 802.3 Rptr Mgt, 19.2.3.4, hubReset
            notification."
        ::= 3

    END
```

4. Changes from RFC 1368

(1) Added section 2.1.4, "Internal Ports and MAUs," that defines internal ports and clarifies how they may or may not be managed.

(2) Noted that the failure list for rptrOperStatus is ordered highest priority first.

(3) Clarified rptrReset description to indicate that the agent may briefly delay the reset action.

(4) For rptrReset, clarified the actions that the agent should take after performing the reset and self-test.

(5) For rptrNonDisruptTest, similar change to (3).

(6) Clarified that the rptrNonDisruptTest description allows returning "ok" after doing only a trivial test.

(7) Deprecated rptrAddrTrackLastSourceAddress and defined a

replacement object that has a zero-length value until the first frame is seen on the port.

(8) Clarified that rptrHealth trap is sent after rptrNonDisruptTest even if repeater health information doesn't change as a result of the test.

(9) Clarified text on throttling traps.

5. Acknowledgments

This document is the work of the IETF Hub MIB Working Group. It is based on drafts of the IEEE 802.3 Repeater Management Task Force.

6. References

[1] Rose M., and K. McCloghrie, "Structure and Identification of Management Information for TCP/IP-based internets", STD 16, RFC 1155, Performance Systems International, Hughes LAN Systems, May 1990.

[2] Case, J., Fedor, M., Schoffstall, M., and J. Davin, "Simple Network Management Protocol", STD 15, RFC 1157, SNMP Research, Performance Systems International, Performance Systems International, MIT Laboratory for Computer Science, May 1990.

[3] McCloghrie K., and M. Rose, Editors, "Management Information Base for Network Management of TCP/IP-based internets", STD 17, RFC 1213, Performance Systems International, March 1991.

[4] Information processing systems - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1), International Organization for Standardization, International Standard 8824, December 1987.

[5] Rose, M., and K. McCloghrie, Editors, "Concise MIB Definitions", STD 16, RFC 1212, Performance Systems International, Hughes LAN Systems, March 1991.

[6] Rose, M., Editor, "A Convention for Defining Traps for use with the SNMP", RFC 1215, Performance Systems International, March 1991.

[7] IEEE 802.3/ISO 8802-3 - Information processing systems - Local area networks - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications, 2nd edition, 21 September 1990.

[8] IEEE P802.3K - Layer Management for 10 Mb/s Baseband Repeaters, Section 19, Draft Supplement to ANSI/IEEE 802.3, Draft 8, 9 April 1992.

7. Security Considerations

Security issues are not discussed in this memo.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Art Unit:
	)	
Lakshmi Arunachalam	)	Examiner
	)	
Serial No. 11/980,185	)	
	)	
Filing Date: Oct. 30, 2007	)	
	)	
Title: METHOD AND APPARATUS FOR ENABLING REAL TIME TRANSACTIONS ON A NETWORK	)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Honorable Commissioner:

In accordance with 37 C.F.R. §1.97, please accept this Information Disclosure Statement and copies of any non-US patent material. This disclosure contains Appendices A-C supplied in the inter partes reexamination request by Microsoft Corporation of parent patent 7,340,506. The inter partes reexamination control number is 95/001,129. The request for this reexamination was supplied in the present case in a previous information disclosure statement.

This information was not available previously.

COMMENTS

It is believed that this disclosure complies with 37 C.F.R. §1.56 and 1.98 and M.P.E.P. §2000. This disclosure statement should not be construed as a representation that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(a) exists. A copy of each non-US patent reference is being supplied. Some references may contain marks; no significance should be attached to these.

Respectfully submitted

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CERTIFICATE OF MAILING

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On: JAN. 15, 2009

By: Clifford Kraft

Name: Clifford H. Kraft

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	11/980,185
Filing Date	10/30/2007
First Named Inventor	Lakshmi Arunachalam
Art Unit	
Examiner Name	
Attorney Docket Number	

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
		Appendices A-C Related				
		interpartes reexam				
		95/001,129	12/19/200			
		Part of 08/168,519 file	12/16/1993			
		Ex. 5, 95/001,129				

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

Exhibit 5 to the Request for Inter Partes Re-examination of

In re Patent No: 7,340,506
Issued: March 4, 2008
Filed: February 23, 2001
Applicant: Lakshmi Arunachalam
Title: Value-Added Network Switching and Object Routing

1610

488-101A

08/168519

PATENT
ATTORNEY DOCKET NO: 06105/002001

DIGITAL ACTIVE ADVERTISING

BACKGROUND OF THE INVENTION

The recent rapid growth of information applications on international public packet-switched computer networks such as the Internet suggests that public computer networks have the potential to establish a new kind of open marketplace for goods and services. Such a marketplace could be created with a network sales system that comprises a plurality of buyer and merchant computers, means for the users of the buyer computers to display digital advertisements from the merchant computers, and means for the users to purchase products described by the advertisements.

A network based sales system will need to allow users to preview products at little or no cost, and will need to make a large number of product advertisements available in a convenient manner. In addition, the shopping system will need to include easy-to-use facilities for a user to purchase desired products using a merchant independent payment method. In addition the network sales will need to allow new buyers and merchants to enter the market.

A central requirement for a marketplace is a payment mechanism, but at present no merchant independent payment

mechanism is available for computer networks that permits users to utilize conventional financial instruments such as credit cards, debit cards, and demand deposit account balances. We expect that both retail payment and wholesale payment mechanisms will be required for networks, with consumers using the retail mechanism for modest size purchases, and institutions using the wholesale mechanism for performing settlement between trading partners. For wide acceptance the retail mechanism will need to be a logical evolution of existing credit-card, debit-card, and Automated Clearing House facilities, while for acceptance the wholesale mechanism will need to be an evolved version of corporate electronic funds transfer.

These problems ~~of~~ have been approached in the past by network based sales systems wherein, for example, each merchant maintains an account for each user. A user must establish an account with each merchant in advance in order to be able to utilize the merchant. The prior art network based sales systems are not designed to allow users to use their existing credit card and demand deposit accounts for payment, nor are they designed to allow for programs to be included in digital advertisements.

Accordingly, therefore, it is a primary objective of this invention to provide a user interactive network sales system in which the user can freely use any merchant of

choice and utilize existing financial instruments for payment. Other objects include a network sales system which provides a high-quality user interface, which provides users with a wide variety and large volume of advertisements, which is easily extensible to new services, and which is easily expanded to new applications within the existing infrastructure of the system.

Still other objects of the invention are to provide a network payment system that will authorize payment orders and remove part of the risk of fraud from merchants.

An unavoidable property of public computer networks is that they are comprised of switching, transmission, and host computer components controlled by many individuals and organizations. Thus it is impossible for a network payment system to depend upon a specified minimum required degree of software, hardware, and physical security for all of the components in a public network. For example, secret keys stored in a given user's personal computer can be compromised, switches can be tampered with to redirect traffic, and transmission facilities can be intercepted and manipulated.

The risk of performing retail payment in a public network is compounded by statutes that make a payment system operator in part liable for the security lapses of its users. Existing Federal statutes in the United States,

including the Electronic Funds Transfer Act and the Consumer Credit Protection Act, require the operator of a payment mechanism to limit consumer liability in many cases. Payment system operators may have other fiduciary responsibilities for wholesale transactions. Similar responsibilities exist in other countries for retail and wholesale transactions.

In existing credit card payment systems, a credit card's issuing bank takes on the fraud risk associated with misuse of the card when a merchant follows established card acceptance protocols. Acceptance protocols can include verifying a card holder's signature on the back of their card and obtaining authorization for payments over a certain value. However, in network based commerce a merchant can not physically examine a purchasers credit card, and thus the fraud risk may revert to the merchant in so-called "card not present" transactions. Many merchants can not qualify to take this risk because of their limited financial resources. Thus the invention is important to allow many merchants to participate in network based commerce.

Other objects of the invention include utilizing existing financial instruments such as credit cards, debit cards, and demand deposit accounts for merchant payments.

Existing network payment systems do not connect to the financial system for authorization and are not

compatible with conventional financial instruments. Existing network payment systems include the Simple Network Payment Protocol (Dukach, S., SNPP: A Simple Network Payment Protocol, MIT Laboratory for Computer Science, Cambridge, MA, 1993.), Sirbu's Internet Billing Server (Sirbu, M. A., Internet Billing Service Design and Prototype Implementation, Information Networking Program, Carnegie-Mellon University, 1993), and NetCash (Medvinsy, G., and Newman, B. C., NetCash: A Design for Practical Electronic Currency on the Internet, Proc. 1st ACM Conf. on Comp. and Comm. Security, November, 1993).

A further object of the invention is to allow users in an untrusted network environment to use conventional financial instruments without requiring modification to existing financial system networks.

The following definitions apply to the present invention. A principal is a person, company, institution, or other entity that is authorized to transact business as part of a network payment system. A payment order describes the identity of a sender, a payment amount, a beneficiary, and a sender unique nonce. A sender is a principal making a payment. A beneficiary is a principal to be paid by the payment system. A sender unique nonce is an identifier that is used only once by a given sender. An example of sender unique nonces are unique timestamps. An external account is

an account that can be used to settle a payment order for either a sender or a beneficiary in the external financial system. Examples of external accounts include demand deposit accounts and credit card accounts. An external device is a physical object that is kept in the possession of a user for the purpose of identifying the user.

A network payment system is a service that authorizes and executes digital payment orders that are backed by external accounts. A payment system authenticates a payment order, checks for sufficient funds or credit, and then originates funds transfer transactions to carry out the payment order. A payment system acknowledges acceptance or rejection of a payment order. More than one payment system may exist on a given network, and a given payment system may operate on more than one host to increase its reliability, availability, and performance. An authenticator is a digital value that is appended to a payment order and becomes part of the payment order that authenticates the payment order as genuine.

SUMMARY OF THE INVENTION

The invention relates to a network sales system for enabling users to purchase products using a plurality of buyer computers that communicate over a network with a plurality of merchant computers. Each merchant computer has a database of digital advertisements. Each digital

advertisement includes a price and a product abstract. Buyer computers request, display, and respond to digital advertisements from merchant computers. Users can purchase products with their buyer computers after they have specified an account to pay for the purchase. A network payment service is used to authorize the purchase before merchant fulfillment is performed.

In a particular aspect of the invention, the merchant computer can request account information when it is not provided by the buyer computer. In another aspect of the invention, the buyer computer can present to a merchant a pre-authorized payment order that is obtained from a network payment system.

In another aspect of the invention, an electronic sales system contains digital advertisements that include programs. The programs are executed on behalf of a user by a buyer computer, and can lead to a purchase request directed to a merchant computer that performs product fulfillment.

In another aspect of the invention a network payment system executes payment orders. A payment order includes a sender, a beneficiary, a payment amount, and a nonce identifier. A payment order is signed by a client computer with an authenticator that is checked by the payment system. Payment orders are backed by accounts in the banking

system, and are authorized by the network payment system by sending messages into a financial authorization network that knows the status of these accounts. The payment system accomplishes settlement by sending messages into an existing financial system network.

In another aspect, payment orders are authenticated based on the delivery address they specify. In another aspect, the payment system will specify in its authorization legal delivery addresses. In another aspect, authenticators for payment orders are based on one-time transaction identifiers that are known only to the user and the payment system. In another aspect, payment orders for a given sender are only accepted from certain client computer network addresses. In another aspect, the network payment system sends messages into a financial authorization system in real-time before the network payment system will authorize a payment order.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects, features, and advantages of the invention will appear from the following description taken together with the drawings in which:

Figure 1 is a block diagram of a typical network sales system in accordance with the invention;

Figure 2 is a screen snapshot of a buyer computer display of an overview page from a merchant computer;

Figure 3 is a screen snapshot of a buyer computer display of a page of digital advertisements from a merchant computer;

Figure 4 is a screen snapshot of a buyer computer display of an account query page;

Figure 5 is a screen snapshot of a buyer computer display of a fulfillment page;

Figure 6 is a flow chart illustrating the processing of a sale between a buyer computer and a merchant computer;

Figure 7 is a flow chart illustrating the alternate processing of payment order means for obtaining missing payment information;

Figure 8 is a screen snapshot of a buyer computer display of an overview page from a merchant computer that contains a query input by the user;

Figure 9 is a screen snapshot of a buyer computer display of digital advertisements in response to a user's query;

Figure 10 is a screen snapshot of a buyer computer screen of a purchase confirmation;

Figure 11 is a screen snapshot of a buyer display of a fulfillment page like Figure 5;

Figure 12 is a flow chart illustrating an alternate processing of a sale between a buyer computer and a merchant computer where a payment order is pre-authorized;

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Figure 13 is a block diagram of a typical network payment system in accordance with the invention;

Figure 14 is a flow chart illustrating the authentication, authorization, and settlement of a payment order;

Figure 15 is a flow chart illustrating an alternate processing of the authentication and verification of a payment order where transaction identifiers are used; and

Figure 16 is a flow chart illustrating an alternate processing of the authorization of a payment order where real-time approval from the financial authorization network may not be obtained.

DESCRIPTION OF A PARTICULAR PREFERRED EMBODIMENT

A network sales system 200 as shown in Figure 1 employs a network 67 to interconnect a plurality of buyer computers 61 and 62, merchant computers 63 and 64, each merchant computer with respective digital advertisement databases 65 and 66, and a payment computer 68. A user of the system employs a buyer computer to retrieve advertisements from the merchant computers, and to purchase goods of interest. A payment computer is used to authorize a purchase transaction.

A digital advertisement includes a product description and a price. In digital advertisement database

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prices and descriptions may be stored separately, and one price may apply to many product descriptions.

In an alternate embodiment, the network sales system further includes external devices that are kept in the possession of users so that the users can authenticate themselves when they use a buyer computer.

The software architecture underlying the particular preferred embodiment is based upon the hypertext conventions of the World Wide Web. Appendix A describes the Hypertext Markup Language (HTML) document format used to represent digital advertisements, Appendix B describes the HTML forms fill out support in Mosaic 2.0, Appendix C is a description of the Hypertext Transfer Protocol (HTTP) between buyer and merchant computers, and Appendix D describes how documents are named with Uniform Resource Locators (URLs) in the network of computers. A document is defined to be any type of digital data broadly construed, such as multimedia documents that include text, audio, and video, and documents that contain programs.

Figure 2 shows an overview screen that has been retrieved from a merchant computer by a buyer computer and displayed by the buyer computer. It includes links 1, 2, and 3 that when activated by a user cause the buyer's computer to take specified actions. In the case of link 1, the document shown in Figure 3 is retrieved from a merchant

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computer and displayed. In the case of link 2, a short audio segment is retrieved from a merchant computer and played. In the case of link 3, the query that can be entered into the query dialog box 4 is sent to a merchant computer, and a document is retrieved from the merchant computer and displayed.

Figure 3 shows a document that contains three digital advertisements. The digital advertisements have been retrieved from the merchant computer after the activation of link 3. The merchant computer may set the prices contained in the advertisements based on the on the identity of the user as determined, for example, by the network address of the requesting buyer computer. The document includes links 5, 6, and 7 that are used to purchase the products described by the advertisements. For example, if link 5 is activated the missing payment information document shown in Figure 4 is retrieved from the merchant computer and displayed.

Figure 4 is a missing payment information document that is used to gather user account information for the requested purchase in an HTML form. Radio buttons 8, 9, 10, 11, 12 are used to select a means of payment, dialog box 13 is used to enter an account number, dialog box 14 is used to enter an optional authenticator for the account, purchase button 15 is used to send the account information to the

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merchant computer and proceed with the purchase, link 16 is used to abort the purchase and return to the document shown in Figure 2, and dialog box 17 is used to enter optional user information that is associated with the purchase and ultimately used by a financial institution as part of a textual billing identifier for the purchase transaction. If provided, this additional information is included in the payment order for the purchase.

Figure 5 is a fulfillment document 18 that is produced once valid account information is provided to the missing payment information document in Figure 4 and purchase button 15 is activated.

Figure 6 is a flowchart that more fully describes the information flow in the purchase transaction shown in Figures 2 to 5. An initial user inquiry 19 from activating link 1 results in the HTTP request 20 for a specific document with a specified URL. The URL specifies the name of the merchant computer. The merchant computer retrieves the document given the URL at 21, and returns it to the buyer computer at 22. The buyer computer displays the resulting HTML document at 23. When the user activates link 5, an HTTP request 25 is sent to the merchant computer requesting the document.

In an alternate embodiment, document 22 is executed at 23 as a program. A program is defined as a set of

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instructions that can exhibit conditional behavior based upon user actions or the environment of the buyer computer. As is known to those skilled in the art, there are many techniques for representing programs as data. The program can be interpreted or it can be directly executed by the buyer computer. The program when executed will cause the buyer computer to interact with the user leading to the user purchase request 24, and the purchase message 25.

The merchant computer then attempts to construct a payment order at 26 using the information it has gathered about the user. The buyer computer may have previously supplied certain credentials using fill out forms or other account identification means such as providing the network address of the buyer computer in the normal course of communication. If the ~~buyer~~ merchant computer is able to construct a complete payment order at 26 the payment order is sent to a payment computer for authorization at 27. If a payment order can be constructed, processing continues at 28.

Alternatively, the buyer computer may construct the payment order at 24 and send it to the merchant computer at 25. In this case, the payment order assembly steps at 26, at the merchant computer, may only need to forward the payment order from the buyer computer.

A payment order includes user account information, merchant account information, an amount, and a nonce

identifier that has not been previously used for the same user account. Variations of payment orders can be constructed, including payment orders that specify user or merchant identifiers in place of account information, payment orders that specify a valid time period, payment orders that specify foreign currencies, and payment orders that include comment strings. Part of the process of constructing a payment order is creating a corresponding authenticator using one of the authenticator methods described below.

In the illustrated embodiment of Figures 3 and 4, the merchant computer does not have sufficient information to construct a payment order at 26 and thus at 33 (Figure 7) constructs and returns a missing payment information document in response to request 25. Operation 33 includes in the constructed document appropriate form fields based on what information the merchant computer has already collected from the user. The document is returned to the buyer computer at 34 and is displayed at 35. When the user presses the purchase button 15, the contents of the form are transmitted to the merchant computer, at 36, to a specific URL name, using an HTTP request. Based on the supplied form fields, the merchant computer constructs a complete payment order. Alternatively, the buyer computer may construct the payment order at 35 and send it to the merchant computer as

part of step 36. In this case, the payment order assembly steps 37 at the merchant computer simply passes on the payment order from the buyer computer. The payment order is sent to the payment computer in a message at 38.

In either case, the flowchart continues in Figure 6 where the payment computer checks the authorization of the payment order at 28. If the payment system authorizes the request, an authorization message at 29 is returned to the buyer computer, and the merchant computer checks at 30 that the authorization message came from the payment computer using the authenticator mechanism described below. Assuming that the authorization message is valid, the merchant computer performs fulfillment at 30, returning the purchased product in response at 31. In our example in Figure 5 the response at 31 is document 18 that was the logical target of link 5. If the payment system does not authorize the payment order then response 31 is a rejection of the user's purchase request.

In an alternate embodiment, step 30 can encrypt the document using a key that is known to the buyer computer. As is known to those skilled in the art, the key can be communicated to the merchant computer using conventional key distribution protocols. In this manner the document will be protected from disclosure to other users.

dc 7/1/97

The fulfillment step at 30 can alternatively schedule a physical product to be shipped via ordinary mail or other means. This can be accomplished by updating a fulfillment request database or by sending a message to a shipping system. In this case the response at 31 is a confirmation that the product has been scheduled to ship. In this way the network sales system can implement an electronic mail order system.

Figures 8, 9, 10, and 11 show a second example that uses query based access to digital advertisements. It is assumed that the previous example was used by the user immediately before at the same buyer computer.

Figure 8 shows the overview screen where the query "movie review" has been entered into dialog box 39. When the user activates process button 40, the merchant searches databases as described by the URL attached to button 40, and creates a response document as shown in Figure 9.

Figure 9 shows digital advertisements 39, 40, 41, 42, 43, and 44 that were found in response to the query initiated by button 40. A scroll bar 45 shows that there are additional digital advertisements that are not shown. When link 46 is activated, the missing account information document shown in Figure 10 is returned by the merchant computer.

Figure 10 shows that the merchant computer has partial information on the buyer's account. Message 47 shows that the merchant computer already knows the buyer's account number. Purchase button 48 will send the optional user reference string in dialog box 50 to the merchant computer described by the URL behind button 48 and purchase the product corresponding to digital advertisement 39. Cancel link 49 will return the user to the document shown in Figure 2.

When purchase button 48 is activated, a document 51 is sent by the merchant computer and displayed by the buyer computer as shown in Figure 11.

Figure 12 shows an alternative method of processing a sales transaction. In this method when the user requests a purchase at 52, the buyer computer constructs a payment order at 53 and sends it for approval to the payment computer at 54. The payment computer authorizes the payment order at 55; and when the payment order is authorized, returns an unforgable certificate at 56 that the payment order is valid. Means of creating such unforgable certificates are described in authenticator method number one below. If at step 55 the payment order is not authorized, a rejection message is sent at 56 and the sales transaction is terminated.

The buyer computer then proceeds at 57 to send a pre-authorized purchase request to the merchant computer: The unforgable certificate 56 is included in a purchase message at 57 that is sent at 58 to the merchant computer. Based upon the pre-authorized payment order the merchant computer performs fulfillment at 59 and returns the product at 60. In a variation, the merchant computer at 59 checks to ensure the payment order has not been previously used. This can be accomplished by checking with a payment computer or maintaining a merchant computer database of previously accepted payment orders. The unforgable certificate created at step 56 does not need to include the user account information. This variation is useful if the user wishes to make purchases and remain anonymous to the merchant.

A Network Payment System

A network payment system 300 as shown in Figure 13, employs a public packet-switched network 69 to interconnect a plurality of client computers 70 and 71, and a plurality of payment computers such as 72, each payment computer having an account database 73, a settlement database 74, an authorized address database 75, a sender credential database 76, a financial system interface 77, and a real-time authorization interface 78. The interfaces 77 and 78 may be implemented by a single communications line.

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In an alternate embodiment, the network payment system further includes external devices that are kept in the possession of users so that the users can authenticate themselves when they use a buyer computer.

Account database 73 maintains temporal spending amounts, such as the amount spent in the current day, and also maintains temporal spending limits. The account database may also maintain a translation between principal identifiers and external account identifiers. Settlement database 74 records committed payment orders along with any authorization information for the orders that was obtained from interface 78. Address database 75 maintains for each sender a list of authorized buyer computer and delivery addresses. Credential database 76 maintains a list of credentials for principals and information that can be used to authenticate principals.

Figure 14 is a flowchart that describes the operation of the payment system. A client computer 71 constructs a payment order at 79, and computes and adds an authenticator to the payment order at 80. The payment order is sent at 81 to a payment computer, where the authenticator is verified at 82 to ensure that the payment order was originated by the sender it describes. Below we present different means of implementing 80 and 82.

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If the payment order is authentic and address restrictions are desired, at 83, either or both of the client computer address or the specified delivery address can be checked against address database 75. If address restrictions are desired and if the addresses in the payment order are not in the database, the payment computer sends a rejection message to the client computer. Address database 75 specifies, for each principal, acceptable client computer addresses and delivery addresses. A delivery address can be a network address, or a street address for packaged goods. As is known in the art, database 75 can include wild-card specifications and similar techniques to reduce its size. For example, database 75 could contain an entry for principal identifier "*@acme.com" restricting legal delivery addresses to "computer: *.com", "computer: cmu.edu", and "surface: *, 34 Main Street, Anytown, USA", indicating that any user at the company Acme can order products to be delivered to the network address at Acme or the university CMU, or to anyone at 34 Main Street, Anytown, USA.

If payment order address restrictions are not desired or have been checked, processing continues at 84 where the payment order is checked for replay and temporal spending limits. Replay is checked for by making sure that the sender did not previously present a payment order with

the same nonce by checking an index of committed payment orders by nonce in settlement database 74. If nonces are based on time, then a payment order that is older than an administratively determined value can be rejected out of hand. Time based nonces or sequential nonces permit old nonces to be removed from the settlement database 74. If a payment order has been previously processed or its nonce is too old, the payment order computer sends a rejection message to the client.

After the payment order passes the replay check, temporal spending limits are checked in account database 73. These spending limits can be applied on a per sender, per group of senders, and per payment system basis to limit fraud risk. The limits can be applied to any duration of time, for example a maximum spending amount per hour or per day. If the payment order would violate a spending limit, the payment computer sends a rejection message to the client.

Once the payment order passes the temporal spending check at 84, a message is constructed at 85 to check that the external account that backs the sender's payment system account has adequate funds or credit. If the sender identifier in the payment order is not already an account number in the external financial system, it is translated into a corresponding account number in the external

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financial system using account database 73. A real-time authorization request message is sent at 86 to the external financial system over interface 78. If the external financial system approves authorization request 86, an authorization message is returned at 87. If request 86 is not approved, the ~~payment computer~~ external financial system sends a rejection message to ~~the client at 87~~ payment computer.

In a variation of the above described approach, processing continues at 95 after 84. At 95 real-time authorization is only obtained when the total of a sender's payments since the last real-time authorization reaches a preset value, or the payment order is over a preset amount. These preset values can be optionally recorded on a per principal basis in database 73 or can be administratively determined for all principals. In this manner, the number of messages to the external financial system can be reduced. In addition, the payment system can avoid making real-time authorization requests for small payments when the risk is acceptable to the payment system operator. If real-time authorization is necessary, processing continues at 85 after 95. If real-time authorization is not necessary for a request, at 100 the payment order amount is added to the sender's total of payments since the last real-time authorization in database 73, and processing continues at 88.

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In another variation after 100 a check is made at 101 in database 73 to see if a background authorization process should be scheduled. A background authorization process permits the payment computer to continue its normal processing while it checks with the financial authorization network on the sender's account. This mechanism can be used to limit payment system risk. If the background authorization fails, the account is suspended by so updating database 73. If the sender's total of payments since last authorization is over a preset value stored in 73 then a background authorization process is scheduled at 102. Otherwise processing continues at 88.

In another variation, at 95 and 101 authorizations are obtained based on the amount spent since last authorization and time since last authorization.

At 88 the payment order is committed to execution and is recorded in settlement database 74. Recorded with the payment order in database 74 are portions of ~~authentication~~ authorization message 87 that show that the payment computer contacted the remote financial system. The amount of the payment order is added to running temporal spending records in database 73, and an authorization message is sent to the client computer at 90. The authorization message includes the payment order. In an alternate embodiment, at 90 the authorization message contains a truncated payment

order that includes at least the payment order's sender and the payment order's unique nonce.

In an alternate embodiment, the authorization message sent to the client at 90 includes at least one legal delivery addresses for the sender as determined from database 75.

Authorization message 90 must be transmitted in such a way that the client computer can be sure that it came from the payment computer. At 89 a payment system specific authenticator is added payment order. At 91 this authenticator is checked by the client computer. The steps at 89 are a dual of step 80, and the steps at 91 are a dual of step 82. The authentication means for steps 89 and 91 are described below.

Finally, settlement is performed at 92 in the external financial system 77 between external accounts that correspond to the sender and the beneficiary. If settlement is accomplished as part of real-time authorization at steps 86 and 87, as may occur in a real-time debit network, then no other steps need to be taken. If settlement is not accomplished as part of the authorization process, then financial system messages are sent to interface 77 to effect settlement. Depending on the external accounts involved, these messages may include electronic funds transfer messages or automated clearinghouse messages.

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In an alternate embodiment, at 92 settlement messages are sent to reconcile net transfer balances between principles on a temporal basis, for example once a day. In this embodiment the number of settlement messages can be less than the number of payment orders.

Authenticators may be created and checked using one of the following methods. The payment computer can use any of the first four methods, and the client computer can use any of the methods described.

In a first method for authenticators, at steps 80 or 89, a digest of the payment order is signed by the sending computer using a public-key cryptographic system such as RSA. This signature is used as the authenticator. As is well known in the art, the signing can be accomplished using a private key created from a public-key pair, where the signing key is only known by the signer, and the other public key is known to the receiving computer. At the payment computer the public key corresponding to each sender is kept in credential database 76. The private key for the payment service is also kept in database 76. At steps 82 or 91, the signature of the received message is checked using the public key known to the receiving computer.

In a second method for authenticators, at steps 80 or 89, a digest of the payment order is signed by the sending computer with a private key cryptosystem such as

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DES. This signature is used as the authenticator. At the payment computer, the private key corresponding to each sender is kept in credential database 76. At step 80, a digest of the payment order is signed by the client computer, and at step 89 a digest of the payment order with an added approval code is signed by the payment computer using the same private key. At steps 82 or 91, the signature of the received message is checked using the shared private key.

In a third method for authenticators, at step 80 the authenticator is computed by a protected device external to the system such as a Smart-Card. A protected device is specifically designed to be extremely difficult both to replicate and to compromise. In this method, the payment order is communicated at 80 to a Smart-Card. The Smart-Card computes and signs a digest of the payment order, and then communicates the signature back at 80 to be used as an authenticator. A Smart-Card produced authenticator uniquely associates a payment order with its creating Smart-Card. This is accomplished by having the Smart-Card contain a secret key "K" that is used to create a digital signature of the payment order. "K" is never released outside of the Smart-card. The Smart-Card is designed to make it computationally infeasible to compute "K" even with possession of the device. In this method, at step 82, a

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signature checking key from database 76 is used to check the authenticator. In an alternate embodiment, a user must manually signal their acceptance of each payment order on an input device that is part of the external device before the authenticator is created by the external device.

In a fourth method for authenticators, at steps 80 or 89, a network address is used as an authenticator. At steps 82 or 91, a digest of the payment order is sent back to the specified network address along with a random password. The computer at the specified network address must then return the payment order digest along with the password. If the network guarantees to deliver messages to the proper network address, this method will guarantee that the user or computer at the specified network address approves of the payment order. Assuming that network delivery is trusted, this method can be used to authenticate a sender computer's network address in a payment order. Alternatively, electronic mail can be used to send such confirmation messages between a user and the payment system.

In a fifth method for authenticators, at step 80, the authenticator is produced by an external device that produces a sequence of non-predicable transaction identifiers that are device specific. The authenticator is entered by the user into the client computer by reading its

display. One such device is described in U.S. Patent 4,856,062. According to this method, at step 91, the authenticator can be checked using the sender specific fixed code of the device which is kept in database 76. This sequence of steps is also shown in Figure 15 at steps 93 and 94.

In a sixth method for authenticators, at step 80, the authenticator is obtained by querying the user for a transaction identifier that is the next string from a physical list of one-time authorization strings. Such as list could be produced on a card, and the user can cross off authorization strings as they are used. According to this method, at step 91, the authenticator is checked against the next expected string from the sender using database 76. Database 76 can hold for each sender a list of random authorization strings, or can hold a sender specific secret key that was used to generate the list of authentication strings along with how many strings have been used so far. This sequence of steps is also shown in Figure 15 at 93 and 94.

In a seventh method for authenticators, at step 80 the authenticator is a previously obtained personal identification number (PIN) for the user. In this method in 91 the authenticator is checked against the expected PIN for the sender using database 76.

As will be obvious to one skilled in the art, any of the methods for creating authenticators can be used together to increase system security. For example, authenticator method six can be used to create an authenticator based on a transaction identifier, and then a payment order including a transaction identifier can be given a further authenticator using authenticator method one. In this example the resulting authenticators would be checked with their respective methods.

A digest of a payment order can be created with an algorithm such as MD5 [R. Rivest, The MD5 Message-Digest Algorithm, MIT Laboratory for Computer Science, Network Working Group Request for Comments 1321]. Alternatively, a digest can be the entire payment order or other functions of the payment order's component parts.

In addition in both the sales and payment systems alternate authenticator techniques can be used such as those described by Voydock and Kent in "Security Mechanisms in High-level Network Protocols", Computing Surveys Vol. 15, No. 2, June 1983. As will be appreciated by those skilled in the art, two-way authenticated byte-stream or remote procedure call interface connections that protect against replay can replace our message based authenticators.

Additions, subtractions, deletions, and other modifications of the described embodiment will be apparent

to those practiced in the art and are within the scope of the following claims.

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What is claimed is:

1. A network sales system comprising

a plurality of buyer computers and at least one merchant computer interconnected by a communications network,

means at each merchant computer for maintaining and providing a database of digital advertisements comprising

means for storing said digital advertisements, each digital advertisement including a product abstract,

means for communicating a digital advertisement to a buyer computer over said network in response to a network request from said buyer computer,

means at each buyer computer for requesting, displaying, and responding to digital advertisements comprising

means responsive to a user inquiry for selecting a merchant computer and obtaining a digital advertisement for a product from said database of advertisements at said merchant computer,

display means for displaying said advertisement,

purchase means responsive to a user request for communicating a purchase message to said merchant computer,

account identification means for transmitting the user's account information to said merchant computer,

means, at said merchant computer, comprising

authorization means to authorize said purchase message by sending messages into a financial system network,

fulfillment means to send said product to user conditional on approval of said authorization means.

2. The network sales system of claim 1 further wherein said authorization means at said merchant computer comprises

means for communicating a missing payment information request message to said buyer computer to obtain missing payment information,

means for receiving said missing payment information from said buyer computer,

means for authorizing said purchase message by sending messages into a financial system network,

and said account identification means at said buyer computer comprises

means responsive to said missing payment information request message to query the user for additional payment information,

means to send said additional payment information to said merchant computer.

3. The network sales system of claim 1 further wherein said account identification means comprises

means for assembling a payment order,

means for sending said payment order to a network payment system for authorization,

and wherein said authorization means comprises

means for verifying that said payment order has been previously authorized by said payment system.

4. An electronic sales system comprising

means for storing a database of digital advertisements, each digital advertisement for a product including a program,

means for communicating a digital advertisement to a buyer computer,

means at said buyer computer for displaying and responding to said digital advertisement comprising

display means for displaying said digital advertisement by executing a portion of said advertisement as a program and performing actions as specified by said program,

purchase means responsive to a user request for communicating a purchase message to a merchant computer,

means, at said merchant computer, comprising

fulfillment means to send said product to user.

5. A network payment system comprising

a plurality of client computers and at least one payment computer interconnected by a public packet switched communications network,

means at a client computer for performing payment comprising

payment specification means for constructing a payment order from a sender to a beneficiary,

signing means for authenticating said payment order as originating from said sender,

means for sending said payment order to a payment computer,

means for receiving a payment order authorization message from said payment computer,

means responsive to a payment order message at said payment computer comprising

verification means for verifying that said sender originated said payment order,

authorization means for sending a message into a financial authorization network to verify that said sender has adequate funds or credit and receiving an authorization in response,

means for recording said payment order and authorization in a settlement database,

response means for sending an authorization message to said client computer,

means for sending at least one message into a financial system network to transfer funds from said sender to said beneficiary.

6. The network payment system of claim 5 further wherein said payment specification means comprises

means for constructing a payment order, said payment order including a delivery address,

and said verification means comprises

means for verifying that said sender originated said payment order and checking said delivery address against a database of allowed delivery addresses for said sender.

7. The network payment system of claim 5 further wherein said response means comprises

means for determining allowed delivery addresses for said sender,

means for sending an authorization message to said client computer that includes allowed delivery addresses.

8. The network payment system of claim 5 further wherein said signing means comprises

means for generating the next expected transaction identifier for said sender and using it to create an authenticator,

and wherein said verification means comprises

means for generating the next expected transaction identifier for said sender, and

means for verifying that said authenticator was created using said transaction identifier.

9. The network payment system of claim 5 further wherein said signing means comprises

means for generating an authenticator using an external device,

and wherein said verification means comprises

means for verifying that said authenticator was created using said external device.

10. The network payment system of claim 5 further wherein said payment specification means comprises

means for constructing a payment order from a sender, said payment order including a client computer's network address,

and said verification means comprises

means for verifying said payment order was constructed at said client computer's network address and

checking said client address against a database of allowed client addresses for said sender.

11. The network payment system of claim 5 further wherein said authorization means comprises

determination means for determining the necessity for real-time authorization,

means for performing real-time authorization conditioned on said determination means.

12. A method for effecting sales over a network sales system having a plurality of buyer computers and at least one merchant computer interconnected by a communications network, encompassing the steps of

maintaining and providing a database of digital advertisements at each merchant computer

storing said digital advertisements, each digital advertisement including a product abstract,

communicating a digital advertisement to a buyer computer over said network in response to a network request from said buyer computer,

requesting, displaying, and responding at each buyer computer to digital advertisements comprising the steps of

selecting in response to a user inquiry a merchant computer and obtaining a digital advertisement for a product

from said database of advertisements at said merchant computer,

displaying said advertisement,

communicating in response to a user request a purchase message to said merchant computer,

transmitting the user's account information to said merchant computer,

authorizing at said merchant computer said purchase message by sending messages into a financial system network, and

sending said product to said user conditional on approval from said authorizing step.

13. The network sales method of claim 12 further wherein said authorizing step, at said merchant computer, comprises the steps of

communicating a missing payment information request message to said buyer computer to obtain missing payment information,

receiving said missing payment information from said buyer computer,

authorizing said purchase message by sending messages into a financial system network,

and said account identification step at said buyer computer comprising the steps of

querying the user for additional payment information responsive to said missing payment information request message,

and sending said additional payment information to said merchant computer.

14. The network sales method of claim 12 further wherein said account identification step comprises the steps of

assembling a payment order, and

sending said payment order to a network payment system for authorization,

and wherein said authorization step comprises the step of

verifying that said payment order has been previously authorized by said payment system.

15. An electronic sales method comprising the steps of

storing a database of digital advertisements, each digital advertisement for a product including a program,

communicating a digital advertisement to a buyer computer,

displaying and responding to said digital advertisement at said buyer computer comprising the steps of

displaying said digital advertisement by executing a portion of said advertisement as a program and performing actions as specified by said program,

communicating a purchase message in response to a user request to a merchant computer,

sending at said merchant computer said product to user.

16. A network payment method comprising the steps of interconnecting a plurality of client computers and at least one payment computer by a public packet switched communications network,

performing payment at a client computer comprising the steps of

constructing a payment order from a sender to a beneficiary,

authenticating said payment order as originating from said sender,

sending said payment order to a payment computer,

and receiving a payment order authorization message from said payment computer,

responding to a payment order message at said payment computer comprising the steps of

verifying that said sender originated said payment order,

sending a message into a financial authorization network to verify that said sender has adequate funds or credit and receiving an authorization in response,

recording said payment order and authorization in a settlement database,

sending an authorization message to said client computer,

and sending at least one message into a financial system network to transfer funds from said sender to said beneficiary.

17. The network payment system of claim 16 further wherein said constructing step means comprises the steps of

constructing a payment order, said payment order including a delivery address,

and said verifying step comprises the steps of

verifying that said sender originated said payment order, and

checking said delivery address against a database of allowed delivery addresses for said sender.

18. The network payment method of claim 16 further wherein said second sending step comprises the steps of

determining allowed delivery addresses for said sender,

and sending an authorization message to said client computer that includes allowed delivery addresses.

19. The network payment method of claim 16 further wherein said authenticating step comprises the steps of

generating the next expected transaction identifier for said sender and using it to create an authenticator,

and wherein said verifying step comprises the steps of

generating the next expected transaction identifier for said sender,

and verifying that said authenticator was created using said transaction identifier.

20. The network payment method of claim 16 further wherein said authentication step comprises the step of

generating an authenticator using an external device,

and wherein said verifying step comprises the steps of

verifying that said authenticator was created using said external device.

21. The network payment method of claim 16 further wherein said constructing step comprises the step of

constructing a payment order from a sender, said payment order including a client computer's network address,

and said verifying step means comprises the steps of

verifying said payment order was constructed at said client computer's network address,

and checking said client address against a database of allowed client addresses for said sender.

22. The network payment method of claim 16 further wherein said second sending step comprises the steps of

determining the necessity for real-time authorization,

and performing real-time authorization conditioned on its determined necessity.

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APPENDIX A - PAYNE AND RELATED REFERENCES

El. #	Claim	U.S. Patent No. 5,715,314 to Payne *et al.*, and related references[1]
1	1. A method for providing a service over a digital network, the method comprising:	**PAYNE:** **Payne discloses a method for providing a service over a digital network:** **"Network sales system"** **(Payne, Title)**[2] **"A network-based sales system** includes at least one buyer computer for operation by a user desiring to buy a product, at least one merchant computer, and at least one payment computer. **The buyer computer, the merchant computer, and the payment computer are interconnected by a computer network. . . ."** **(*Id.*, Abstract)** "This invention relates to **user-interactive network sales systems** for implementing an open marketplace for goods or services over **computer networks such as the Internet**." **(*Id.*, Col. 1, lines 14-16)** "The **software architecture underlying the particular preferred embodiment is based upon the hypertext conventions of the World Wide Web**. Appendix A describes the **Hypertext Markup Language (HTML) document** format used to represent digital advertisements, Appendix B describes the HTML forms fill out support in Mosaic 2.0, Appendix C is a description of the **Hypertext Transfer Protocol (HTTP) between buyer and merchant computers**, Appendix D describes how documents are named with Uniform Resource Locators **(URLs")** in the network of computers, and **Appendix E describes**

[1] Payne specifically incorporates "the entire disclosure" of United States Patent Application No. 08/168,519, filed Dec. 16, 1993 by David K. Gifford (the "'519 Application"), into its specification, and thus the '519 Application is considered part of the Payne reference for § 102 purposes. For material cited in the '519 Application, this chart includes parallel cites both to the '519 Application, and to United States Patent No. 5,724,424 to David K. Gifford ("Gifford"), which is a continuation of the '519 Application. While Payne (including the material incorporated from the '519 Application) anticipates each of the claims of the '506 Patent, the claims are also obvious over Payne in view of Gifford. It would have been obvious to one of ordinary skill in the art to combine Payne with Gifford because Payne specifically incorporates the application to which Gifford claims priority as part of its own specification, and the teachings in the two patents are thus closely related.

[2] Emphases added throughout.

El. #	Claim	U.S. Patent No. 5,715,314 to Payne *et al.*, and related references[1]
		the authentication of URLs using digital signatures." **(*Id.*, Col. 10, lines 9-20)** **Payne/'519 Application/Gifford** "The software architecture underlying the particular preferred embodiment is based upon the hypertext conventions of the World Wide Web. Appendix A describes the Hypertext Markup Language (HTML) document format used to represent digital advertisements, Appendix B describes the HTML forms fill out support in Mosaic 2.0, Appendix C is a description of the Hypertext Transfer Protocol (HTTP) between buyer and merchant computers, and Appendix D describes how documents are named with Uniform Resource Locators (URLs) in the network of computers. A document is defined to be any type of digital data broadly construed, such as multimedia documents that include text, audio, and video, and documents that contain programs." **('519 Application, Pg. 11, lines 7-19, incorporated into Payne by reference at Payne, Col. 1, lines 18-24) (*similarly, see* Gifford, Col. 4, line 61 – Col. 5, line 6)**
2	sending first display information from a first computer system to a user device,	*Claim Construction Note (Broadly Construed): This claim does not prohibit the user device from being part of the first computer system. This claim does not require that the display information be sent directly from the first computer system to the user device; i.e., it may be sent indirectly via some other system or device. The claim does not require that the "display information" be displayed by the user device.*[3] **PAYNE:** **Payne discloses sending display information from a first computer system that is a merchant computer to a user device, namely a buyer computer, or client computer:**

[3] Where appropriate, Requester has included in this Appendix notes on claim construction that Requester believes are consistent with the broadest reasonable interpretation standard afforded claims during reexamination. The cited prior art either anticipates or renders obvious each claim (*see* specific SNQs in Section IV of the Request), even if the claims are read more narrowly than Requester has proposed. Requester does not admit that any interpretations of any of the claims or constructions of claim terms that may be set forth herein would also be proper in the Litigations or in other court proceedings that do not apply the "broadest reasonable interpretation" standard applied during reexamination. See MPEP § 2258.I.G.

El. #	Claim	U.S. Patent No. 5,715,314 to Payne *et al.*, and related references[1]
		"A **user at a buyer computer asks to have advertisements displayed**, and the buyer computer requests advertisements from a **merchant computer**, which **sends the advertisements to the buyer computer**." **(Payne, Col. 1, lines 24-27)** "The **client computer is programmed to display the product descriptions**, to receive a request from the client user to display a product corresponding to a product description displayed by the client computer, and to cause a product hypertext link derived from a purchase transaction record to be activated." **(*Id.*, Col. 3, lines 29-34)** "With reference to FIG. 2, a purchase transaction begins when a **user at buyer computer 12 requests advertisements (step 24) and buyer computer 12 accordingly sends an advertising document URL (universal resource locator) to merchant computer 14 (step 26). The merchant computer fetches an advertising document from the advertising document database (step 28) and sends it to the buyer computer (step 30).** An example of an advertising document is shown in FIG. 5. Details of URLs and how they are used are found in the microfiche Appendix G." **(*Id.*, Col. 5, lines 16-25)**

El. #	Claim	U.S. Patent No. 5,715,314 to Payne *et al.*, and related references[1]

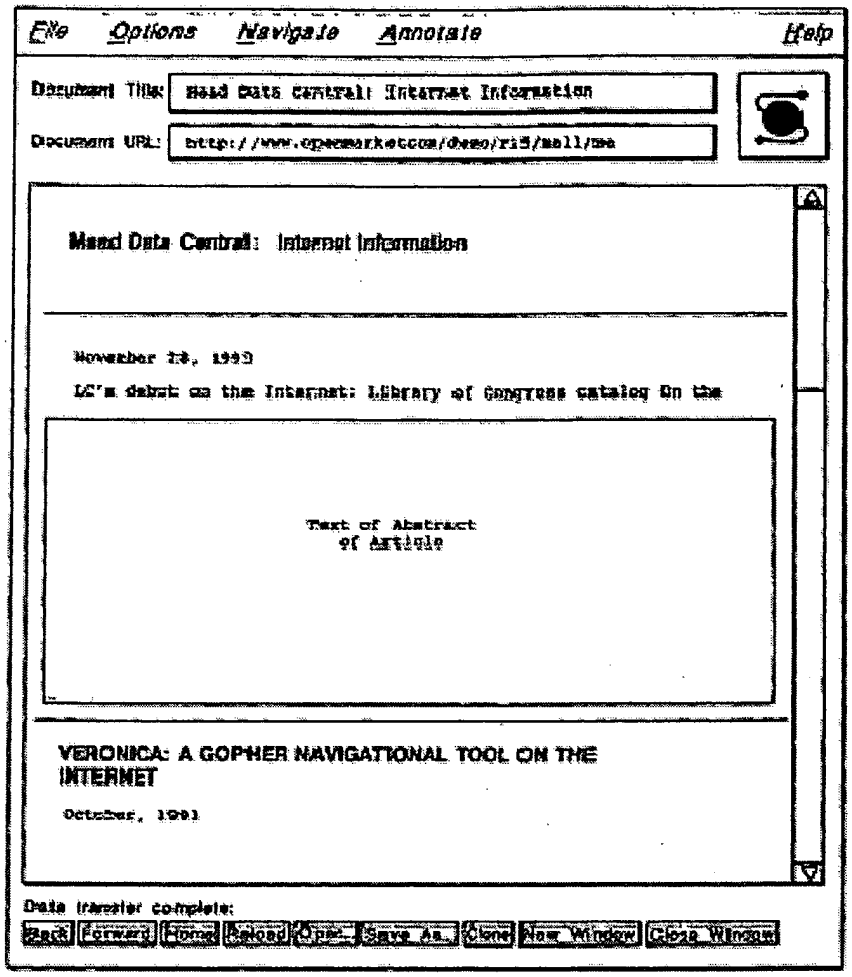


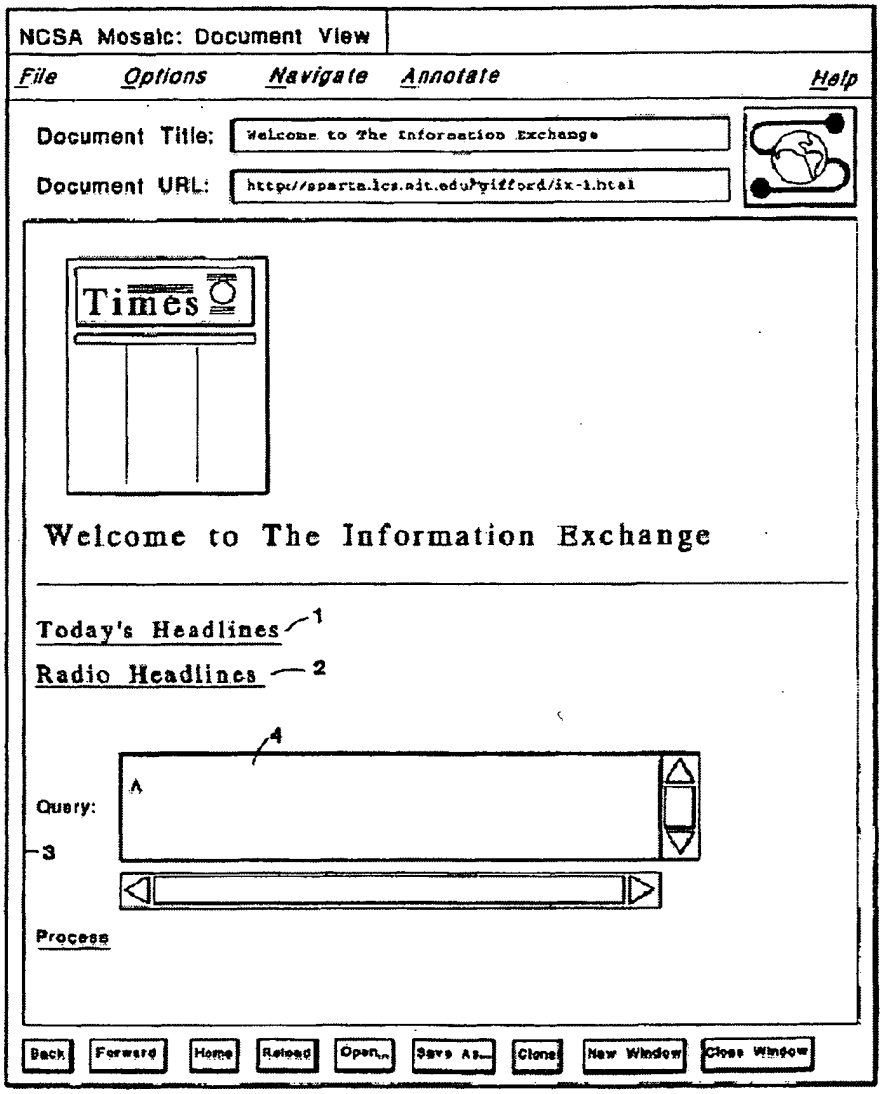
FIG. 5

(*Id.*, Fig. 5)

Payne/'519 Application/Gifford

"Figure 2 shows an overview screen that has been retrieved from a merchant computer by a buyer computer and displayed by the buyer computer."

('519 Application, Pg. 11, lines 20-22) (*similarly, see* Gifford, Col. 5, lines 7-9)

El. #	Claim	U.S. Patent No. 5,715,314 to Payne *et al.*, and related references[1]
		 **('519 Application/Gifford, Fig. 2)**[4]
3	wherein the first display information includes a control associated with a commercial	*Claim Construction Note (Broadly Construed): The claim does not require that the control itself be displayed. The control may be associated with more than one commercial service. The "commercial service" recited in this claim element need not be a commercial service listed in a later step (element 11) of this claim.* **PAYNE:** **Payne discloses that the display information includes a control allowing the user to purchase a product (control associated with a**

[4] Throughout this request, the final figures from Gifford are used in lieu of the draft figures included with the original '519 Application. No new matter was added to the final figures.

El. #	Claim	U.S. Patent No. 5,715,314 to Payne *et al.*, and related references[1]
	service;	**commercial service), which may be a hypertext link:** "The user browses through the advertising document and **eventually requests a product (step 32). This results in the buyer computer sending payment URL A to the payment computer** (step 34)." **(Payne, Col. 5, lines 27-30)** "The **client computer is programmed to display the product descriptions**, to receive a request from the client user to display a product corresponding to a product description displayed by the client computer, and to **cause a product hypertext link derived from a purchase transaction record to be activated.**" **(*Id.*, Col. 3, lines 29-34)** **Payne/'519 Application/Gifford** "Figure 2 shows an overview screen that has been retrieved from a merchant computer by a buyer computer and displayed by the buyer computer. It includes links 1, 2, and 3 that when activated by a user cause the buyer's computer to take specified actions." **('519 Application, Pg. 11, lines 20-24) (*similarly, see* Gifford, Col. 5, lines 7-11)**
4	accepting a first signal in response to a user input to activate the control;	*Claim Construction Note (Broadly Construed): This claim does not require that the user input be to the user device.* **PAYNE:** **Payne, discloses, upon user selecting a product, sending a signal, which is accepted either by the merchant computer (first computer), or by the payment computer (second computer):** "The user browses through the advertising document and **eventually requests a product (step 32). This results in the buyer computer sending payment URL A to the payment computer** (step 34)." **(Payne, Col. 5, lines 27-30)** "In an alternative embodiment, step 34 consists of the **buyer computer sending a purchase product message to the merchant computer, and the merchant computer provides**

El. #	Claim	U.S. Patent No. 5,715,314 to Payne *et al.*, and related references[1]
		payment VRL A to the buyer computer in response to the purchase product message." **(*Id.*, Col. 5, lines 48-52)** **Payne/'519 Application/Gifford** "Figure 2 shows an overview screen that has been retrieved from a merchant computer by a buyer computer and displayed by the buyer computer. It includes links 1, 2, and 3 that when activated by a user cause the buyer's computer to take specified actions." **('519 Application, Pg. 11, lines 20-24) (*similarly, see* Gifford, Col. 5, lines 7-11)**
5	associating an object identity with information entries and attributes,	*Claim Construction Note (Broadly Construed): This claim does not require any relationship between any of its "associating," "storing" and "assigning" steps, on the one hand, and the remaining steps in the claim, on the other hand.* **PAYNE:** **Payne teaches a system for associating payment object identities with information entries and attributes.** For example, Payne teaches sending a payment URL to a payment computer, containing associated information entries and attributes. This payment URL includes a unique digital signature, which is associated with the information entries and attributes, because it is a hash of the information entries and attributes in the payment URL: "The user browses through the advertising document and eventually requests a product (step 32). This results in the buyer computer sending payment URL A to the payment computer (step 34). Payment URL A includes a product identifier that represents the product the user wishes to buy, a domain identifier that represents a domain of products to which the desired product belongs, a payment amount that represents the price of the product, a merchant computer identifier that represents merchant computer 14, a merchant account identifier that represents the particular merchant account to be credited with the payment amount, a duration time that represents the length of time for which access to the product is to be granted to the user after completion of the purchase transaction, an expiration time that represents a deadline beyond which this particular payment URL cannot be used, a buyer network address, and a payment URL authenticator that is a digital signature based on a cryptographic key.