

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MICROSOFT CORPORATION,  
Petitioner,

v.

BRADIUM TECHNOLOGIES LLC,  
Patent Owner.

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Case IPR2016-00448  
Patent 7,908,343 B2

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Before BRYAN F. MOORE, BRIAN J. McNAMARA, and MINN CHUNG,  
*Administrative Patent Judges.*

McNAMARA, *Administrative Patent Judge.*

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and*  
*37C.F.R. § 42.73*

## BACKGROUND

On July 25, 2016, we instituted an *inter partes* review of claims 1–20 (the “challenged claims”) of U. S. Patent No. 7,908,343 B2 (“the ’343 Patent”). Paper 9 (“Dec. to Inst.”). Patent Owner filed a Confidential Corrected Patent Owner Response (Paper 20, “PO Resp.”) and a public version (Paper 21) and a Motion to Seal (Paper 19), Petitioner filed a Petitioner Reply (Paper 34, “Pet. Reply”). Petitioner and Patent Owner both filed Motions to Exclude (Papers 45 and 47, respectively) and corresponding oppositions (Papers 49 and 47, respectively) and replies (Papers 55 and 58 (confidential) and 59 (public), respectively). Patent Owner also filed a Motion to Seal its Opposition to Petitioner’s Motion to Exclude. Paper 52. Transcripts of a combined oral hearing in this proceeding and IPR2016-00449 held on April 18, 2017 (Paper 80, “Hrg. Tr.” (public); Paper 81, “Confidential Hrg. Tr.” (confidential)) have been entered into the record.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. §318(a). We base our decision on the preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

Having reviewed the arguments of the parties and the supporting evidence, we conclude that Petitioner has demonstrated by a preponderance of the evidence that the challenged claims are unpatentable.

## THE ’343 PATENT (EXHIBIT 1001)

In the ’343 Patent, large scale images are retrieved over network communication channels for display on client devices by selecting an update image parcel relative to an operator controlled image viewpoint to display on the client device. Ex. 1001, Abstract; col. 3, ll. 44–48. A request for an

update image parcel is associated with a request queue for subsequent issuance over a communication channel. *Id.* at col. 3, ll. 48–51. The update image parcel is received in one or more data packets on the communications channel and is displayed as a discrete portion of the predetermined image. *Id.* at col. 3, ll. 51–57. The update image parcel optimally has a fixed pixel array size and may be constrained to a resolution equal to or less than the display device resolution. *Id.*

The system described in the '343 Patent has a network image server and a client system where a user can input navigational commands to adjust a 3D viewing frustum for the image displayed on the client system. *Id.* at col. 5, ll. 24–53. Retrieval of large-scale or high-resolution images is achieved by selecting, requesting, and receiving update image parcels relative to an operator or user controlled image viewpoint. *Id.* at col. 3, ll. 44–48. When the viewing frustum is changed by user navigation commands, a control block in the client device determines the priority of the image parcels to be requested from the server “to support the progressive rendering of the displayed image,” and the image parcel requests are placed in a request queue to be issued in priority order. *Id.* at col. 7, ll. 8–25.

On the server side, high-resolution source image data is pre-processed by the image server to create a series of derivative images of progressively lower resolution. *Id.* at col. 6, ll. 1–6. Figure 2 of the '343 patent is reproduced below.

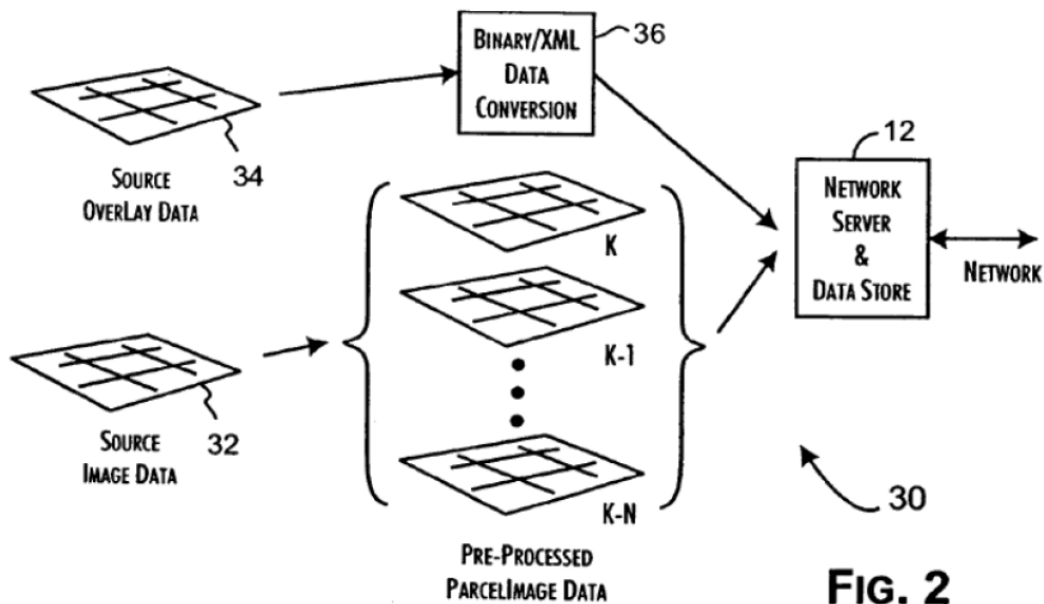


Figure 2 depicts preparation of pre-processed image parcels at the network image server. *See id.* at col. 4, ll. 54–57; col. 5, ll. 60–62; col. 6, ll. 7–10. As illustrated in Figure 2, source image data 32 is pre-processed to obtain a series  $K_{1-N}$  of derivative images of progressively lower image resolution. *Id.* at col. 6, ll. 4–6. Initially, the source image data—i.e., the series image  $K_0$ —is subdivided into a regular array of image parcels of a fixed byte size, e.g., 8K bytes. *Id.* at col. 6, ll. 6–11. In an embodiment, the resolution of a particular image in the series is related to the predecessor image by a factor of four while, at the same time, the array subdivision is also related by a factor of four, such that each image parcel of the series images has the same fixed byte size, e.g., 8K bytes. *Id.* at col. 6, ll. 11–16. In another embodiment, the image parcels are compressed by a fixed ratio—for example, the 8K byte parcels are compressed by a 4-to-1 compression ratio such that each image parcel has a fixed 2K byte size. *Id.* at col. 6,

ll. 17–22. The image parcels are stored in a file of defined configuration, such that any parcel can be located by specification of a  $K_D$ , X, Y value, representing the image set resolution index D and the corresponding image array coordinate. *Id.* at col. 6, ll. 23–26. The TCP/IP protocol is used to deliver image parcels, e.g., 2K-byte compressed image parcels, to the clients. *Id.* at col. 7, ll. 28–29, 35–37. For preferred embodiments, where network bandwidth is limited, entire image parcels preferably are delivered in corresponding data packets. *Id.* at col. 7, ll. 29–32. This allows each image parcel to fit into a single network data packet, which improves data delivery and avoids the transmission latency and processing overhead of managing image parcel data broken up over multiple network data packets. *Id.* at col. 7, ll. 32–35.

#### ILLUSTRATIVE CLAIM

Claim 1, which is drawn to a method is illustrative:

1. A method of retrieving large-scale images over network communications channels for display on a limited communication bandwidth computer device, said method comprising:
  - issuing, from a limited communication bandwidth computer device to a remote computer, a request for an update data parcel wherein the update data parcel is selected based on an operator controlled image viewpoint on the computer device relative to a predetermined image and the update data parcel contains data that is used to generate a display on the limited communication bandwidth computer device;
  - processing, on the remote computer, source image data to obtain a series  $K_{1-N}$  of derivative images of progressively lower image resolution and wherein series image  $K_0$  being subdivided into a regular array wherein each resulting image parcel of the array has a

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