Petitioner Microsoft Corporation's Demonstratives

Microsoft Corporation
v.
Bradium Technologies, LLC
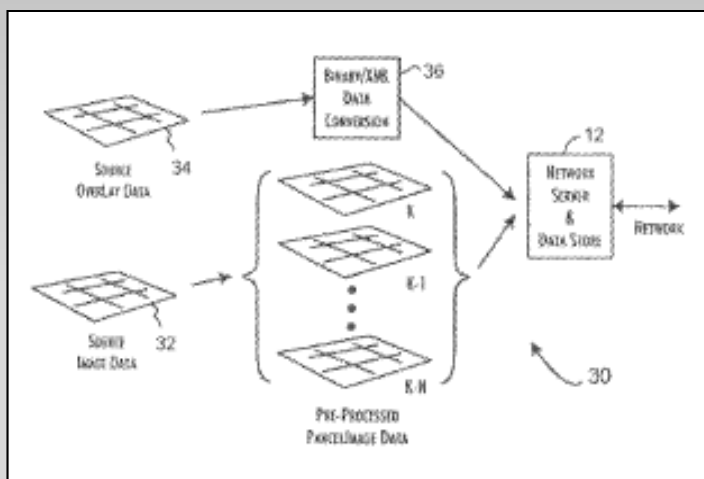
Case IPR2016-00448
Patent No. 7,908,343 B2

Case IPR2016-00449
Patent No. 8,924,506 B2

Oral Argument
April 18, 2017

The Challenged '343 and '506 Patents

'343 Patent (Ex. 1001), Fig. 2

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The network image server system **30** preferably pre-processes the source image data **32** and or source overlay data **34** to forms preferred for storage and serving by the network server **12, 22**. The source image data **32** is preferably pre-processed to obtain a series K.sub.1-N of derivative images of progressively lower image resolution. The source image data
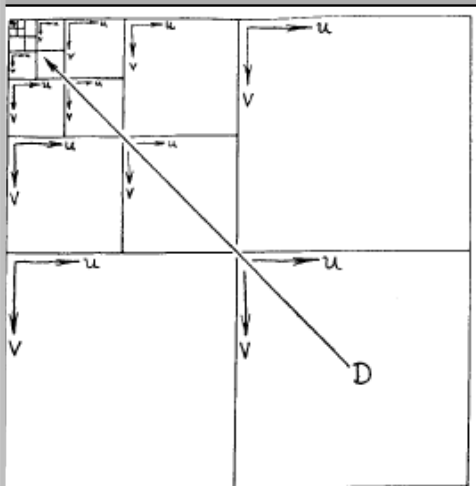
Ex. 1001 ('343 Pat.), 6:4-6

GML/binary overlay data to a local parcel data store **46**. Preferably image data parcels are stored in conventional quad-tree data structures, where tree nodes of depth D correspond to the stored image parcels of a derivative image of resolution KD. The XML/GML/binary overlay data is pref-
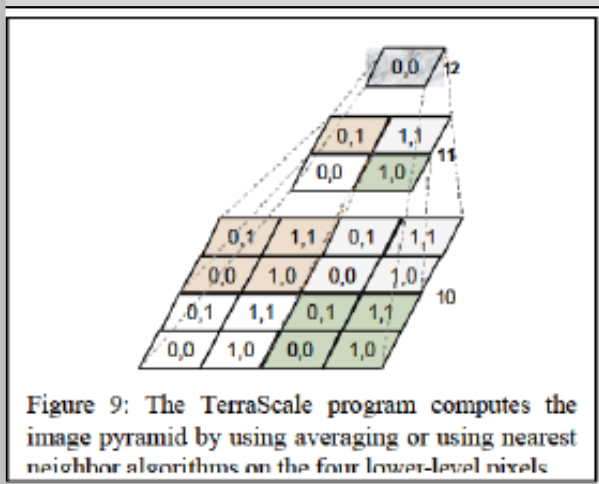
Id. at 6:56-59

source. Such lower resolution image parcels are therefore more likely to be preferentially downloaded. In accordance with the present invention, this generally assures that a complete image of at least low resolution will be available for rendering.
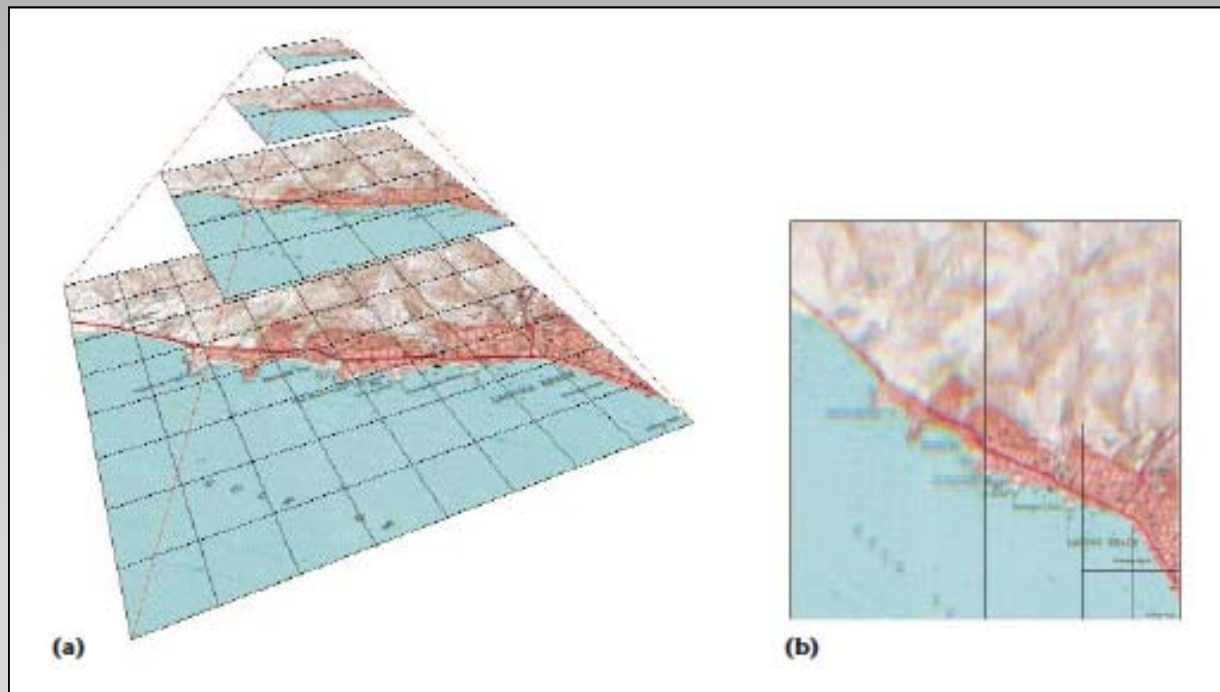
Id. at 10:10-14

Williams, "Pyramidal Parametrics" (1983) (Ex. 1005, App. L.)

Figure 9: The TerraScale program computes the image pyramid by using averaging or using nearest neighbor algorithms on the four lower-level pixels

Microsoft TerraServer
(System released 1998; white paper 1999-2000) (Ex. 1030)

(a)   (b)

Reddy TerraVision (1999) (Ex. 1004)

. IPR2016-00448 Paper 1 at 7; Ex. 1005, ¶¶ 70-71, 84; Ex. 1016 ¶¶ 70-75; Paper 34
4; Ex. 1004, Fig. 1 cited in Papers 1 and 34 and Exs. 1005 and 1016, *passim*;
6-00449 Paper 1 at 7-8; ; Ex. 1005, ¶¶ 71-72, 83; Ex. 1016 ¶¶ 70-75; Paper 31 at 10.

Petitioner Demonstrative 3

13. A display system for displaying a large-scale image retrieved over a limited bandwidth communications channel, said display system comprising:

a display of defined screen resolution for displaying a defined image;

a memory providing for the storage of a plurality of image parcels displayable over respective portions of a mesh corresponding to said defined image;

a communications channel interface supporting the retrieval of a defined data parcel over a limited bandwidth communications channel;

a processor coupled between said display, memory and communications channel interface, said processor operative to select said defined data parcel, retrieve said defined data parcel via said limited bandwidth communications channel interface for storage in said memory, and render said defined data parcel over a discrete portion of said mesh to provide for a progressive resolution enhancement of said defined image on said display; and

a remote computer, coupled to the limited bandwidth communications channel, that delivers the defined data par-

cel wherein delivering the defined data parcel further comprises processing 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 predetermined pixel resolution wherein image data has a color or bit per pixel depth representing a data parcel size of a predetermined number of bytes, resolution of the series K_{1-N} of derivative images being related to that of the source image data or predecessor image in the series by a factor of two, and said array subdivision being related by a factor of two such that each image parcel being of a fixed byte size, wherein the processing further comprises compressing each data parcel and storing each data parcel on the remote computer in a file of defined configuration such that a data parcel can be located by specification of a K_D, X, Y value that represents the data set resolution index D and corresponding image array coordinate.

Other disputed claim elements

'343 Patent:

9. The method of claim 7, wherein said update image parcel contains pixel data in a fixed size array independent of the pixel resolution of said predetermined image.

10. The method of claim 1, wherein issuing the request for an update data parcel further comprises preparing the request by associating a prioritization value to said request, wherein said prioritization value is based on the resolution of said update data parcel relative to that of other data parcels previously received by the limited communication bandwidth computer device, and wherein issuing said request is responsive to said prioritization value for issuing said request in a predefined prioritization order.

11. The method of claim 10, wherein said prioritization values is based on the relative distance of said update data parcel from said operator controlled image viewpoint.

15. The display system of claim 13, wherein said processor is operative to prioritize the retrieval of said data parcel among a plurality of selected data parcels pending retrieval, wherein the relative priority of the data parcel is based on the difference in the resolution of the image parcel and the resolution of said plurality of selected data parcels.

'506 Patent:

6. The method of claim 1, wherein processing the source image data further comprises queuing the update data parcels on the remote computer based on an importance of the update data parcel as determined by the remote computer.

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