



US007908343B2

(12) **United States Patent**
Levanon et al.

(10) **Patent No.:** **US 7,908,343 B2**
(45) **Date of Patent:** ***Mar. 15, 2011**

(54) **OPTIMIZED IMAGE DELIVERY OVER LIMITED BANDWIDTH COMMUNICATION CHANNELS**

(75) Inventors: **Isaac Levanon**, Ramat Hasharn (IL); **Yoni Lavi**, Raanana (IL)

(73) Assignee: **Inovo Limited**, The Valley Anguilla (VG)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **12/619,643**

(22) Filed: **Nov. 16, 2009**

(65) **Prior Publication Data**

US 2010/0064002 A1 Mar. 11, 2010

Related U.S. Application Data

(63) Continuation of application No. 10/035,987, filed on Dec. 24, 2001, now Pat. No. 7,644,131.

(60) Provisional application No. 60/258,488, filed on Dec. 27, 2000, provisional application No. 60/258,489, filed on Dec. 27, 2000, provisional application No. 60/258,465, filed on Dec. 27, 2000, provisional application No. 60/258,468, filed on Dec. 27, 2000, provisional application No. 60/258,466, filed on Dec. 27, 2000, provisional application No. 60/258,467, filed on Dec. 27, 2000.

(51) **Int. Cl.**
G06F 15/16 (2006.01)

(52) **U.S. Cl.** **709/217; 709/230; 345/625; 382/232; 382/305**

(58) **Field of Classification Search** **709/202, 709/203, 217, 230, 246, 247; 345/625; 382/232, 382/305**

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,929,860	A	7/1999	Hoppe
6,182,114	B1	1/2001	Yap et al.
6,212,301	B1	4/2001	Warner et al.
6,314,452	B1	11/2001	Dekel et al.
6,326,965	B1	12/2001	Castelli et al.
6,345,279	B1	2/2002	Li et al.
6,346,938	B1	2/2002	Chan et al.
6,397,259	B1	5/2002	Lincke et al.
6,608,933	B1	8/2003	Dowell et al.
6,704,024	B2	3/2004	Robotham et al.
6,711,297	B1	3/2004	Chang et al.
6,801,665	B1	10/2004	Atsumi et al.
7,644,131	B2*	1/2010	Levanon et al. 709/217

OTHER PUBLICATIONS

Hoppe, H. "Progressive Meshes", SIGGRAPH '96: Proceedings of the 23rd annual conference on Computer graphics and interactive techniques, 1996, pp. 99-108.

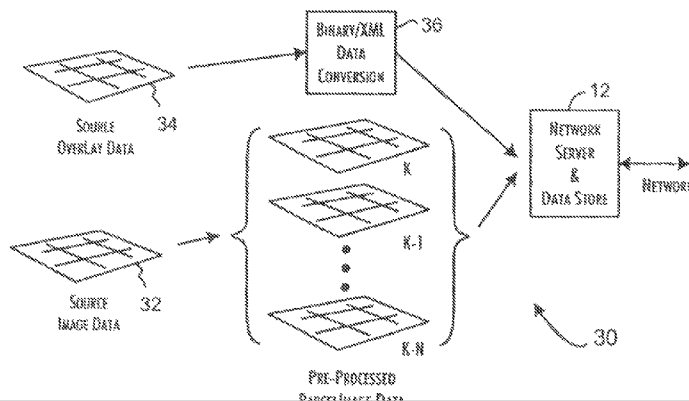
* cited by examiner

Primary Examiner — David Lazaro

(57) **ABSTRACT**

Large-scale images are retrieved over network communications channels for display on a client device by selecting an update image parcel relative to an operator controlled image viewpoint to display via the client device. A request is prepared for the update image parcel and associated with a request queue for subsequent issuance over a communications channel. The update image parcel is received from the communications channel and displayed as a discrete portion of the predetermined image. The update image parcel optimally has a fixed pixel array size, is received in a single and or plurality of network data packets, and is constrained to a resolution less than or equal to the resolution of the client device display.

20 Claims, 5 Drawing Sheets



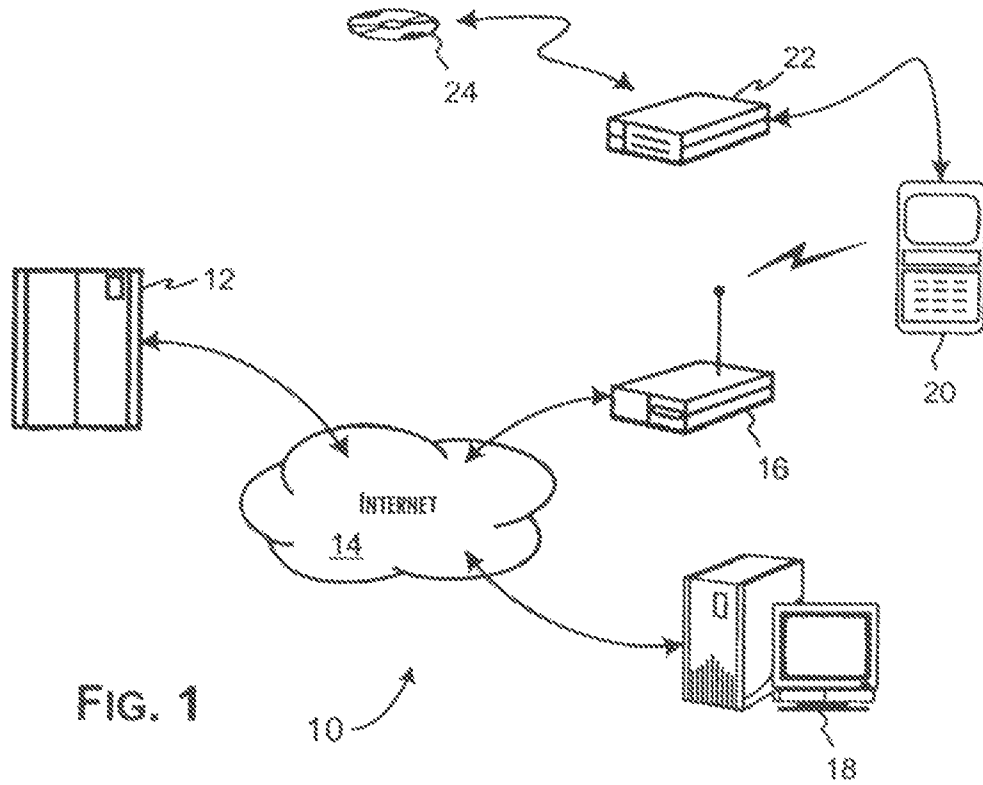


FIG. 1

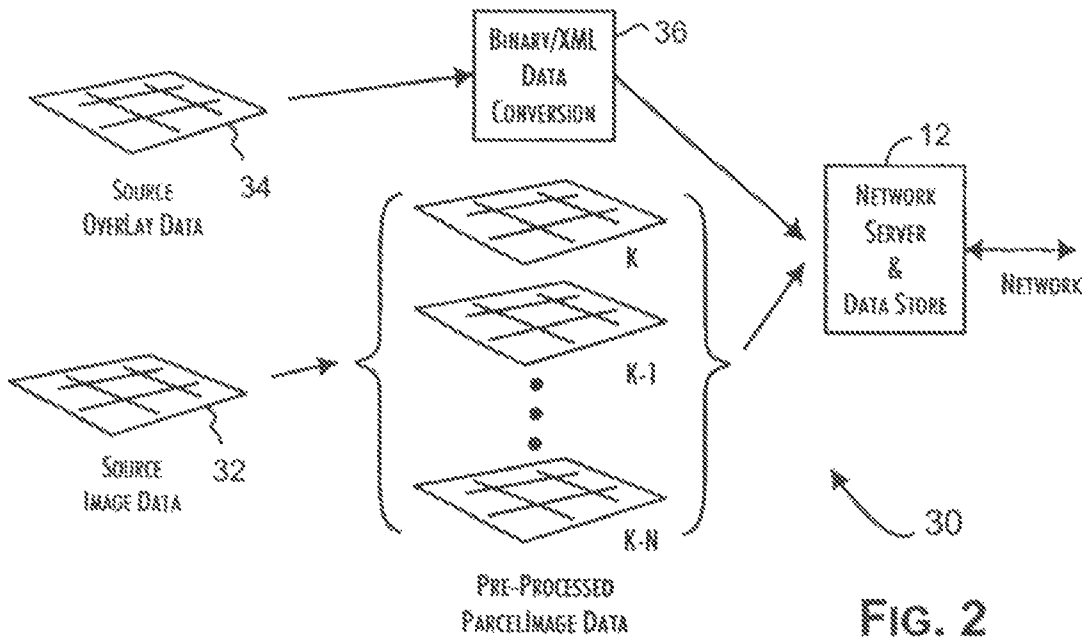


FIG. 2

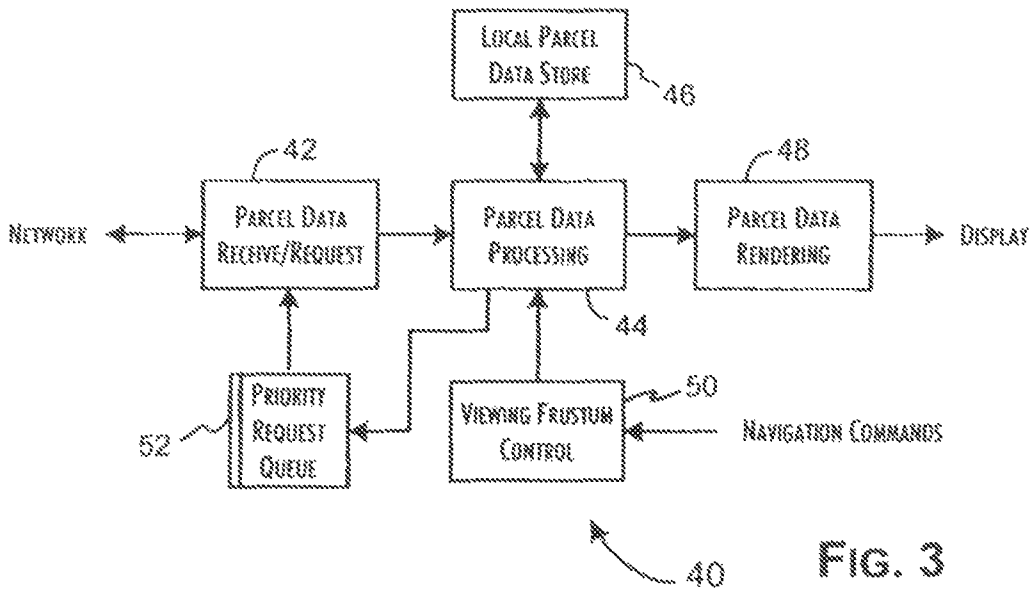


FIG. 3

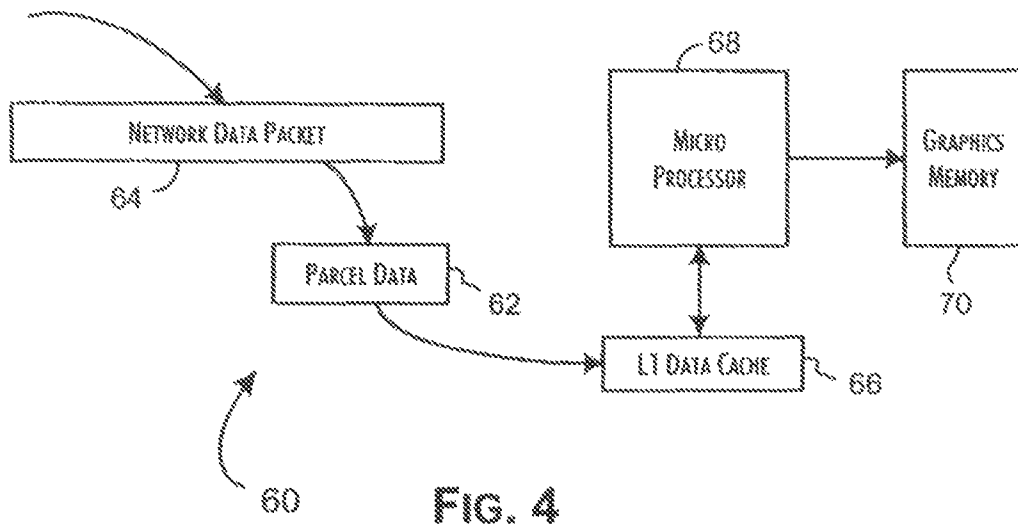
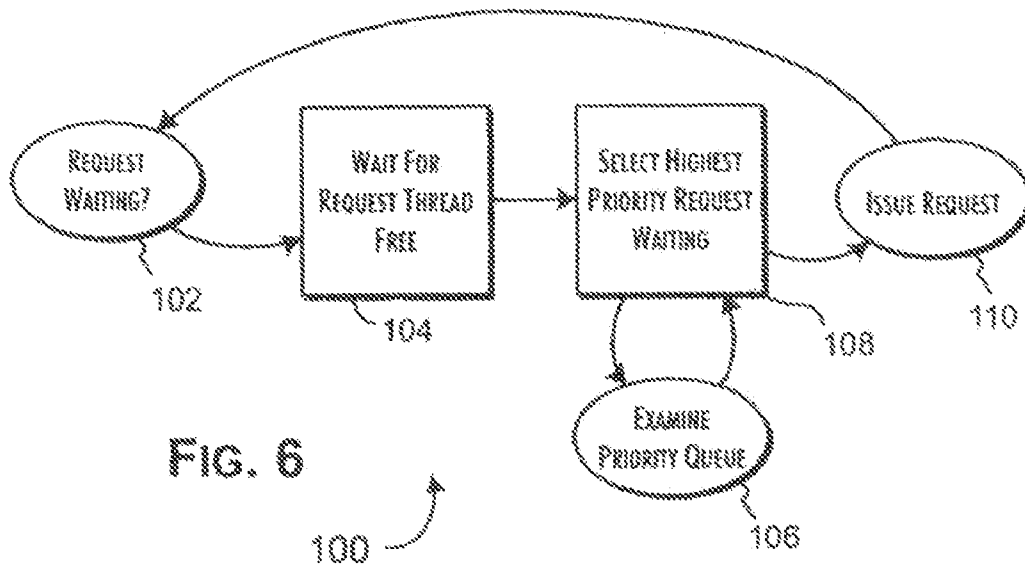
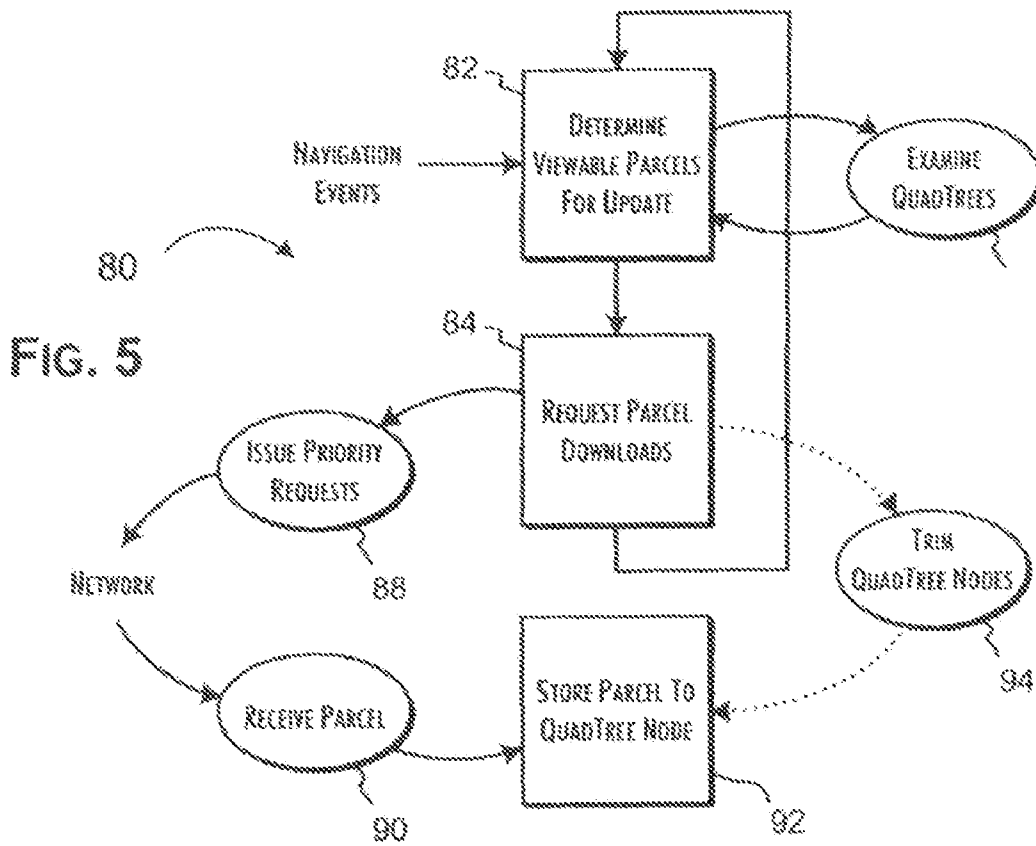


FIG. 4



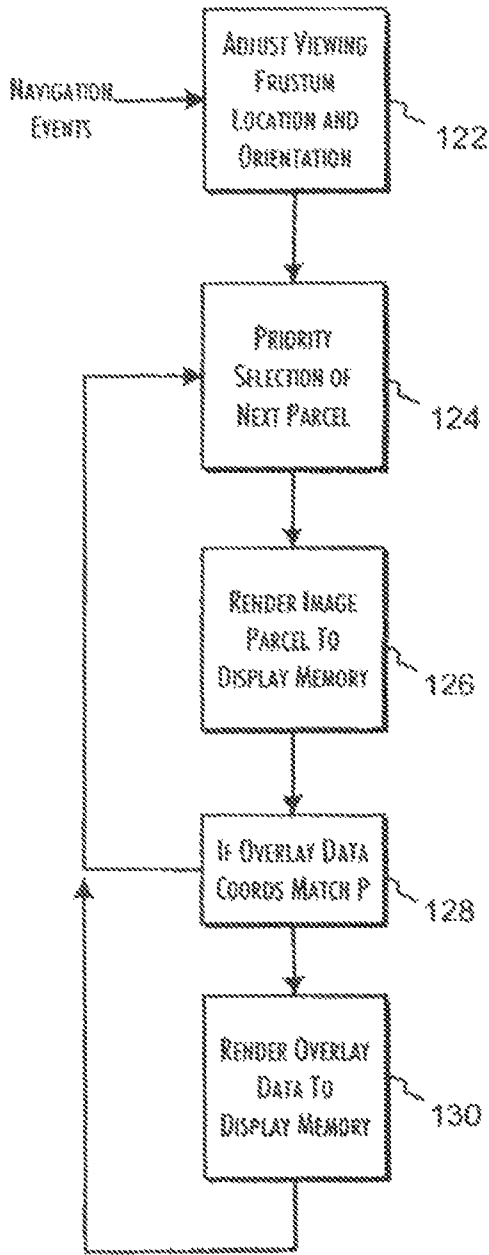
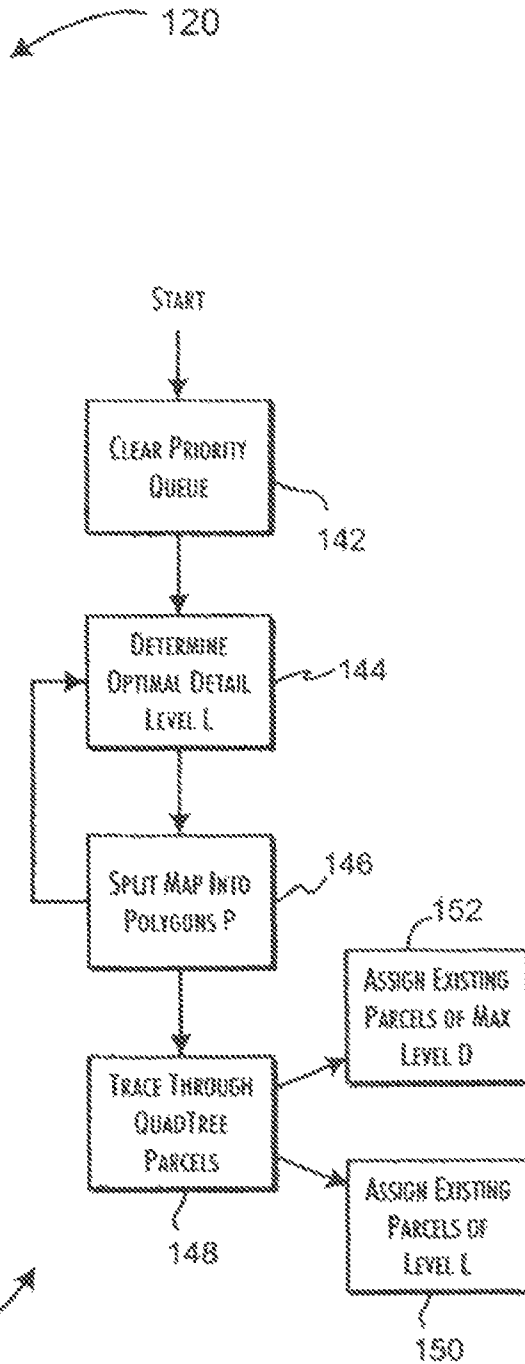


FIG. 8

FIG. 7



140

150

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.