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(12) **United States Patent**
Mallart

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(54) **REAL TIME VIDEO GAME USES EMULATION OF STREAMING OVER THE INTERNET IN A BROADCAST EVENT**

(75) Inventor: **Raoul Mallart**, Mountain View, CA (US)

(73) Assignee: **Koninklijke Philips Electronics N.V.**, Eindhoven (NL)

(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(65) **Prior Publication Data**

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Related U.S. Application Data

(63) Continuation-in-part of application No. 09/138,782, filed on Aug. 24, 1998.

(51) **Int. Cl.**⁷ **G06F 15/16**

(52) **U.S. Cl.** **709/231; 709/205; 345/473**

(58) **Field of Search** **709/204, 205, 709/237, 231, 210; 345/473**

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 5,659,691 A 8/1997 Durward et al. 395/329
- 5,754,190 A * 5/1998 Dutton et al. 345/473
- 5,953,506 A * 9/1999 Kalra et al. 709/231
- 5,956,028 A * 9/1999 Matsui et al. 345/329
- 5,999,944 A * 12/1999 Lipkin 345/502

- 6,006,254 A * 12/1999 Waters et al. 709/205
- 6,055,563 A * 4/2000 Endo et al. 709/203
- 6,185,602 B1 * 2/2001 Bayrakeri 709/204
- 6,204,862 B1 * 3/2001 Barstow et al. 345/473
- 6,208,357 B1 * 3/2001 Koga et al. 345/473
- 6,215,498 B1 * 4/2001 Filo et al. 345/419
- 6,219,045 B1 * 4/2001 Leahy et al. 345/331
- 6,285,379 B1 * 11/2001 Gallery 345/473
- 6,331,851 B1 * 12/2001 Suzuki et al. 345/419
- 6,351,267 B1 * 2/2002 Gever et al. 345/473

OTHER PUBLICATIONS

Katkere A Et Al: "VRML-Based WWW Interface To MPI Video" Dec. 14-15, 1995, p. 25-31 XP000791035 the whole document.

Barrus J.W; Waters R.C ; Anderson D.B. : "locales: supporting large multiuser virtual environments" vol. 16, No. 6 Nov. 1996 pp. 50-57 and 51-53 XP002125829. <http://www.virtualive.com> of Orad Hi-Tec Systems, Ltd.;

(List continued on next page.)

Primary Examiner—Zarni Maung

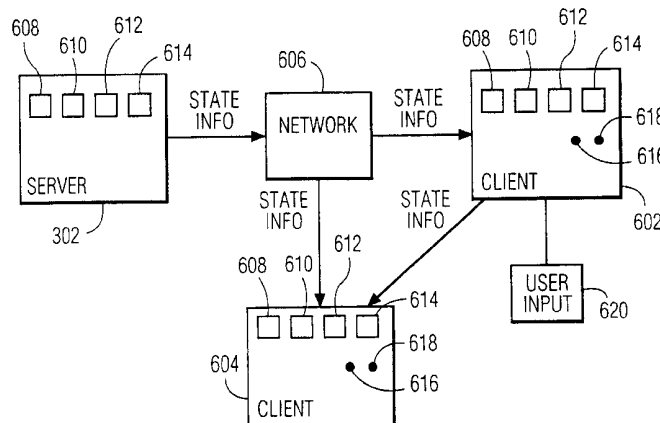
Assistant Examiner—Abdullahi E. Salad

(74) *Attorney, Agent, or Firm*—Gwenaelle Kasriel

(57) **ABSTRACT**

In a broadcast application on a client-server network the streaming is emulated of animation data over the Internet to a large number of clients. The animation is considered a sequence of states. State information is sent to the clients instead of the graphics data itself. The clients generate the animation data itself under control of the state information. The server and clients communicate using a shared object protocol. Thus, streaming is accomplished as well as a broadcast without running into severe network bandwidth problems. This approach is used to map a real life event, e.g., a motor race, onto a virtual environment in order to let the user participate in a virtual race against the real life professionals, the dynamics of the virtual environment being determined by the state changes sent to the user.

9 Claims, 6 Drawing Sheets



600

OTHER PUBLICATIONS

“Key Concepts”, Mar. 5, 1996, at: <<http://sgi.felk.cvut.cz/~holecek/VRML/concepts.html>>;

“Internetwork Infrastructure Requirements for Virtual Environments”, D.P. Brutzman et al., Jan. 23, 1996, at: <http://www.stl.nps.navy.mil/~brutzman/vrml/vrml_95.html>;

“Overview of the MPEG-4 Standard”, ISO/IEC JTC1/SC29/WG11 N2323 ed. Rob Koenen, Jul. 1998, at <<http://drogo.cselt.stet.it/mpeg/standards/mpeg-4/mpeg-4.htm>>;

“Design of the Interactive Sharing Transfer Protocol”, at <<http://www.hir.com/opencom/istp.html>>;

“Dead Reckoning in DIS”, at <<http://www.ist.ucf.edu/lab-sproj/projects/drhtml> >>;

“DIS-Protocol”, at <<http://www.cg.tuwien.ac.at/~faisst/LS-DMVE/dis.html> >>.

* cited by examiner

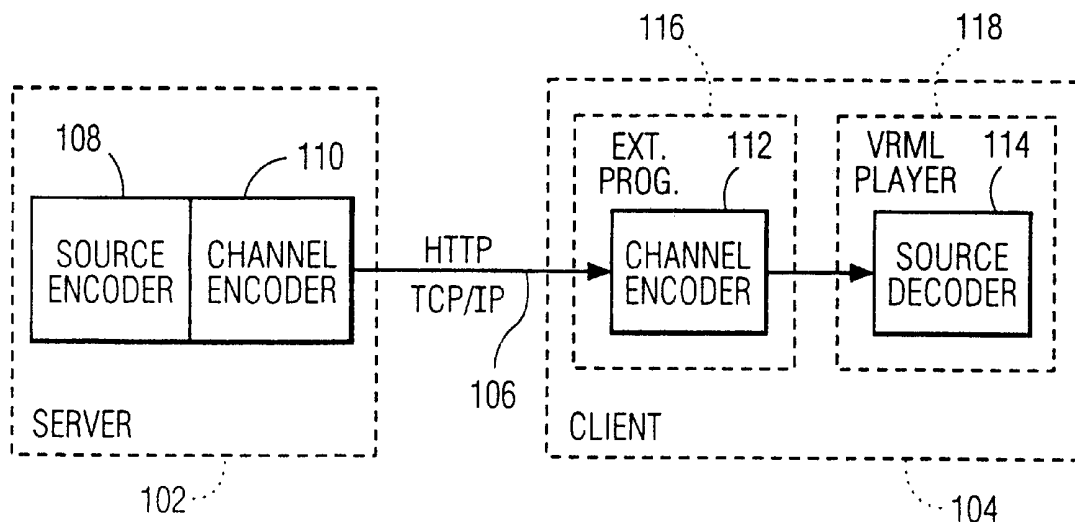


FIG. 1

100

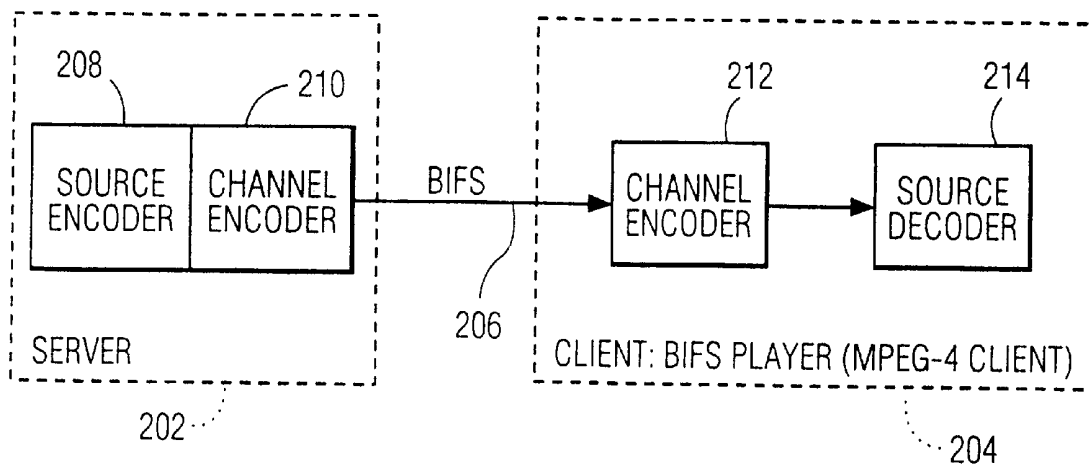


FIG. 2

200

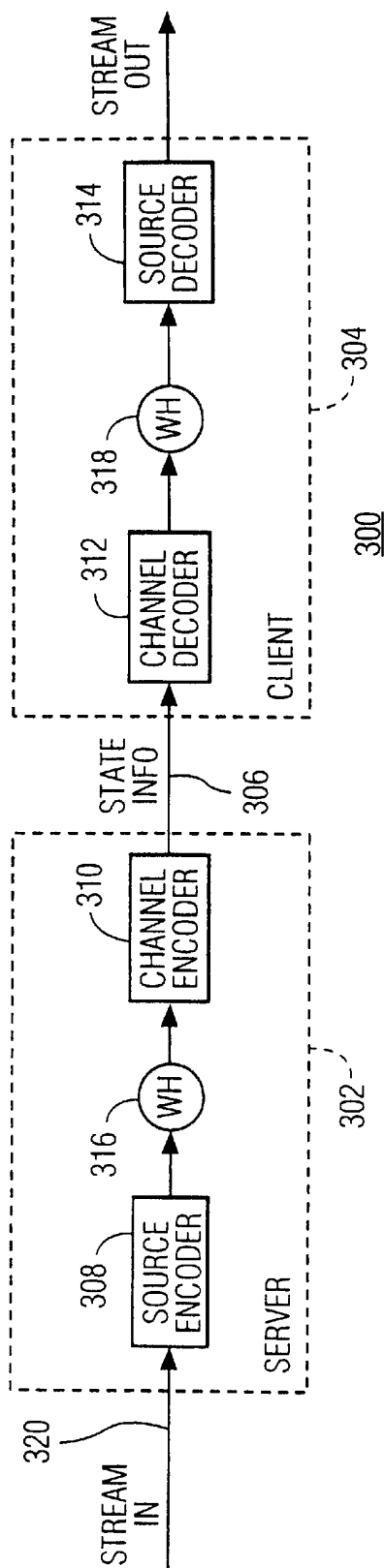


FIG. 3

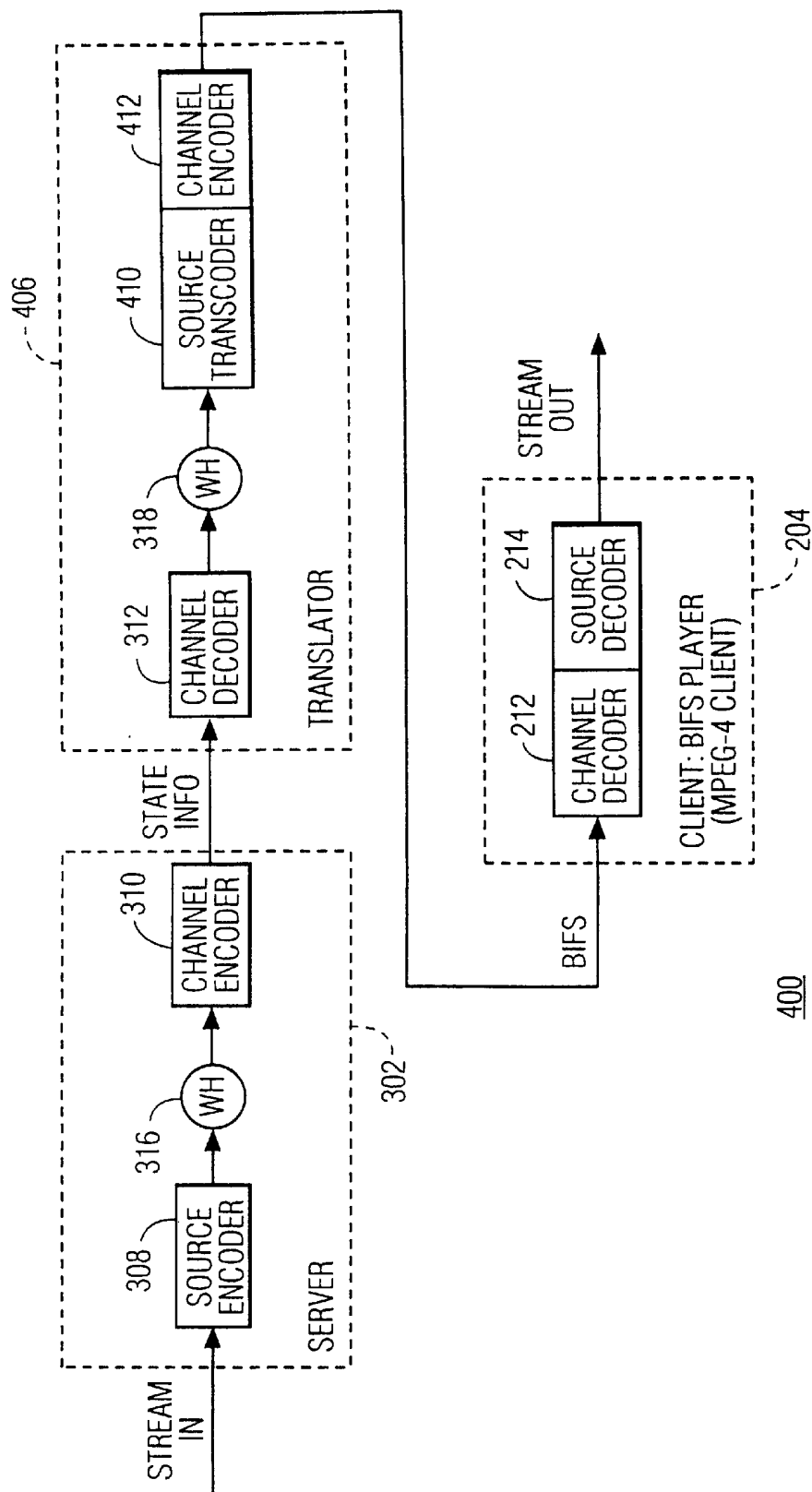


FIG. 4

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