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United States Patent [19] Craig

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[54] **MEDIA SERVER FOR SUPPLYING VIDEO AND MULTI-MEDIA DATA OVER THE PUBLIC SWITCHED TELEPHONE NETWORK**

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[21] Appl. No.: **416,016**

[22] Filed: **Apr. 3, 1995**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 910,395, Jul. 8, 1992, abandoned.

[51] Int. Cl.⁶ **H04M 11/00**

[52] U.S. Cl. **348/13; 348/7; 455/6.3**

[58] Field of Search **348/13, 6, 7, 12; 379/105, 96, 93.25, 93.17, 102.02, 102.03; 455/3.1, 4.1, 4.2, 5.1, 6.1, 6.3**

[56] References Cited

U.S. PATENT DOCUMENTS

3,766,324	10/1973	Budrys et al. .
4,164,767	8/1979	Gyi et al. .
4,214,285	7/1980	Land .
4,332,980	6/1982	Reynolds et al. .
4,381,522	4/1983	Lambert .
4,506,387	3/1985	Walter .
4,513,390	4/1985	Walter et al. .
4,518,989	5/1985	Tabiki et al. .
4,533,943	8/1985	Poirier .
4,538,176	8/1985	Nakajima et al. .
4,569,026	2/1986	Best .

(List continued on next page.)

OTHER PUBLICATIONS

H. Armbruster et al., "Broadband ISDN: Realization Aspects of the Future Telecommunications Infrastructure".

A.F. Bulfer, "Dial-A-View".

A.F. Bulfer, "A Trial of National Pay-Per-View Ordering and Billing System".

G. Domann, "BERKOM Test Network and BISDN/CATV Concept".

P.A. Polese et al., "Residential Subscriber System in a Broadband ISDN Environment".

M.L. Liou, "Visual Telephony as an ISDN Application".

H. Yasuda et al., "1/544-Mbit/s Transmission of TV Signals by Interframe Coding Systems".

H. Nikajima, "Enhanced Video Response System—VRS Phase II".

K. Haji, "Video Response System—VRS—".

British Patent Document No. GB 2 193 420 A.

"The Electronic Still Store: A Digital System for the Storage and Display of Still Pictures", by W.G. Connolly et al., SMPTE Journal, vol. 85, No. 8, pp. 609-613 (Aug. 1976).

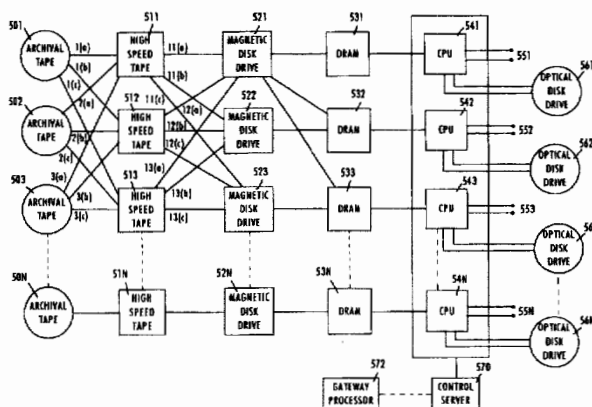
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[57] ABSTRACT

A media server receives, stores and forwards multi-media data and full motion video feature presentations within a public switched telephone network. The media server receives wide band digital video and MPEG encoded video signals. The wide band digital video is encoded using either a real-time MPEG encoding for immediate transmission over network facilities to subscribers or, using a multi-pass MPEG encoder for storage by the Media Server for subsequent transmission. The Media Server includes four levels of storage including DRAM, optical and magnetic disk storage, high speed tape storage and archival storage. A Librarian Processor allocates storage space on a media appropriate to retrieval requirements for the video data. The Librarian is responsive to a Storage Manager Processor and a Session Manager Processor for providing video program data to an Output Controller. The Session Manager Processor monitors all input, output and throughput of the Media Server and monitors all user initiated sessions. Interface with users for multi-media applications and interactive control of video presentations is over a packet data network, via an interactive processor which receives and decodes control data. A Multi-Media Application Processor supports multi-media applications resident on the Media Server.

36 Claims, 6 Drawing Sheets



U.S. PATENT DOCUMENTS

4,635,136	1/1987	Ciampa et al. .	4,897,867	1/1990	Foster et al. .	
4,654,866	3/1987	Bottle et al. .	4,941,040	7/1990	Pocock et al. .	
4,703,422	10/1987	Kinoshita et al. .	4,949,187	8/1990	Cohen .	
4,734,764	3/1988	Pocock et al. .	4,972,462	11/1990	Shibata .	
4,755,872	7/1988	Bestler et al. .	4,974,111	11/1990	Platte et al. .	
4,758,881	7/1988	Laspada .	4,994,922	2/1991	Goddard .	
4,761,684	8/1988	Clark et al. .	4,995,078	2/1991	Monslow et al. .	
4,763,191	8/1988	Gordon et al. .	4,996,714	2/1991	Desjardins et al. .	
4,777,525	10/1988	Preston, Jr. .	5,010,399	4/1991	Goodman et al. .	
4,792,849	12/1988	McCalley et al. .	5,012,334	4/1991	Etra .	
4,797,913	1/1989	Kaplan et al. .	5,014,125	5/1991	Pocock et al. .	
4,807,023	2/1989	Bestler et al. .	5,027,400	6/1991	Baji et al. .	
4,821,121	4/1989	Beaulier .	5,130,792	7/1992	Tindell et al. .	
4,823,196	4/1989	Goddard .	5,132,992	7/1992	Yurt et al. .	
4,829,372	5/1989	McCalley et al. .	5,172,413	12/1992	Bradley et al.	455/3.1
4,835,604	5/1989	Kondo et al. .	5,220,420	6/1993	Hoarty et al. .	
4,843,471	6/1989	Yazawa et al. .	5,231,494	7/1993	Wachob .	
4,847,691	7/1989	Barton et al. .	5,247,347	9/1993	Litteral et al. .	
4,849,811	7/1989	Kleinerman .	5,371,532	12/1994	Gelman et al.	455/4.2
4,852,154	7/1989	Lewis et al. .	5,410,343	4/1995	Coddington et al.	379/105
4,866,515	9/1989	Tagawa et al. .	5,506,615	4/1996	Awaji	455/4.2
4,868,866	9/1989	Williams, Jr. .	5,528,281	6/1996	Grady et al.	455/4.2
4,870,479	9/1989	Dubner .	5,528,282	6/1996	Voeten et al.	455/4.2
4,888,638	12/1989	Bohn .	5,550,577	8/1996	Verbiest et al.	455/4.1
4,890,320	12/1989	Monslow et al. .	5,550,863	8/1996	Yurt et al.	455/3.1
			5,606,359	2/1997	Youden et al.	348/13

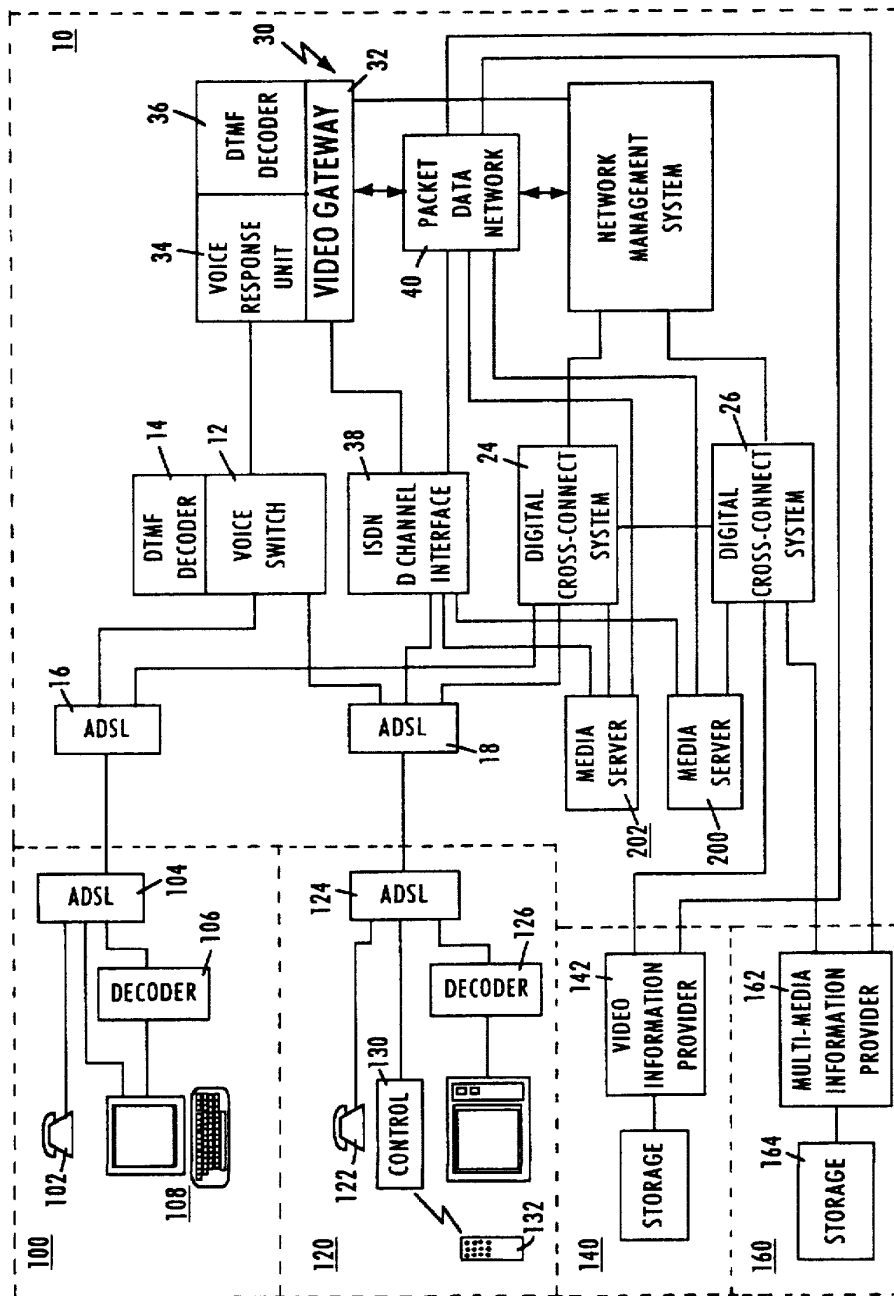


FIG. 1

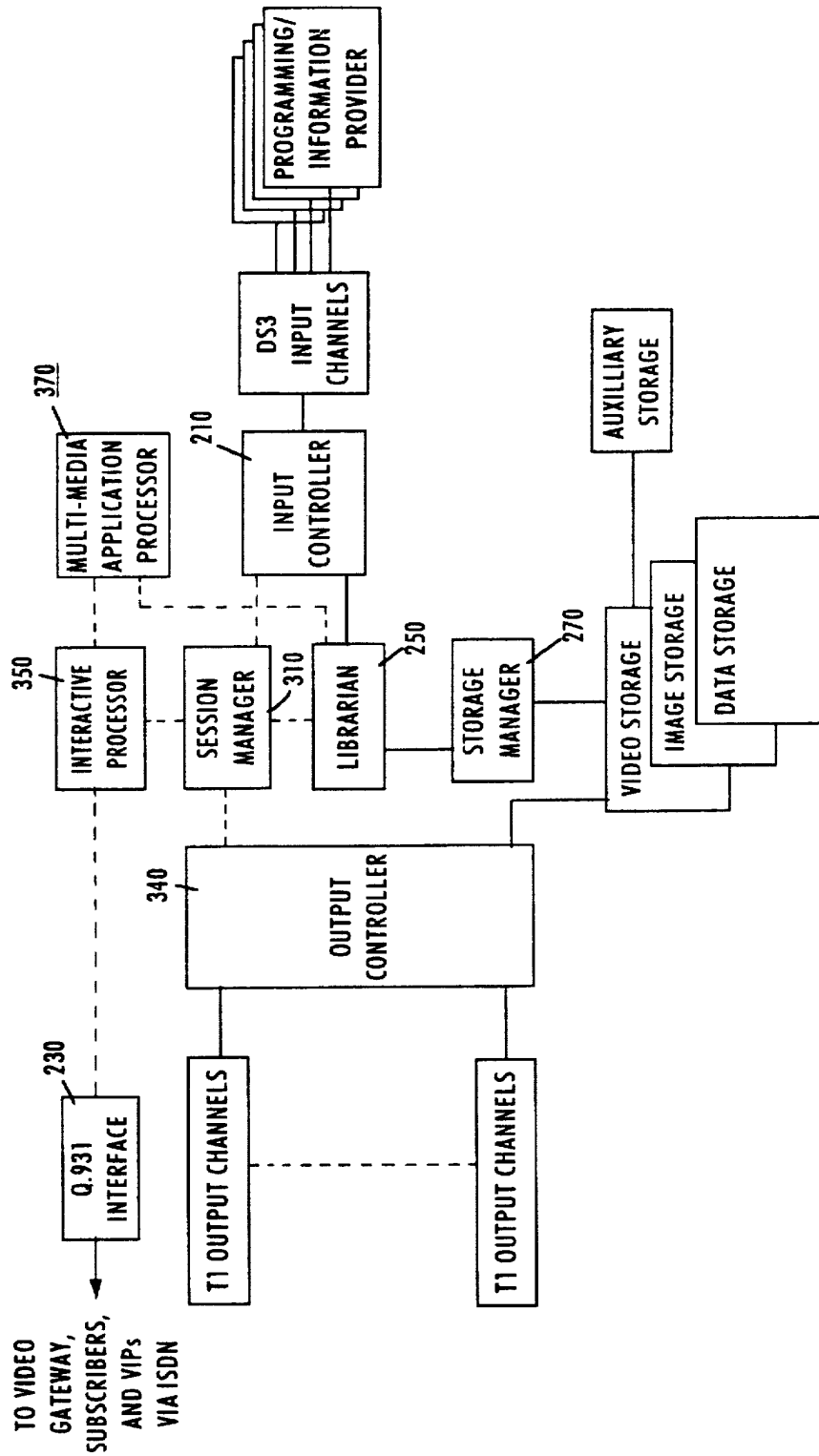
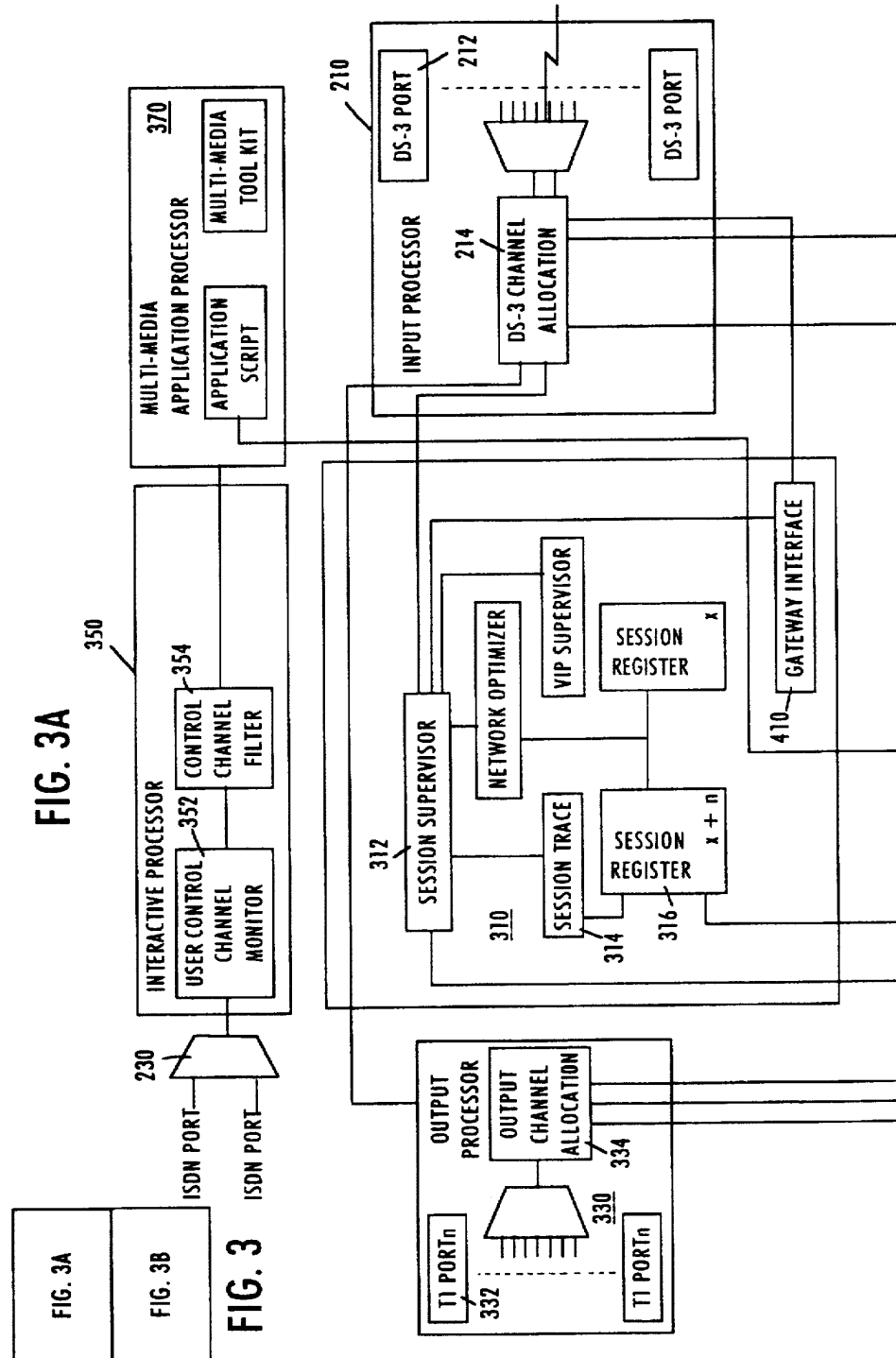


FIG. 2



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