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(54) **INTEGRATED CABLE MODEM AND CABLE TELEVISION MANAGEMENT SYSTEM**

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(60) Provisional application No. 60/188,779, filed on Mar. 13, 2000.

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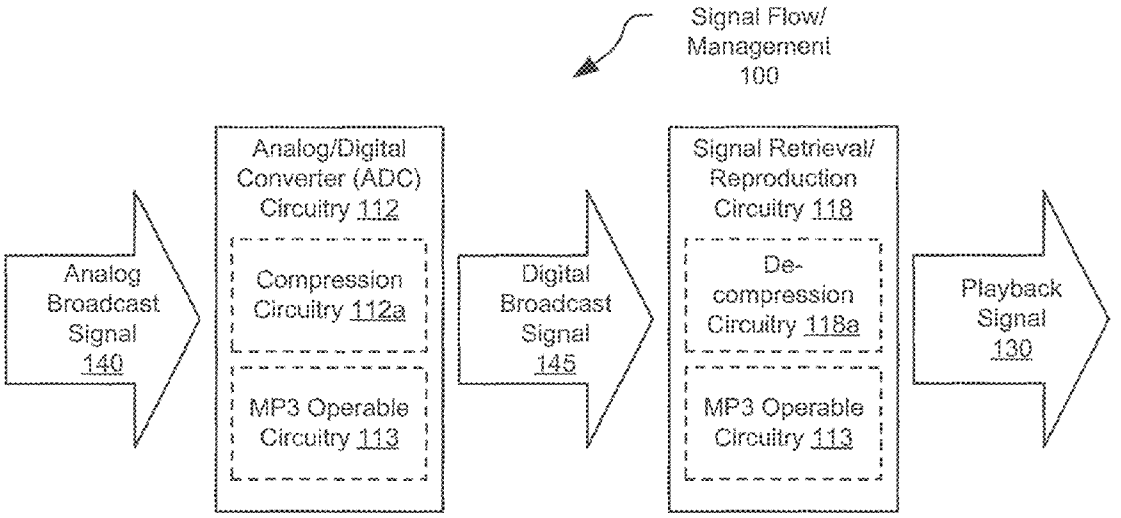
CPC ***H04N 21/812*** (2013.01); ***H04N 21/4532*** (2013.01)

USPC **725/34**

(57) **ABSTRACT**

An audio/video (A/V) processing system may receive a broadcast signal that includes commercials. The system may detect a first communication in the broadcast signal and obtain a user commercial type selection. The system may control whether to present the first commercial in the broadcast signal responsive to the user commercial type selection. The system may also determine a commercial placement location for relocating the first commercial within the broadcast signal, which may include a commercial sequence.



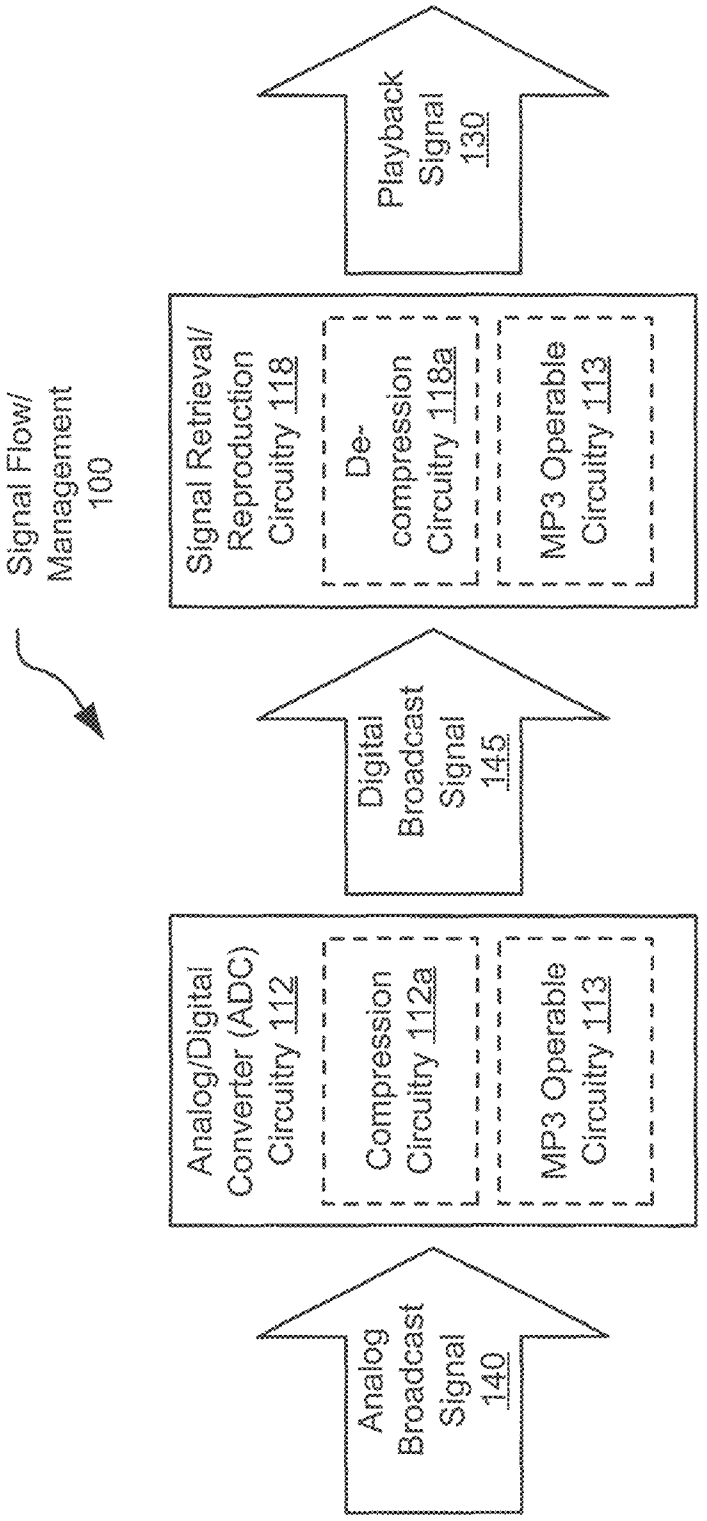

Signal Flow/ Management 100
Analog Broadcast Signal 140
Analog/Digital Converter (ADC) Circuitry 112
Compression Circuitry 112a
MP3 Operable Circuitry 113
Digital Broadcast Signal 145
Signal Retrieval/ Reproduction Circuitry 118
De-compression Circuitry 118a
MP3 Operable Circuitry 113
Playback Signal 130

Fig. 1

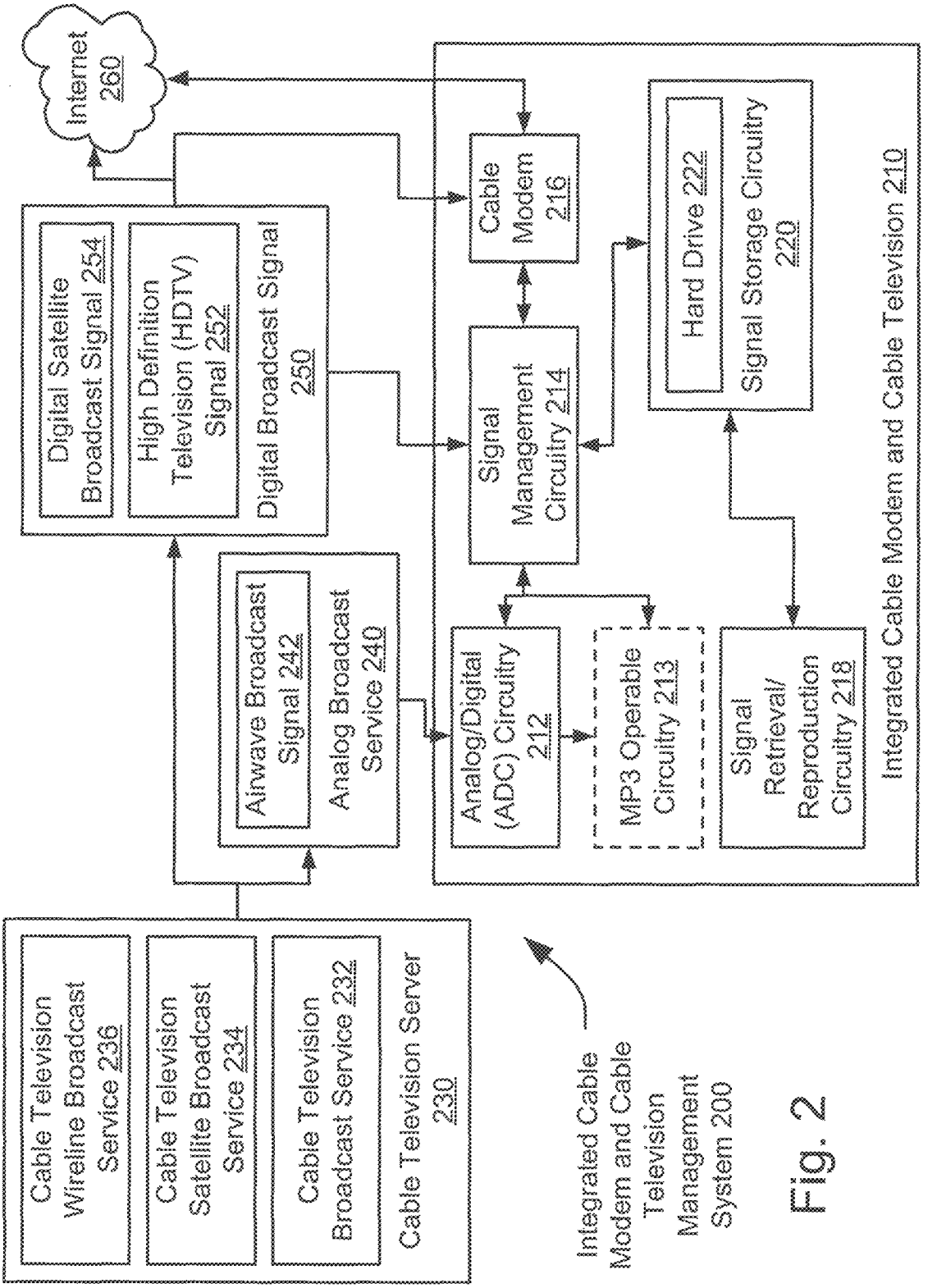

Internet 260
Digital Satellite Broadcast Signal 254
High Definition Television (HDTV) Signal 252
Digital Broadcast Signal 250
Cable Modem 216
Hard Drive 222
Signal Storage Circuitry 220
Signal Management Circuitry 214
Airwave Broadcast Signal 242
Analog Broadcast Service 240
Analog/Digital (ADC) Circuitry 212
MP3 Operable Circuitry 213
Signal Retrieval/ Reproduction Circuitry 218
Integrated Cable Modem and Cable Television 210
Cable Television Wireline Broadcast Service 236
Cable Television Satellite Broadcast Service 234
Cable Television Broadcast Service 232
Cable Television Server 230
Integrated Cable Modem and Cable Television Management System 200

Fig. 2

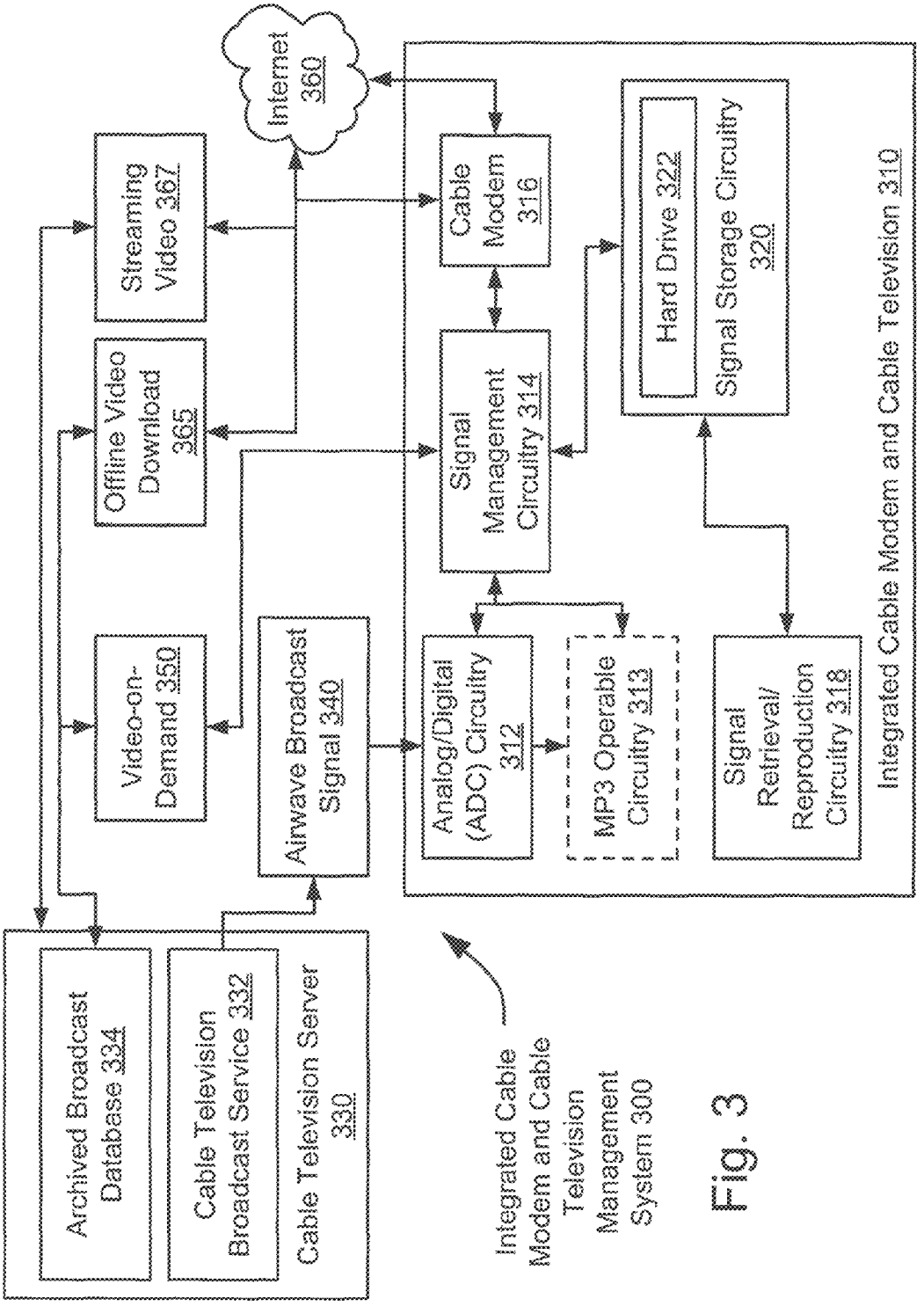

Internet 360
Streaming Video 367
Offline Video Download 365
Video-on-Demand 350
Airwave Broadcast Signal 340
Cable Modem 316
Signal Management Circuitry 314
Analog/Digital (ADC) Circuitry 312
MP3 Operable Circuitry 313
Hard Drive 322
Signal Storage Circuitry 320
Signal Retrieval/ Reproduction Circuitry 318
Integrated Cable Modem and Cable Television 310
Archived Broadcast Database 334
Cable Television Broadcast Service 332
Cable Television Server 330
Integrated Cable Modem and Cable Television Management System 300

Fig. 3

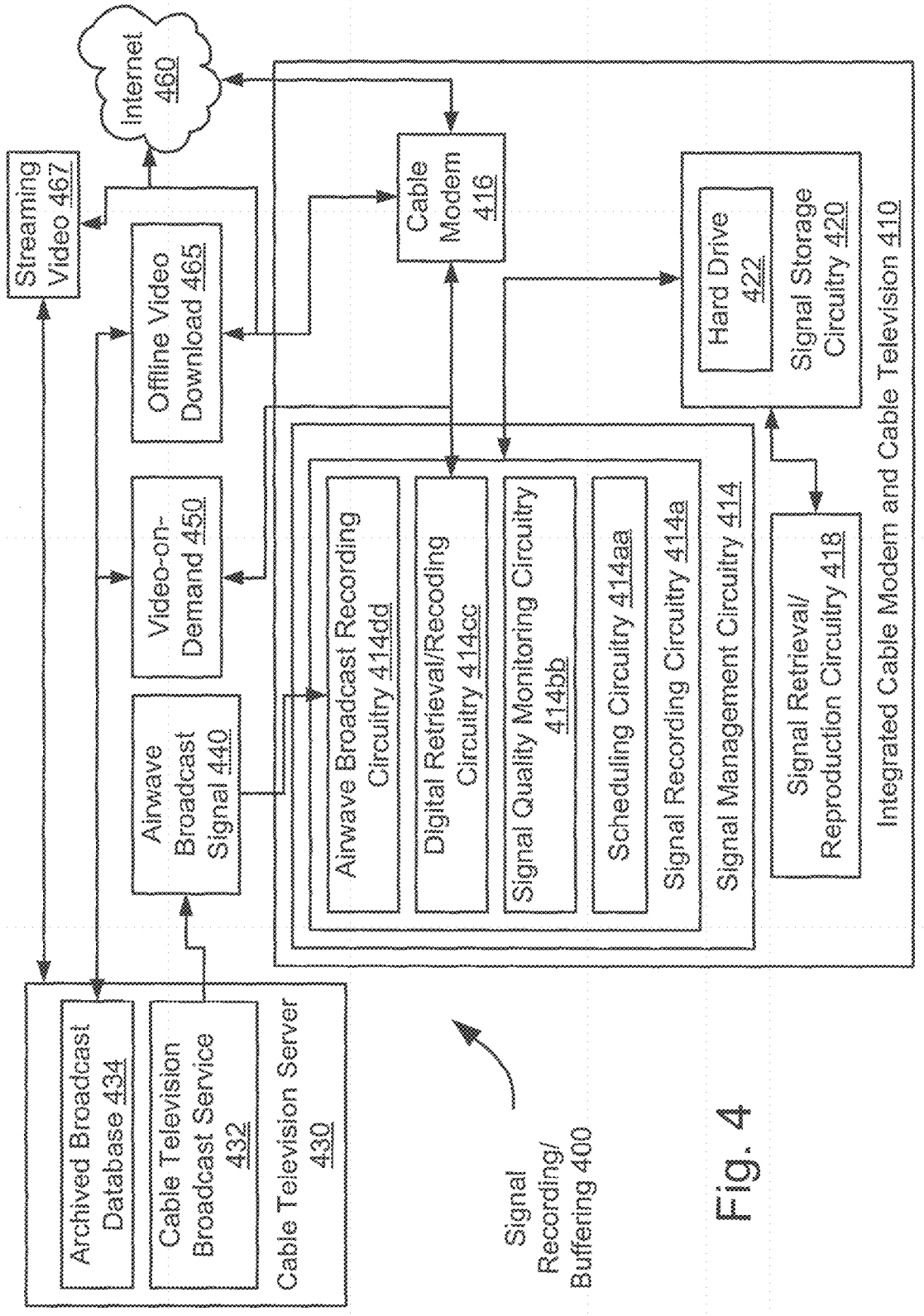

Internet 460
Streaming Video 467
Offline Video Download 465
Cable Modem 416
Video-on-Demand 450
Airwave Broadcast Signal 440
Hard Drive 422
Signal Storage Circuitry 420
Airwave Broadcast Recording Circuitry 414dd
Digital Retrieval/Recoding Circuitry 414cc
Signal Quality Monitoring Circuitry 414bb
Scheduling Circuitry 414aa
Signal Recording Circuitry 414a
Signal Management Circuitry 414
Signal Retrieval/ Reproduction Circuitry 418
Integrated Cable Modem and Cable Television 410
Archived Broadcast Database 434
Cable Television Broadcast Service 432
Cable Television Server 430
Signal Recording/ Buffering 400

Fig. 4

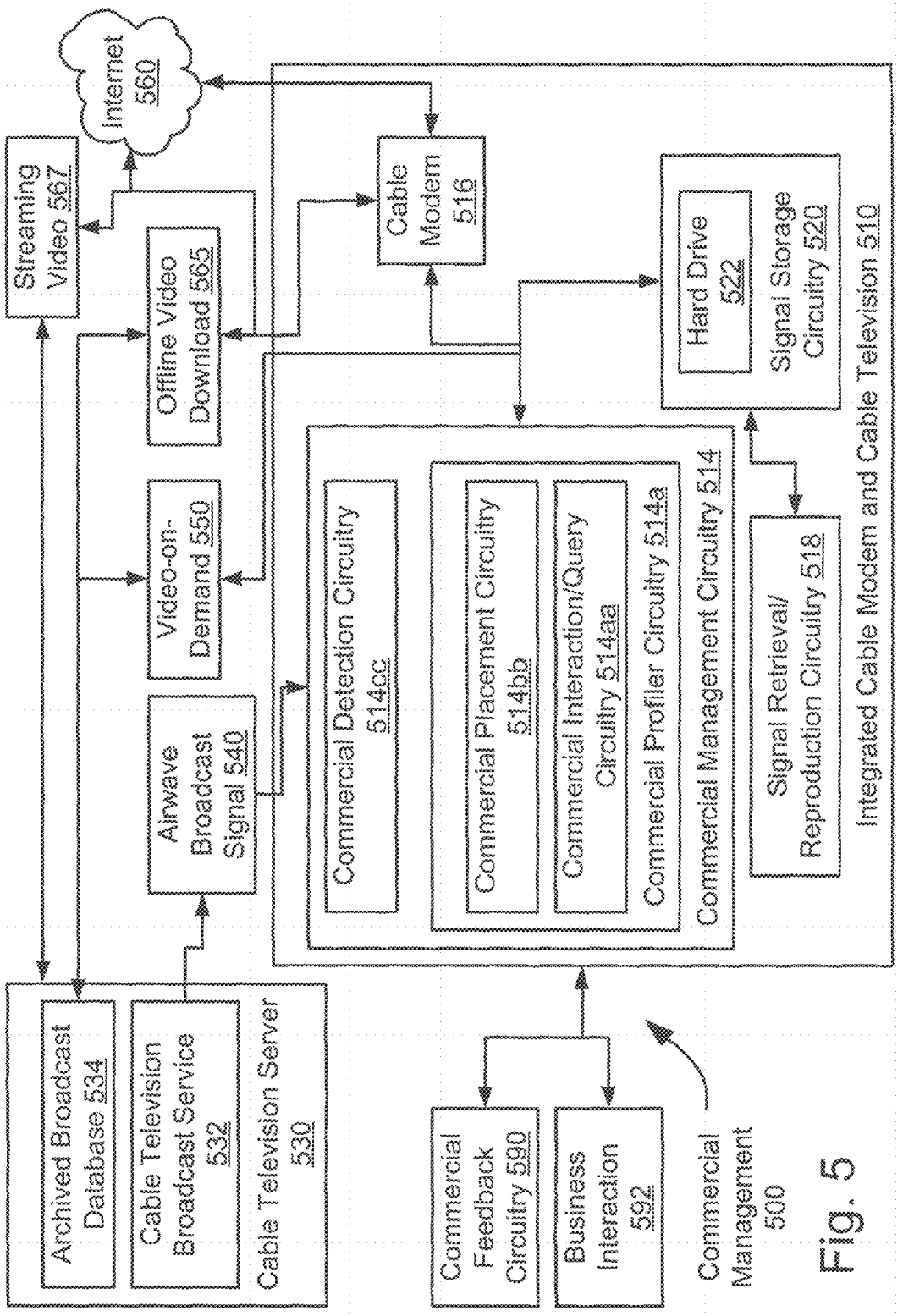

Internet 560
Streaming Video 567
Offline Video Download 565
Video-on-Demand 550
Airwave Broadcast Signal 540
Cable Modem 516
Hard Drive 522
Signal Storage Circuitry 520
Commercial Detection Circuitry 514cc
Commercial Placement Circuitry 514bb
Commercial Interaction/Query Circuitry 514aa
Commercial Profiler Circuitry 514a
Commercial Management Circuitry 514
Signal Retrieval/ Reproduction Circuitry 518
Integrated Cable Modem and Cable Television 510
Archived Broadcast Database 534
Cable Television Broadcast Service 532
Cable Television Server 530
Commercial Feedback Circuitry 590
Business Interaction 592
Commercial Management 500

Fig. 5

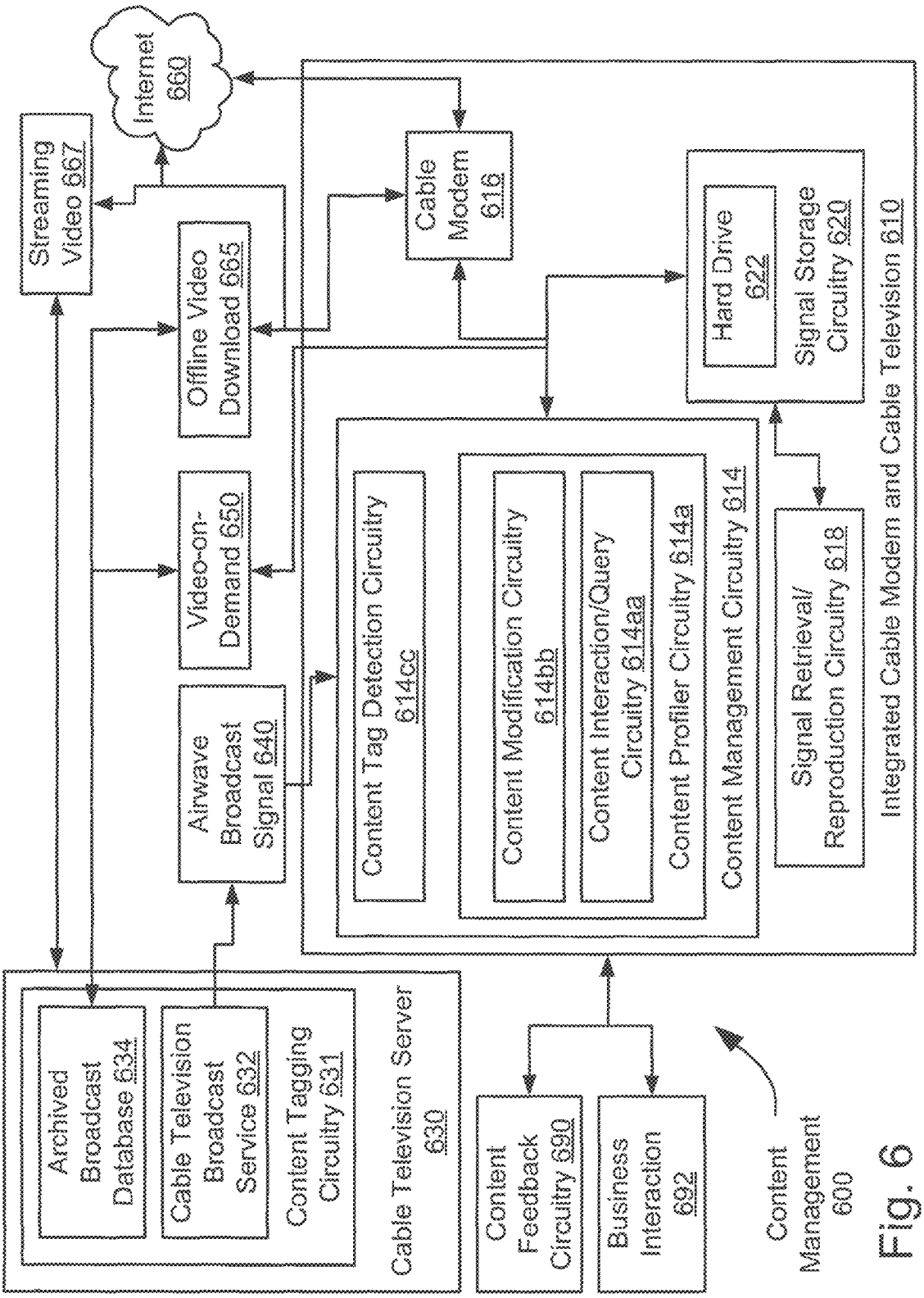

Internet 660
Streaming Video 667
Offline Video Download 665
Cable Modem 616
Video-on-Demand 650
Airwave Broadcast Signal 640
Content Tag Detection Circuitry 614cc
Content Modification Circuitry 614bb
Content Interaction/Query Circuitry 614aa
Content Profiler Circuitry 614a
Content Management Circuitry 614
Signal Retrieval/ Reproduction Circuitry 618
Hard Drive 622
Signal Storage Circuitry 620
Integrated Cable Modem and Cable Television 610
Archived Broadcast Database 634
Cable Television Broadcast Service 632
Content Tagging Circuitry 631
Cable Television Server 630
Content Feedback Circuitry 690
Business Interaction 692
Content Management 600

Fig. 6

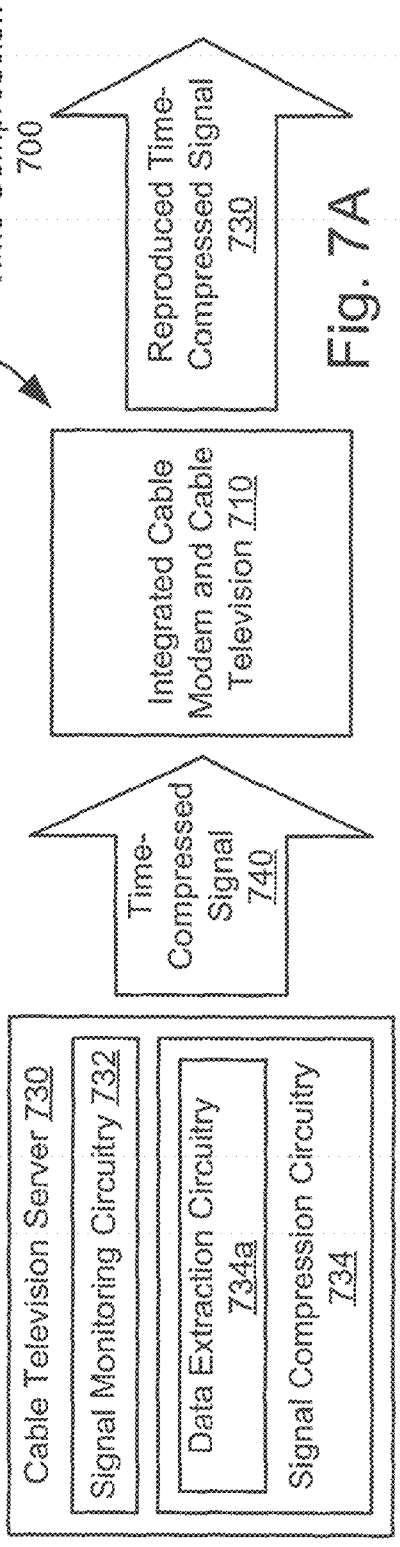

Cable Television Server 730
Signal Monitoring Circuitry 732
Data Extraction Circuitry 734a
Signal Compression Circuitry 734
Time-Compressed Signal 740
Integrated Cable Modem and Cable Television 710
Time Compression 700
Reproduced Time-Compressed Signal 730

Fig. 7A

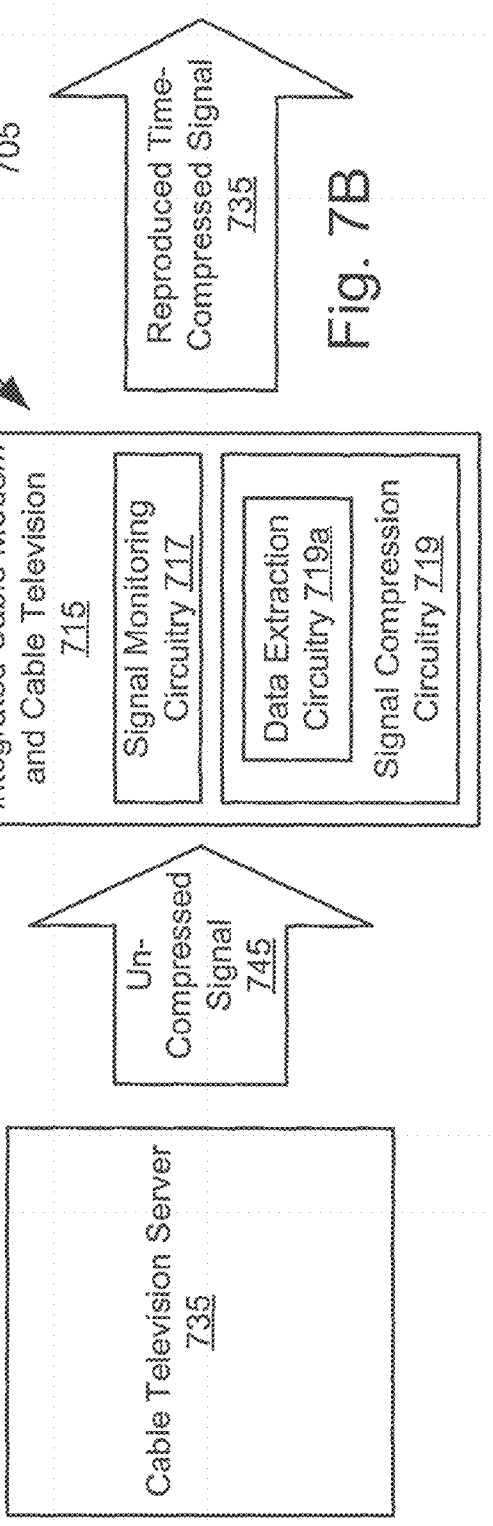

Cable Television Server 735
Un-Compressed Signal 745
Integrated Cable Modem and Cable Television 715
Signal Monitoring Circuitry 717
Data Extraction Circuitry 719a
Signal Compression Circuitry 719
Time Compression 705
Reproduced Time-Compressed Signal 735

Fig. 7B

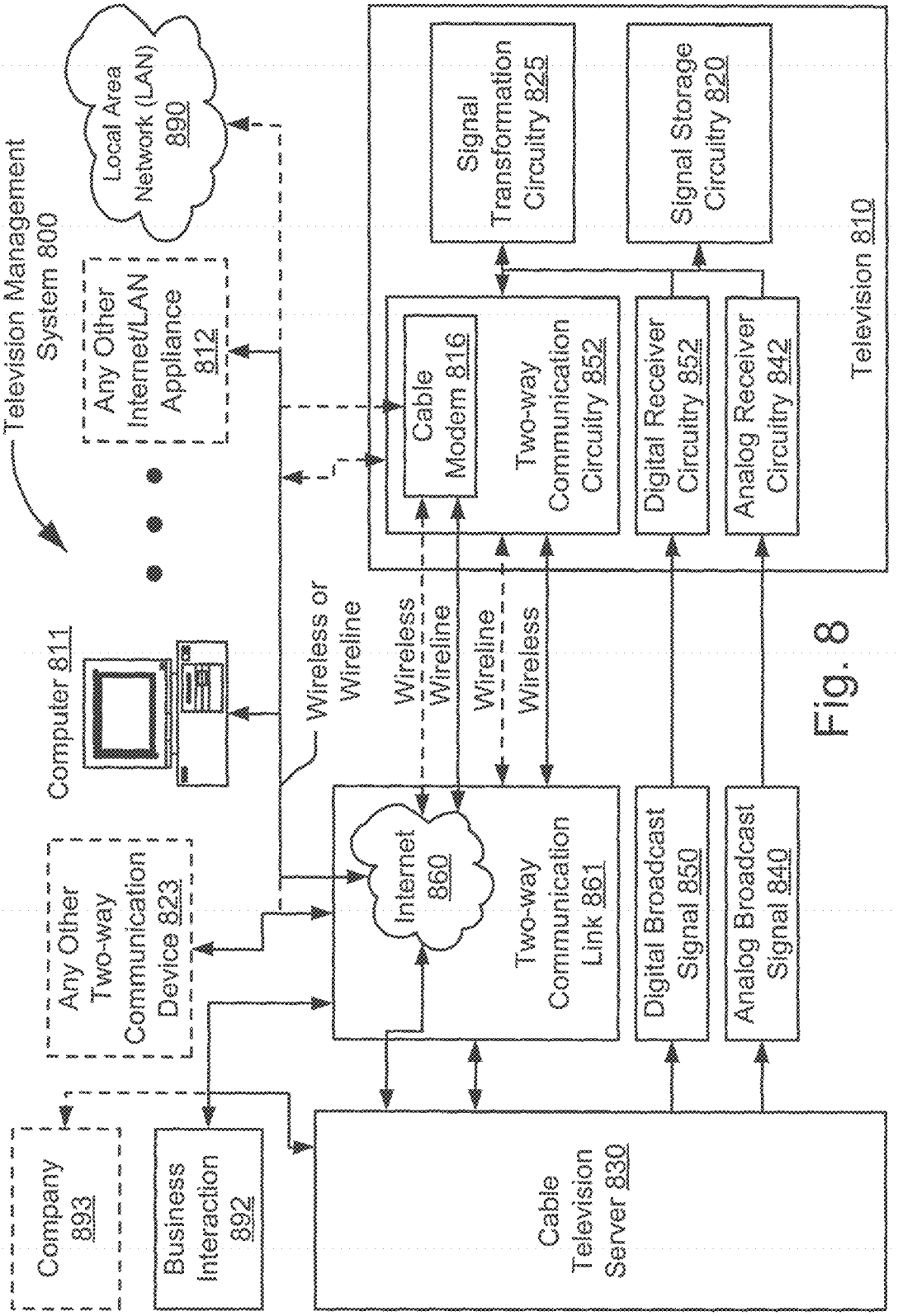

Television Management System 800
Local Area Network (LAN) 890
Any Other Internet/LAN Appliance 812
Computer 811
Any Other Two-way Communication Device 823
Company 893
Business Interaction 892
Wireless or Wireline
Wireless
Wireline
Wireline
Wireless
Internet 860
Two-way Communication Link 861
Digital Broadcast Signal 850
Analog Broadcast Signal 840
Cable Television Server 830
Television 810
Signal Transformation Circuitry 825
Signal Storage Circuitry 820
Cable Modem 816
Two-way Communication Circuitry 852
Digital Receiver Circuitry 852
Analog Receiver Circuitry 842

Fig. 8

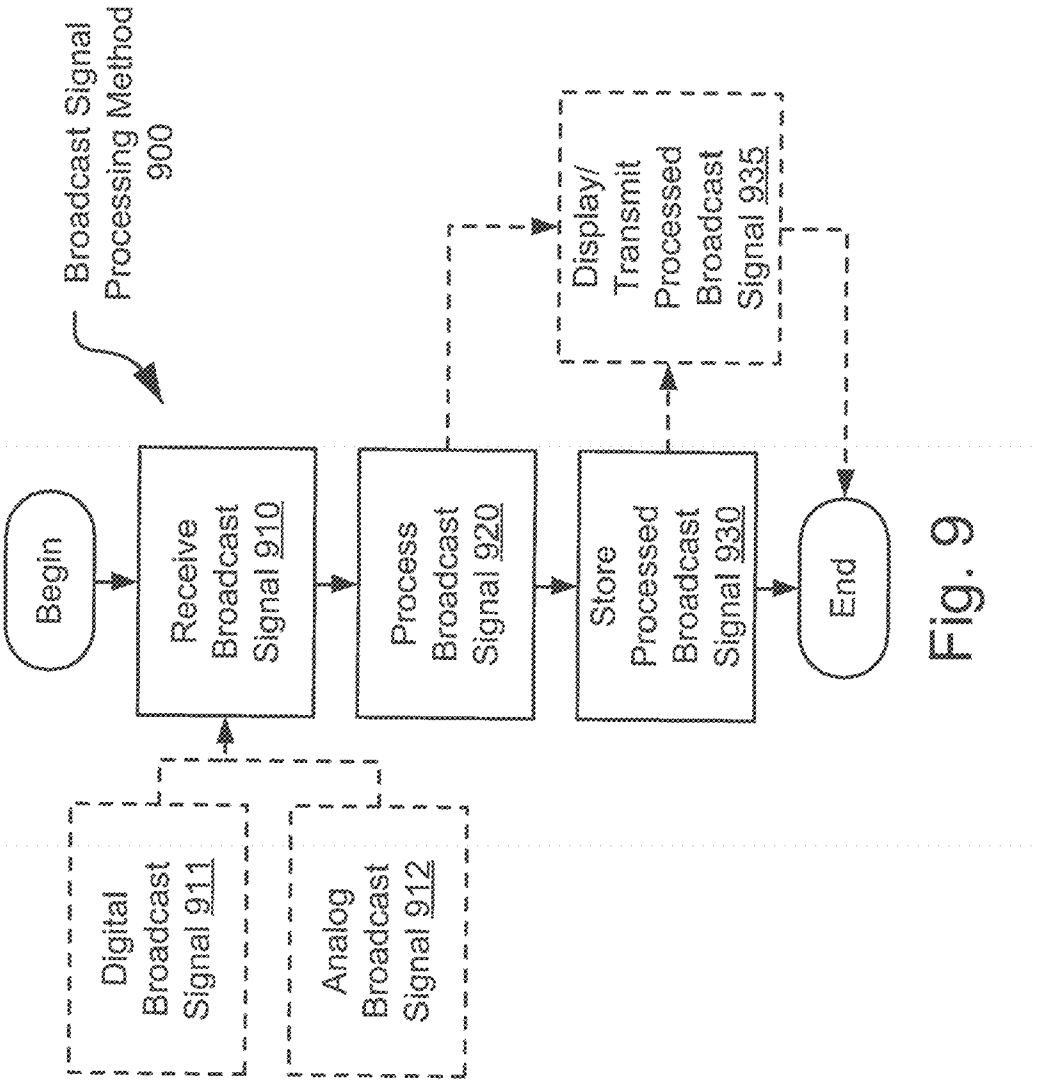

Broadcast Signal Processing Method 900
Begin
Receive Broadcast Signal 910
Process Broadcast Signal 920
Store Processed Broadcast Signal 930
End
Display/ Transmit Processed Broadcast Signal 935
Digital Broadcast Signal 911
Analog Broadcast Signal 912

Fig. 9

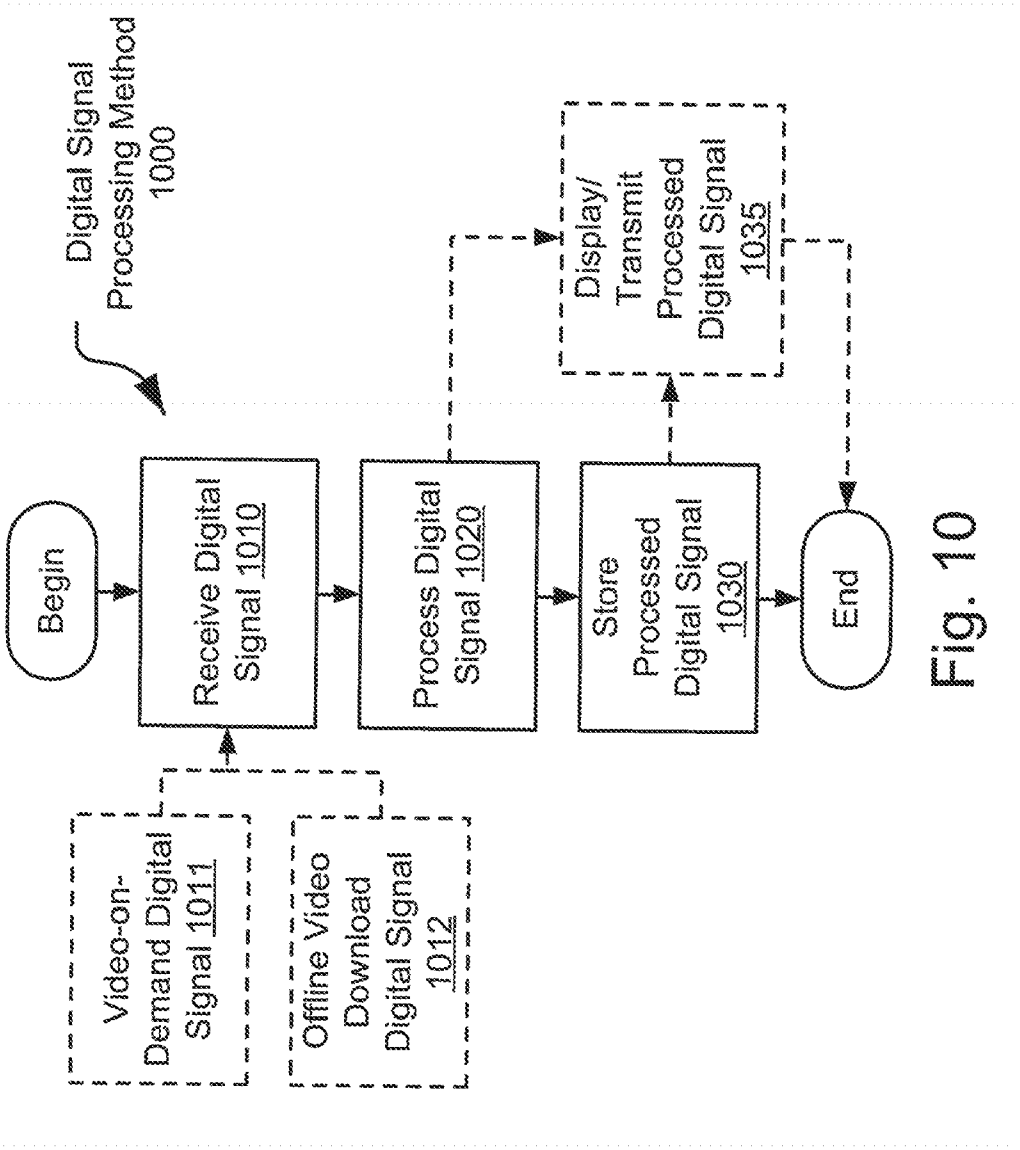

Digital Signal Processing Method 1000
Begin
Receive Digital Signal 1010
Process Digital Signal 1020
Store Processed Digital Signal 1030
End
Display/ Transmit Processed Digital Signal 1035
Video-on-Demand Digital Signal 1011
Offline Video Download Digital Signal 1012

Fig. 10

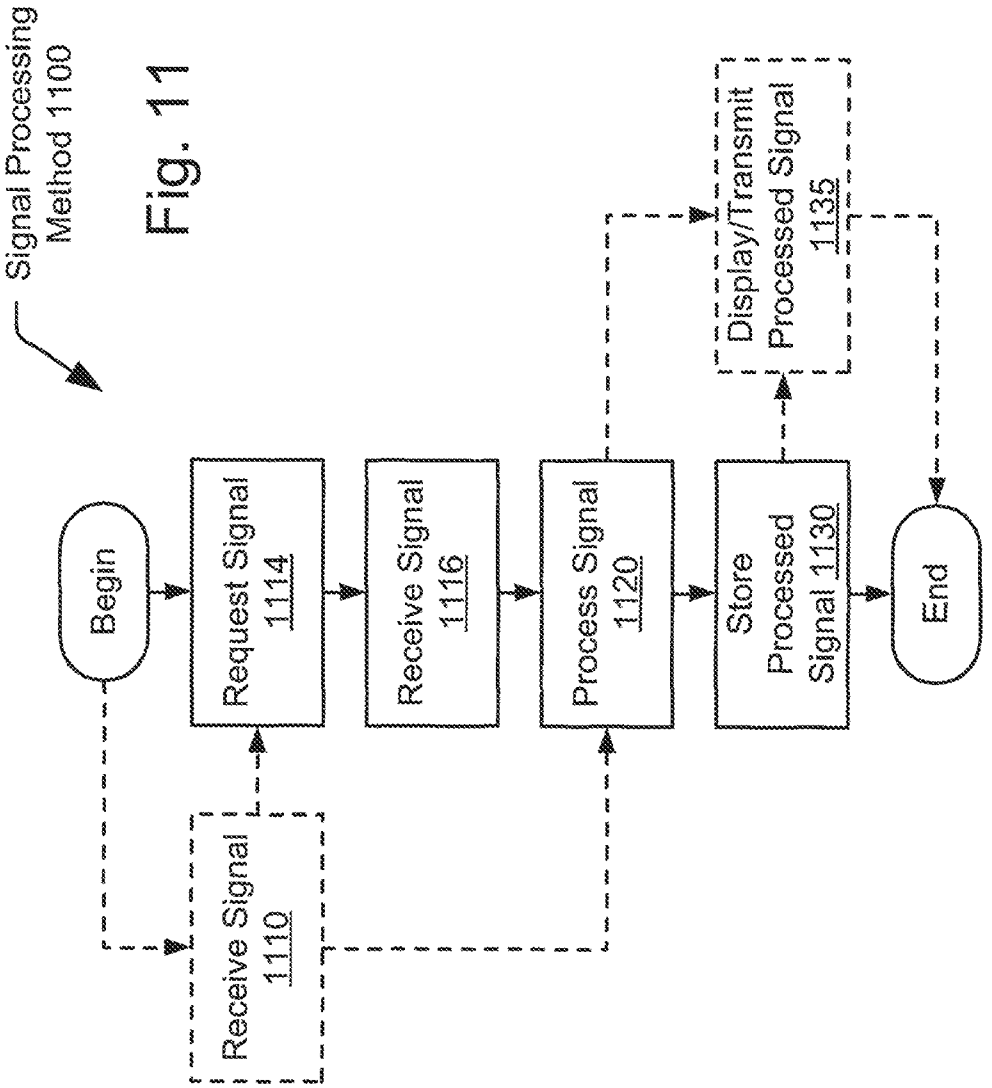

Signal Processing Method 1100
Begin
Receive Signal 1110
Request Signal 1114
Receive Signal 1116
Process Signal 1120
Store Processed Signal 1130
Display/Transmit Processed Signal 1135
End

Fig. 11

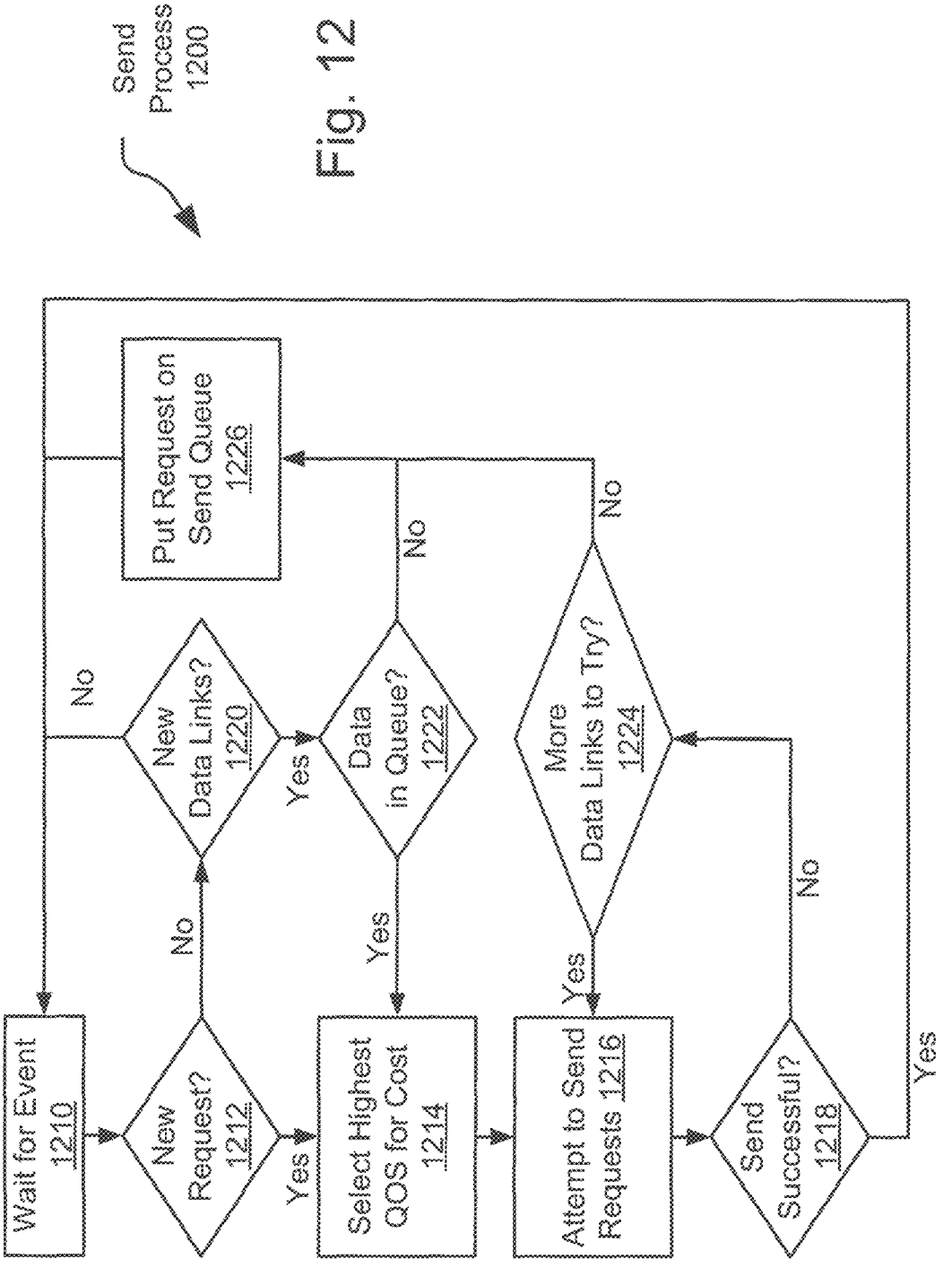

Send Process 1200
Wait for Event 1210
New Request? 1212
No
Yes
New Data Links? 1220
No
Yes
Data in Queue? 1222
No
Yes
More Data Links to Try? 1224
No
Yes
Select Highest QOS for Cost 1214
Attempt to Send Requests 1216
Send Successful? 1218
No
Yes
Put Request on Send Queue 1226

Fig. 12

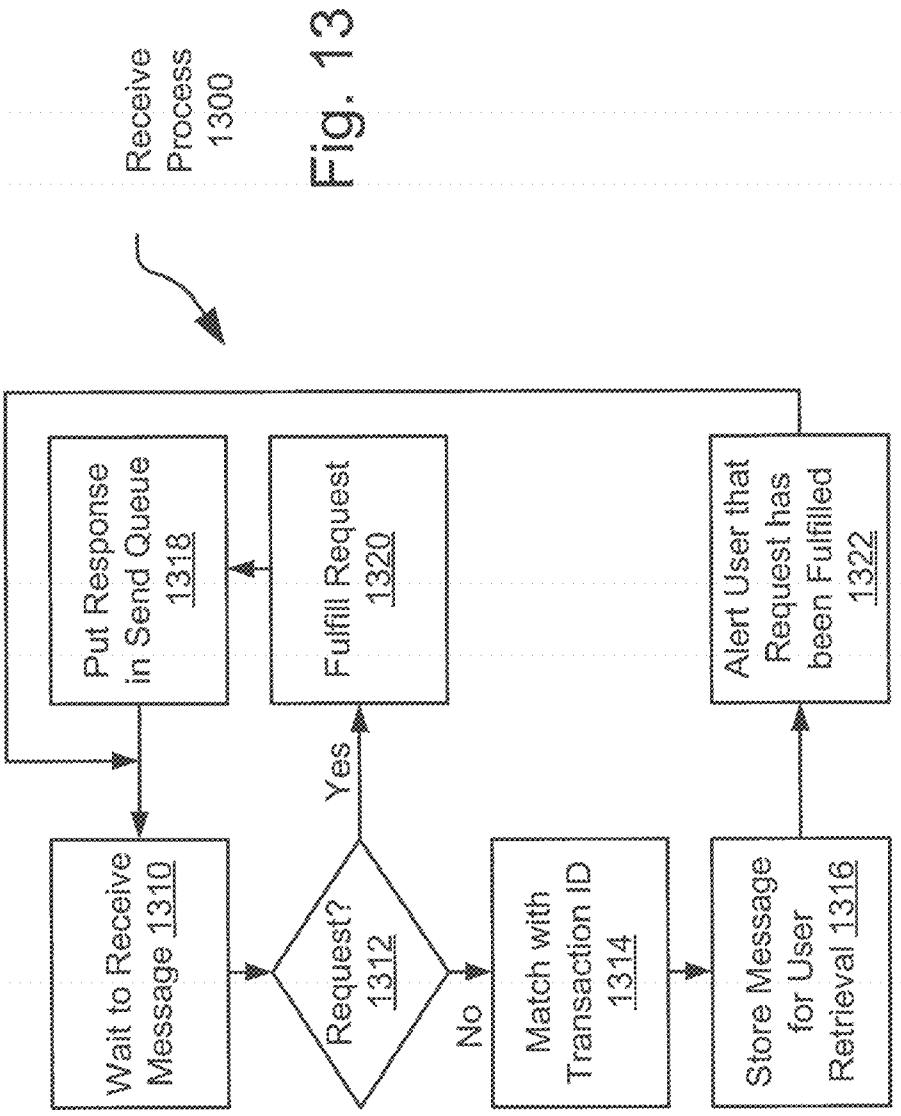

Receive Process 1300
Wait to Receive Message 1310
Request? 1312
Yes
No
Fulfill Request 1320
Put Response in Send Queue 1318
Match with Transaction ID 1314
Store Message for User Retrieval 1316
Alert User that Request has been Fulfilled 1322

Fig. 13

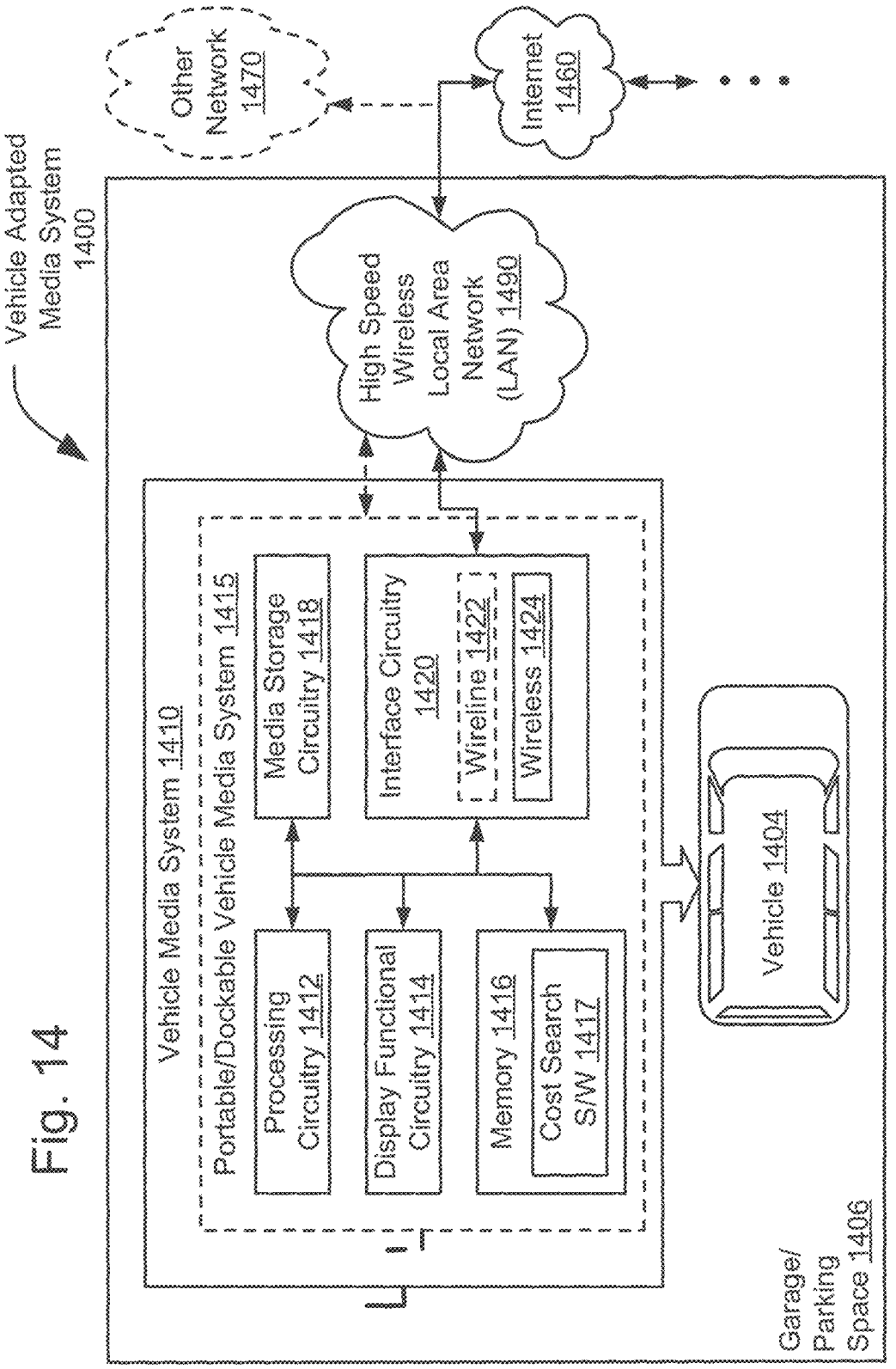

Vehicle Adapted Media System 1400
Other Network 1470
Internet 1460
High Speed Wireless Local Area Network (LAN) 1490
Vehicle Media System 1410
Portable/Dockable Vehicle Media System 1415
Processing Circuitry 1412
Media Storage Circuitry 1418
Interface Circuitry 1420
Wireline 1422
Wireless 1424
Display Functional Circuitry 1414
Memory 1416
Cost Search S/W 1417
Vehicle 1404
Garage/ Parking Space 1406

Fig. 14

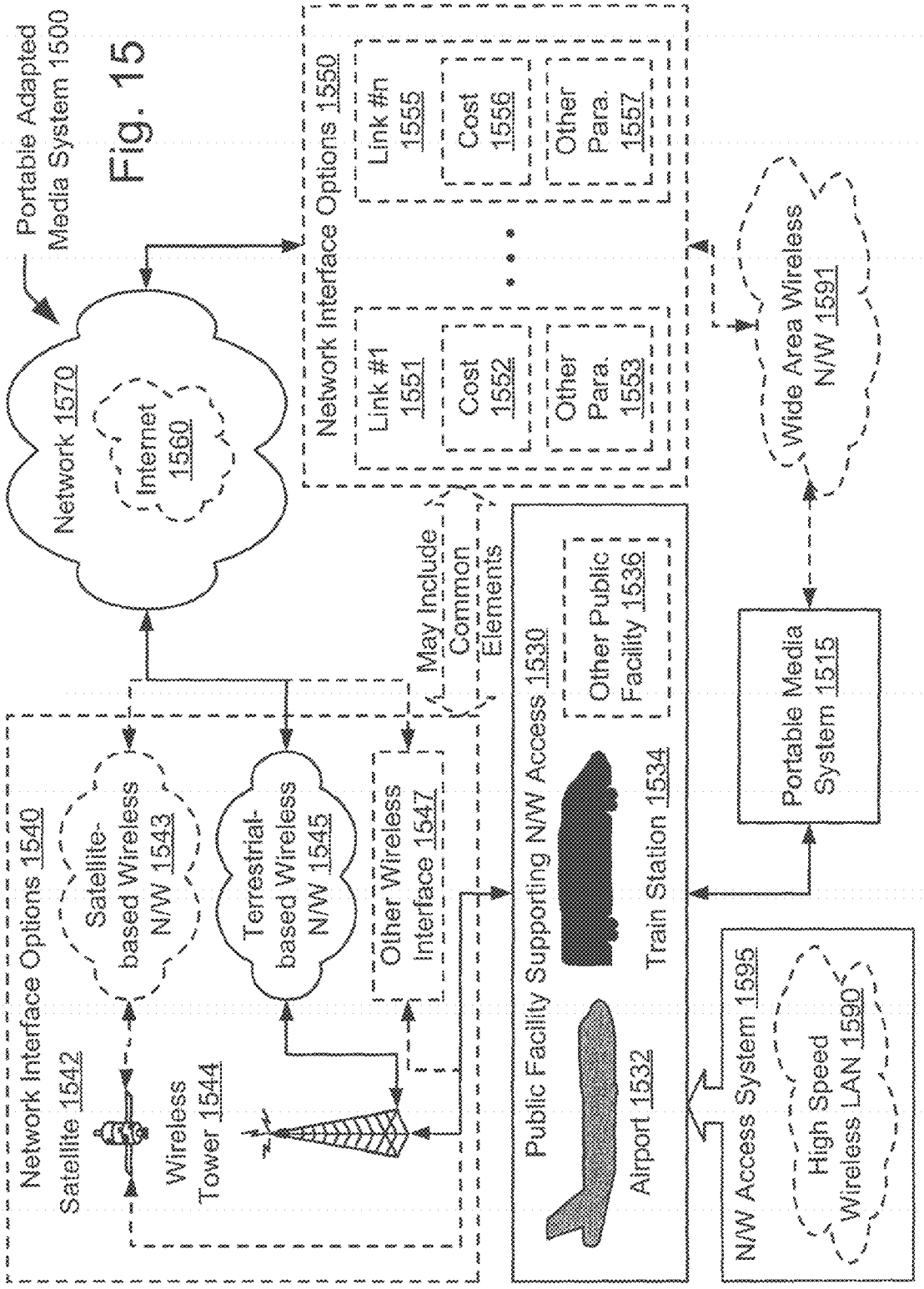
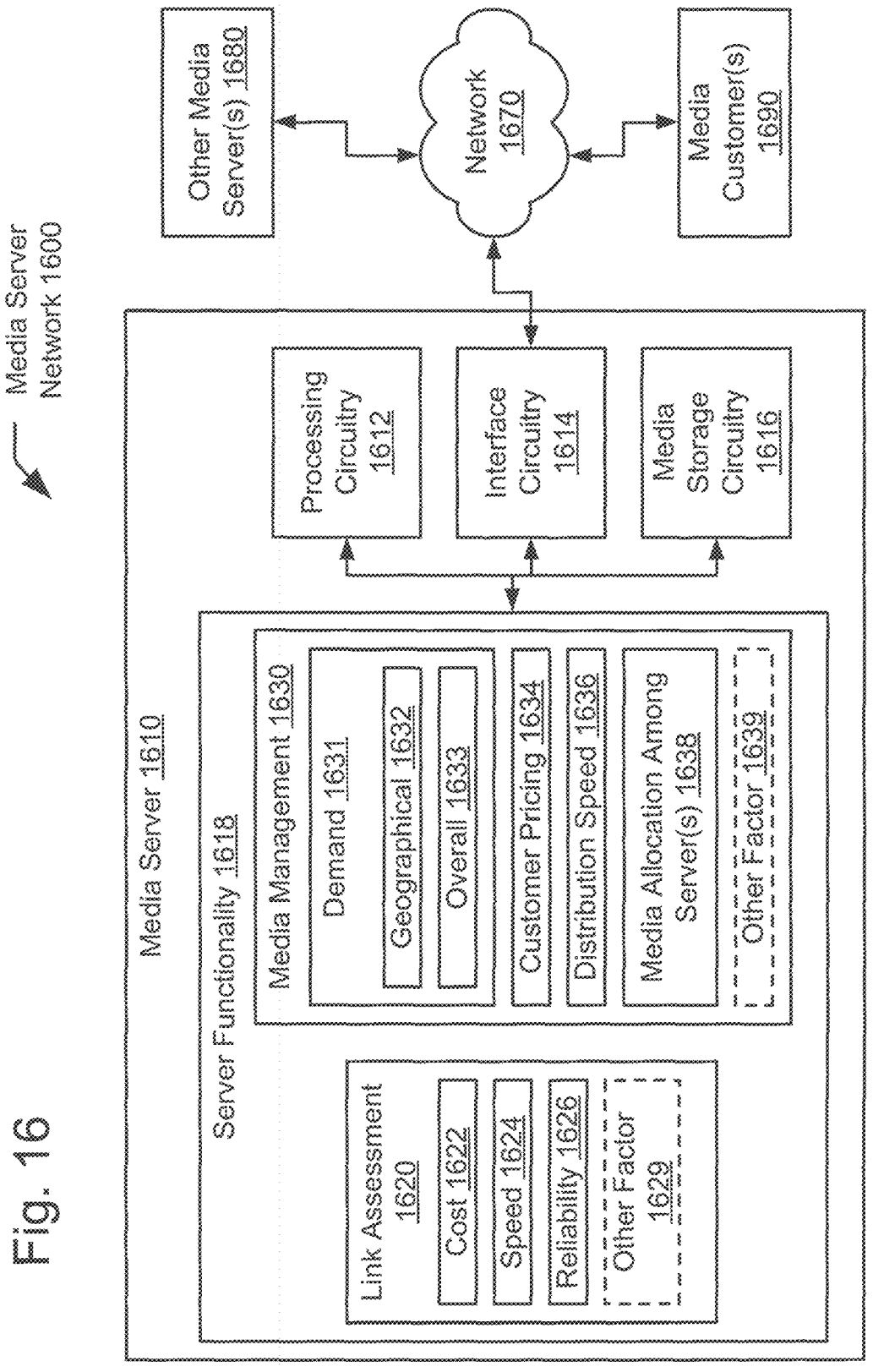

Portable Adapted Media System 1500
Network 1570
Internet 1560
Network Interface Options 1550
Link #1 1551
Cost 1552
Other Para. 1553
Link #n 1555
Cost 1556
Other Para. 1557
Wide Area Wireless N/W 1591
Network Interface Options 1540
Satellite 1542
Satellite-based Wireless N/W 1543
Wireless Tower 1544
Terrestrial-based Wireless N/W 1545
Other Wireless Interface 1547
May Include Common Elements
Public Facility Supporting N/W Access 1530
Other Public Facility 1536
Airport 1532
Train Station 1534
Portable Media System 1515
N/W Access System 1595
High Speed Wireless LAN 1590

Fig. 15

Fig. 16


Media Server Network 1600
Other Media Server(s) 1680
Network 1670
Media Customer(s) 1690
Media Server 1610
Processing Circuitry 1612
Interface Circuitry 1614
Media Storage Circuitry 1616
Server Functionality 1618
Media Management 1630
Demand 1631
Geographical 1632
Overall 1633
Customer Pricing 1634
Distribution Speed 1636
Media Allocation Among Server(s) 1638
Other Factor 1639
Link Assessment 1620
Cost 1622
Speed 1624
Reliability 1626
Other Factor 1629

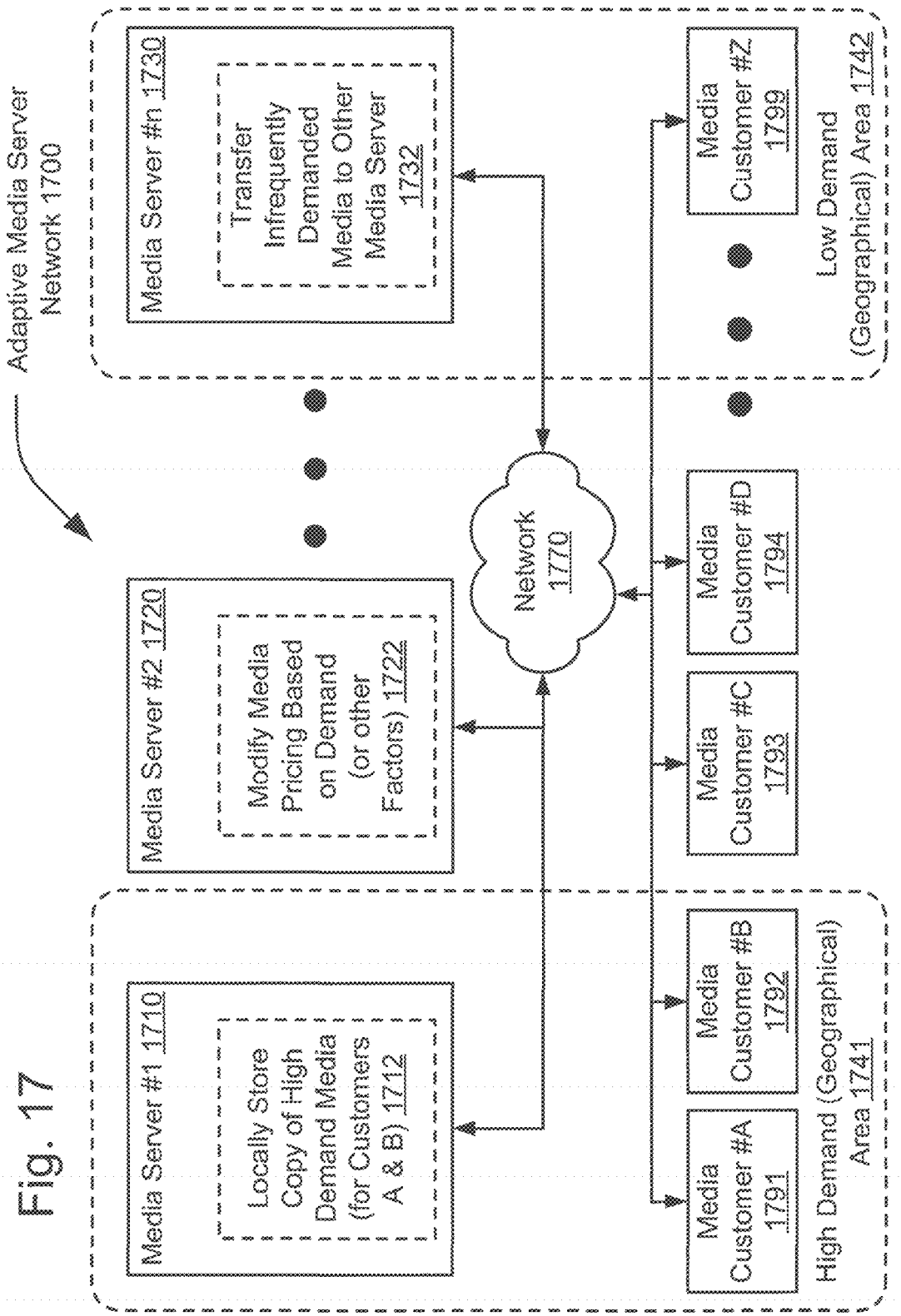

Adaptive Media Server Network 1700
Media Server #1 1710
Locally Store Copy of High Demand Media (for Customers A & B) 1712
Media Server #2 1720
Modify Media Pricing Based on Demand (or other Factors) 1722
Media Server #n 1730
Transfer Infrequently Demanded Media to Other Media Server 1732
Network 1770
Media Customer #A 1791
Media Customer #B 1792
Media Customer #C 1793
Media Customer #D 1794
Media Customer #Z 1799
High Demand (Geographical) Area 1741
Low Demand (Geographical) Area 1742

Fig. 17

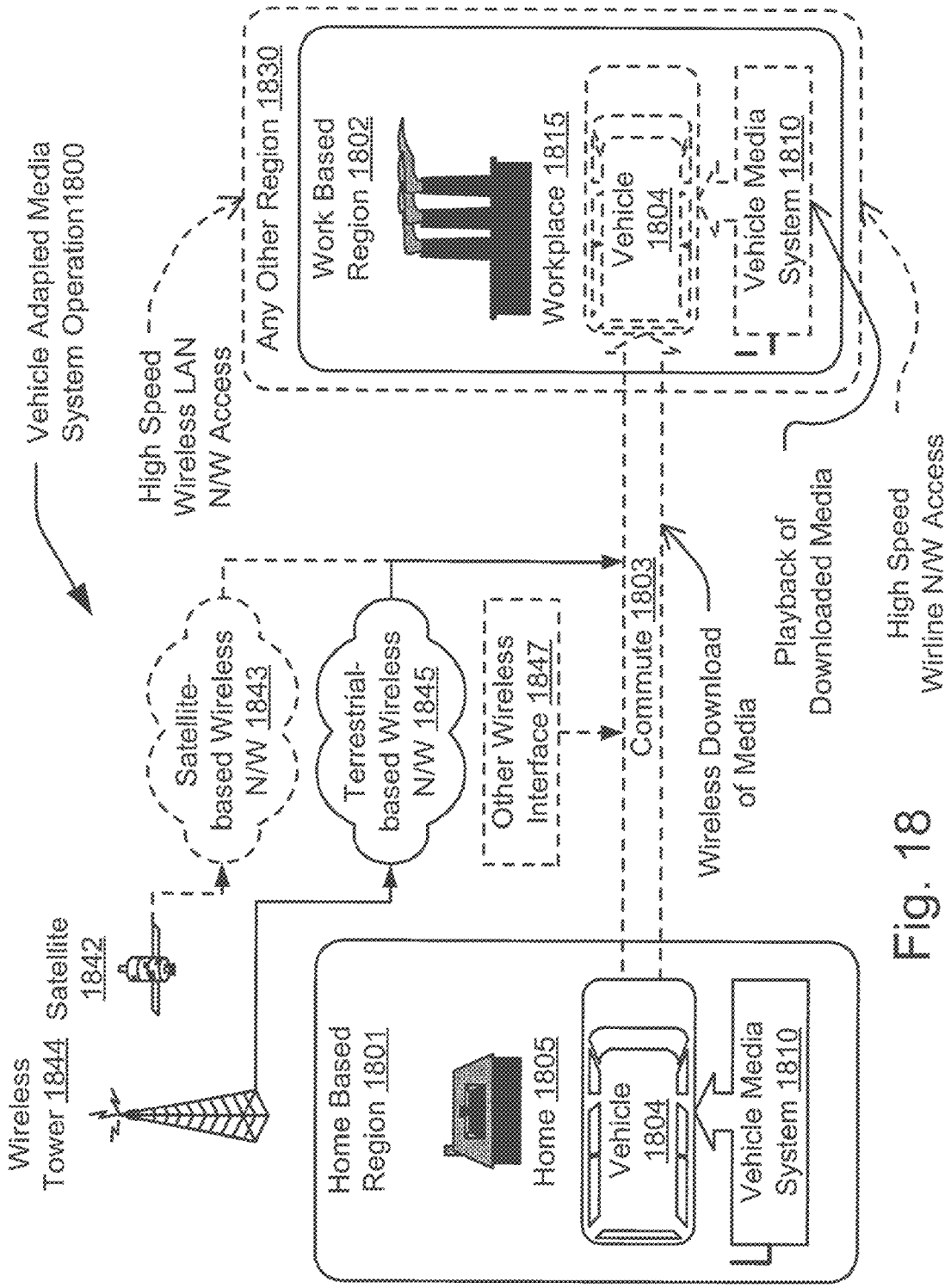

Vehicle Adapted Media System Operation 1800
Wireless Tower 1844
Satellite 1842
Satellite-based Wireless N/W 1843
Terrestrial-based Wireless N/W 1845
Other Wireless Interface 1847
High Speed Wireless LAN N/W Access
Any Other Region 1830
Work Based Region 1802
Workplace 1815
Vehicle 1804
Vehicle Media System 1810
Commute 1803
Wireless Download of Media
Playback of Downloaded Media
High Speed Wirline N/W Access
Home Based Region 1801
Home 1805
Vehicle 1804
Vehicle Media System 1810

Fig. 18

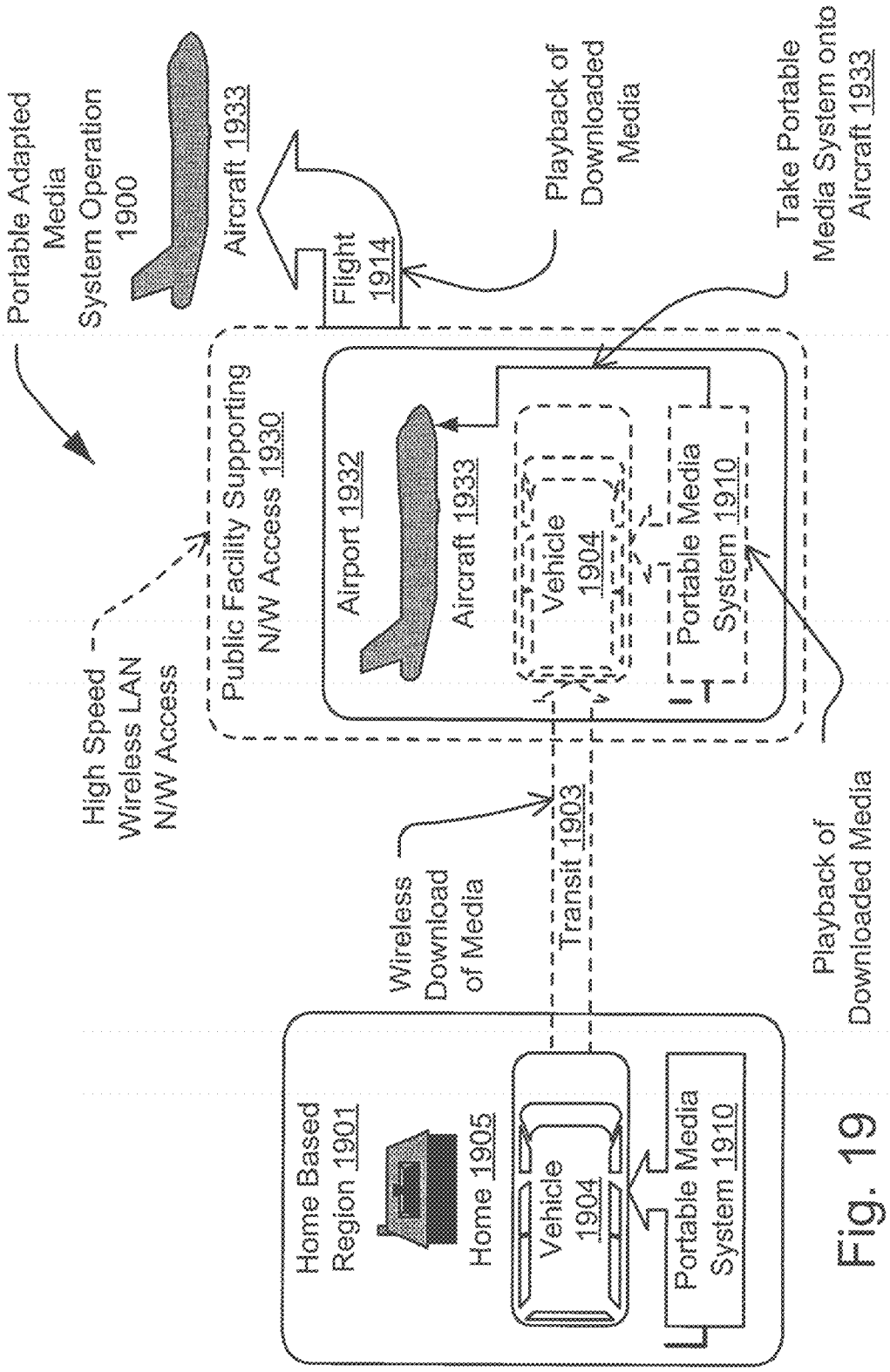

Portable Adapted Media System Operation 1900
Aircraft 1933
Flight 1914
Playback of Downloaded Media
Take Portable Media System onto Aircraft 1933
High Speed Wireless LAN N/W Access
Public Facility Supporting N/W Access 1930
Airport 1932
Aircraft 1933
Vehicle 1904
Portable Media System 1910
Wireless Download of Media
Transit 1903
Playback of Downloaded Media
Home Based Region 1901
Home 1905
Vehicle 1904
Portable Media System 1910

Fig. 19

INTEGRATED CABLE MODEM AND CABLE TELEVISION MANAGEMENT SYSTEM

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application is a divisional of U.S. patent application Ser. No. 09/954,520 entitled "INTEGRATED CABLE TELEVISION MANAGEMENT SYSTEM, filed Sep. 17, 2001, which is a continuation-in-part of U.S. patent application Ser. No. 09/805,589 entitled "INTEGRATED CABLE MODEM AND CABLE TELEVISION MANAGEMENT SYSTEM," filed Mar. 13, 2001, which in turn claims the benefit under 35 U.S.C. 119(e) of provisional application for patent No. 60/188,779 filed Mar. 13, 2000. All of the above applications are hereby incorporated herein by reference in their entirety, including any drawings and appendices, and are made part of the present U.S. Patent Application for all purposes.

[0002] The following U.S. Patents are hereby incorporated herein by reference in their entirety, including any drawings and appendices, and are made part of the present U.S. Patent Application for all purposes:

[0003] 1) U.S. Pat. No. 5,790,536, entitled "HIERARCHICAL COMMUNICATION SYSTEM PROVIDING INTELLIGENT DATA, PROGRAM AND PROCESSING MIGRATION," filed Jun. 7, 1995 and issued Aug. 4, 1998.

[0004] 2) U.S. Pat. No. 5,726,984, entitled "HIERARCHICAL DATA COLLECTION NETWORK SUPPORTING PACKETIZED VOICE COMMUNICATIONS AMONG WIRELESS TERMINALS AND TELEPHONES," filed Oct. 5, 1995 and issued Mar. 10, 1998.

[0005] The following U.S. Patent Application is hereby incorporated herein by reference in its entirety, including any drawings and appendices, and is made part of the present U.S. Patent Application for all purposes:

[0006] 1) U.S. patent application Ser. No. 09/1183,767, entitled "ENHANCED MOBILITY AND ADDRESS RESOLUTION IN A WIRELESS PREMISES BASED NETWORK," (Attorney Docket No. DN38314RX), filed Oct. 30, 1998.

BACKGROUND

[0007] 1. Technical Field

[0008] The present invention relates generally to audio and video media communication, storage, display, and processing; and, more particularly, it relates to various methods and systems operable to perform communication, storage, and processing of audio and video media within, among, and between various media operable systems including an integrated cable modem and cable television management system that is operable to receive and manage signals via airwave and satellite broadcast, Internet, and dedicated wireline transmission.

[0009] 2. Related Art

[0010] Traditional cable television broadcast systems typically include a cable television broadcast center and a television that is operable to receive those broadcast signals. There is typically no communication between the cable television broadcast center and the television other that the receipt of programming of the signal by the television from the cable television broadcast center. Commonly, a user of a television within such a system is limited to the programming that is provided by the cable television broadcast center.

[0011] Further limitations and disadvantages of conventional and traditional systems will become apparent to one of skill in the art through comparison of such systems with the present invention as set forth in the remainder of the present application with reference to the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] A better understanding of the present invention can be obtained when the following detailed description of various exemplary embodiments is considered in conjunction with the following drawings.

[0013] FIG. **1** is a system diagram illustrating an embodiment of a signal flow/management that is performed in accordance with certain aspects of the present invention.

[0014] FIG. **2** is a system diagram illustrating an embodiment of an integrated cable modem and cable television management system built in accordance with certain aspects of the present invention.

[0015] FIG. **3** is a system diagram illustrating another embodiment of an integrated cable modem and cable television management system built in accordance with certain aspects of the present invention.

[0016] FIG. **4** is a system diagram illustrating an embodiment of a signal recording/buffering system built in accordance with certain aspects of the present invention.

[0017] FIG. **5** is a system diagram illustrating an embodiment of a commercial management system built in accordance with certain aspects of the present invention.

[0018] FIG. **6** is a system diagram illustrating an embodiment of a content management system built in accordance with certain aspects of the present invention.

[0019] FIG. **7**A is a system diagram illustrating an embodiment of a time compression system built in accordance with certain aspects of the present invention.

[0020] FIG. **7**B is a system diagram illustrating another embodiment of a time compression system built in accordance with certain aspects of the present invention.

[0021] FIG. **8** is a system diagram illustrating an embodiment of a television management system built in accordance with certain aspects of the present invention.

[0022] FIG. **9** is a functional block diagram illustrating an embodiment of a broadcast signal processing method performed in accordance with certain aspects of the present invention.

[0023] FIG. **10** is a functional block diagram illustrating an embodiment of a digital signal processing method performed in accordance with the present invention.

[0024] FIG. **11** is a functional block diagram illustrating an embodiment of a signal processing method performed in accordance with certain aspects of the present invention.

[0025] FIG. **12** is a functional block diagram illustrating a send process performed using certain aspects of the present invention.

[0026] FIG. **13** is a functional block diagram illustrating a receive process performed using certain aspects of the present invention.

[0027] FIG. **14** is a system diagram illustrating an embodiment of a vehicle adapted media system that is built in accordance with certain aspects of the present invention.

[0028] FIG. **15** is a system diagram illustrating an embodiment of a portable adapted media system that is built in accordance with certain aspects of the present invention.

[0029] FIG. **16** is a system diagram illustrating an embodiment of a media server network constructed in accordance with certain aspects of the present invention.

[0030] FIG. **17** is a system diagram illustrating an embodiment of an adaptive media server network that is built in accordance with certain aspects of the present invention.

[0031] FIG. **18** is a system diagram illustrating an embodiment of vehicle adapted media system operation that is performed in accordance with certain aspects of the present invention.

[0032] FIG. **19** is a system diagram illustrating an embodiment of portable adapted media system operation that is performed in accordance with certain aspects of the present invention.

DETAILED DESCRIPTION

[0033] In view of the above detailed description of the present invention and associated drawings, other modifications and variations will now become apparent to those skilled in the art. It should also be apparent that such other modifications and variations may be effected without departing from the spirit and scope of the present invention.

[0034] FIG. **1** is a system diagram illustrating an embodiment of a signal flow/management **100** that is performed in accordance with certain aspects of the present invention. The signal flow/management **100** is illustrative of one manner in which an analog broadcast signal **140** is converted into a playback signal **130**. In some embodiments of the invention, a digital broadcast signal **145** is converted into the playback signal **130**. For those embodiments wherein the analog broadcast signal **140** is converted into the playback signal **130**, an analog to digital converter (ADC) circuitry **112** is operable to receive the analog broadcast signal **140** and perform any requisite operation to convert the analog broadcast signal **140** into the digital broadcast signal **145**. The digital broadcast signal **145** is, in certain embodiments of the invention, contained within an integrated cable modem and cable television management system and its digital format assists in any necessary signal processing on the signal. If desired, the analog to digital converter (ADC) circuitry **112** contains a compression circuitry **112***a* and a motion picture expert group 3 (MP3) operable circuitry **112***b*. Moreover, the analog to digital converter (ADC) circuitry **112** is to transform the analog broadcast signal **140** into the digital broadcast signal **145** wherein the digital broadcast signal **145** wherein the digital broadcast signal **145** is of the motion picture expert group 2 (MPEG2). In other embodiments, the analog broadcast signal **140** is transformed into the MPEG2 standard for reproduction of a signal in high definition television (HDTV) operable systems.

[0035] In other embodiments of the invention, the motion picture expert group 3 (MP3) operable circuitry **112***b* is capable to transform the analog broadcast signal **140** into the digital broadcast signal **145** wherein the digital broadcast signal **145** is of the MP3 format. Also, the compression circuitry **112***a* is operable to perform any signal processing during the conversion of the analog broadcast signal **140** to the digital broadcast signal **145** that would assist in the preservation or conservation of processing and storage resources within an integrated cable modem and cable television management system in accordance with the present invention.

[0036] The digital broadcast signal **145** is passed to a signal retrieval/reproduction circuitry **118** for final conversion into the playback signal **130**. The signal retrieval/reproduction circuitry **118** contains, in certain embodiments of the invention, a de-compression circuitry **118***a* and a motion picture expert group 3 (MP3) operable circuitry **118***b*. The de-compression circuitry **118***a* is used to reconstruct the previously compressed analog broadcast **140**, that is now in the digital broadcast signal **145** format, into a form suitable for playback using any number of devices including a television or an integrated cable modem and cable television management system. Similarly, the motion picture expert group 3 (Mp3) operable circuitry **118***b* is operable to reconstruct and reproduce the previously converted analog broadcast **140**, that is now in the digital broadcast signal **145** MP**3** format, into a form suitable for playback of any MP3 encoded signal. The playback signal **130** is of a form of either video or audio or a combination of video and audio, depending on the original format of the analog broadcast signal **140** or the format of the digital broadcast signal **145**. The motion picture expert group 3 (MP3) standard is known in the art to be amenable to encoding either video or audio data. The signal flow/management **100** is illustrative of a generic overview of the management of signals in either analog or digital format wherein an original signal is received, and any signal processing is performed on the original signal, and the signal is converted into a format capable of being played back using any number of signal playback media including audio playback media, video playback media known in the art of audio and video data signal processing. Throughout the detailed description of the invention, the use and reference of video data or video signals includes both audio and video data as well as audio data individually.

[0037] FIG. **2** is a system diagram illustrating an embodiment of an integrated cable modem and cable television management system **200** built in accordance with certain aspects of the present invention. The integrated cable modem and cable television management system **200**, in its most basic representation, contains a cable television server **230** and an integrated cable modem and cable television **210**. The cable television server **230** contains any number of methods to transmit and provide video and audio broadcast signals. For example, the cable television server **230** includes, among other things, a cable television broadcast service **232**, a cable television satellite broadcast service **234**, and a cable television wireline broadcast service **236**. The cable television server **230** is operable to provide signals in either analog or digital format without departing from the scope and spirit of the invention. For example, the cable television server is operable to provide an analog broadcast signal **240** and a digital broadcast signal **250**. The analog broadcast signal **240** contains an airwave broadcast signal **242** in certain embodiments of the invention. The airwave broadcast signal **242** includes the traditional method of transmitting a broadcast signal from a television tower wherein the signal is transmitted using conventional radio transmission and other electromagnetic frequencies including the ultra high frequency (UHF: 300-3000 MHz) and very high frequency (VHF: 30-300 MHz) frequency spectra known in the art of television airwave broadcast. The analog broadcast signal **240** is provided directly to the integrated cable modem and cable television **210** from the cable television server **230**.

[0038] In addition, the cable television server provides the digital broadcast signal **250** that itself contains any number of signal types having a digital format such as a high definition television (HDTV) signal **252** and a digital satellite broadcast signal **254**. Moreover, the digital broadcast signal **250** is operable to be provided via an Internet **260** path. In such

embodiments, the Internet **260** provides the digital broadcast signal **250** to the integrated cable modem and cable television **210**. Alternatively, the digital broadcast signal **250** is provided directly to the integrated cable modem and cable television **210** without going through the Internet **260**.

[0039] The integrated cable modem and cable television **210** itself contains a number of circuitries to perform the handling of the signal provided by the cable television server **230**, whether the signal be provided as the analog broadcast signal **240** or the digital broadcast signal **250**. In the case when the signal provided is the analog broadcast signal **240**, an analog to digital converter CADC) circuitry **212** within the integrated cable modem and cable television **210** performs the requisite signal processing on the analog broadcast signal **240** to perform any subsequent digital signal processing on the analog broadcast signal **240**, including storage and playback of the analog broadcast signal **240**. If desired, an MP3 operable circuitry **213** is operable in conjunction with the analog to digital converter (ADC) circuitry **212** to convert the analog broadcast signal **240** into a proper digital format.

[0040] The digital format may include a strictly audio signal, such as an "MP3" format, in certain embodiments of the invention. Any other digital format is also included within the scope and spirit of the invention including digital signals having both audio and video content. For example, the MPEG-3 standard is a standard that was originally intended for high definition television (HDTV), but it was later abandoned in favor of MPEG-2. Such standards are also included within the scope and spirit of the invention. The various embodiments of the present invention are operable using any of the MPEG-2, MP3, or generically an MPEG-2/3 standard that operates with the desired digital data format. When the signal provided is the digital broadcast signal **250**, and it is provided via the Internet **260**, it is fed into a cable modem **216** within the integrated cable modem and cable television **210**. Alternatively, the digital broadcast signal **250** is capable of being fed directly into the cable modem **216** in certain embodiments of the invention without having gone through the Internet **260**. In addition, the digital broadcast signal **250** is capable of being fed directly into a signal management circuitry **214** in certain embodiments of the invention.

[0041] The digital broadcast signal **250** is eventually fed into the signal management circuitry **214**, regardless of the path it has taken. In addition, the analog broadcast signal **240** is also fed into the signal management circuitry **214**, regardless of the path it has taken. In addition, the analog broadcast signal **240** is also fed into the signal management circuitry **214**, after having passed through the analog to digital converter (ADC) circuitry **212**. The signal management circuitry **214** is operable to do a variety of functions, several of which are further described later in various embodiments of the invention. The signal management circuitry **214** is operable to pass the broadcast signal, whether it is originally in the form of the analog broadcast signal **240** or the digital broadcast signal **250**, to a signal storage circuitry **220**. The signal storage circuitry **220** contains a hard drive **222** in certain embodiments of the invention. Present technological storage capacities of hard drives is approximately one (1) Giga-byte memory required to store approximately one (1) hour of video signal data. A hard drive of approximately fourteen (14) Giga-byte memory is presently known in the art. A hard drive of close to thirty (30) Giga-byte memory is foreseeable in the near future. Clearly, as the storage capacities of hard drives continues to increase, the total storage of data will increase as well. A signal retrieval/reproduction circuitry **218** is used to take the broadcast signal and reproduce it for an end user. The end user is an individual watching the broadcast signal (video) or listening to the broadcast signal (audio) in certain embodiments of the invention. Alternatively, the end user is additional circuitry that is operable to perform signal processing on the broadcast signal. The signal retrieval/reproduction circuitry **218** includes any reproduction media that is operable to perform reproduction of the broadcast signal in a form suitable for viewing, listening, or additional signal processing in accordance with the present invention.

[0042] The integrated cable modem and cable television management system **200** is operable to receive a broadcast signal in either analog or digital form and to store the broadcast signal using the signal storage circuitry **220**, to perform immediate or delayed playback using the signal retrieval/reproduction circuitry **218**. The integrated cable modem and cable television management system **200** is operable to perform any desired compression on the broadcast signal before storing it in the signal storage circuitry **220** as well.

[0043] FIG. **3** is a system diagram illustrating another embodiment of an integrated cable modem and cable television management system **300** built in accordance with certain aspects of the present invention. The integrated cable modem and cable television management system **300**, in its most basic representation, contains a cable television server **330** and an integrated cable modem and cable television **310**. The cable television server **330** is operable to provide a cable television broadcast service **332** or an archived broadcast database **334**. The archived broadcast database **334** contains, in certain embodiments of the invention, archives of past broadcasts of the cable television server **330**. In even other embodiments of the invention, the archived broadcast database **334** contains the future, planned broadcasts of the cable television server **330**.

[0044] The cable television broadcast service **332** of the cable television server **330** provides an airwave broadcast signal **340** that is fed to the integrated cable modem and cable television **310**. The archived broadcast database **334** of the cable television server **330** provides a signal operable to provide both a video-on-demand **350** and an offline video download **365**. Either of the video-on-demand **350** and the offline video download **365** is operable to be provided to the integrated cable modem and cable television **310** via an Internet **360**. Alternatively, the video-on-demand **350** is operable to be provided directly to the integrated cable modem and cable television **310**.

[0045] In addition, the integrated cable modem and cable television **310** is also operable to perform download and playback of streaming video **367** from the cable television server **330**. The streaming video download **367** includes streaming download and playback of data that has an audio component and a video component as well as solely an audio component or solely a video component as described within various embodiments. As is known in the art of streaming data, a portion of the data may be downloaded to a buffer and the playback being initiated during the time in which the remainder of the streaming data is received. If desired, a portion of executable code, stored within the integrated cable modem and cable television **310**, initiates the streaming video independent of any user interaction; alternatively, some user-interaction is required before the streaming video **367** commences. Also, this streaming video **367** is operable via the

Internet **360** or directly to the cable modem **316** as desired in various embodiments of the invention.

[0046] The integrated cable modem and cable television **310** uses an analog to digital converter (ADC) circuitry **312**, and if desired, an MP**3** operable circuitry **313**, to accommodate the airwave broadcast signal **340** when it is in analog format. The signal is then fed into a signal management circuitry **314**. Similarly, the archived broadcast signal **334**, is fed into the signal management circuitry **314**, after having been received via the Internet **360**, through a cable modem **316**, or fed directly to the signal management circuitry **314** from the video-on-demand **350**.

[0047] The integrated cable modem and cable television **310** uses a signal storage circuitry **320**, containing a hard drive **322** in certain embodiments of the invention, and a signal retrieval/reproduction circuitry **318** in similar fashion as the integrated cable modem and cable television **210** of the FIG. **2** to perform storage and retrieval of the broadcast or archived signal. The integrated cable modem and cable television **310** is operable to perform retrieval and downloading of the broadcast signals using a variety of methods including the video-on-demand **350** or the offline video download **365** that are operable to retrieve a broadcast from the archived broadcast database **334**.

[0048] FIG. **4** is a system diagram illustrating an embodiment of a signal recording/buffering system **400** built in accordance with certain aspects of the present invention. The signal recording/buffering system **400**, in its most basic representation, contains a cable television server **430** and an integrated cable modem and cable television **410**. The cable television server **430** is operable to provide a cable television broadcast service **432** or an archived broadcast database **434**. The archived broadcast database **434** contains, in certain embodiments of the invention, archives of past broadcasts of the cable television server **430**. In even other embodiments of the invention, the archived broadcast database **434** contains the future, planned broadcasts of the cable television server **430**.

[0049] The cable television broadcast service **432** of the cable television server **430** provides an airwave broadcast signal **440** that is fed to the integrated cable modem and cable television **410**. The archived broadcast database **434** of the cable television server **430** provides a signal operable to provide both a video-on-demand **450** and an offline video download **465**. Either of the video-on-demand **450** and the offline video download **465** is operable to be provided to the integrated cable modem and cable television **410** via an Internet **460**. Alternatively, the video-on-demand **450** is operable to be provided directly to the integrated cable modem and cable television **410**.

[0050] In addition, the integrated cable modem and cable television **410** is also operable to perform download and playback of streaming video **467** from the cable television server **430**. The streaming video download **467** includes streaming download and playback of data that has an audio component and a video component as well as solely an audio component or solely a video component as described within various embodiments. As is known in the art of streaming data, a portion of the data may be downloaded to a buffer and the playback being initiated during the time in which the remainder of the streaming data is received. If desired, a portion of executable code, stored within the integrated cable modem and cable television **410**, initiates the streaming video independent of any user interaction; alternatively, some user-interaction is required before the streaming video **467** commences. Also, this streaming video **467** is operable via the Internet **460** or directly to the cable modem **416** as desired in various embodiments of the invention.

[0051] The integrated cable modem and cable television **410** employs a signal management circuitry **414** to control the recording and buffering of broadcasts signals, analog and digital. The integrated cable modem and cable television **410** uses a signal storage circuitry **420**, containing a hard drive **422** in certain embodiments of the invention, and a signal retrieval/reproduction circuitry **418** in similar fashion as the integrated cable modem and cable television **210** of the FIG. **2** and the integrated cable modem and cable television **310** of the FIG. **3** to perform storage and retrieval of the broadcast or archived signal.

[0052] The signal management circuitry **414** contains a signal recording circuitry **414***a* that itself contains, a scheduling circuitry **414***aa*, a signal quality monitoring circuitry **414***bb*, a digital retrieval/recording circuitry **414***cc*, and an airwave broadcast recording circuitry **414***dd*. The scheduling circuitry **414***aa* is operable to peruse the archived broadcast database **434** to extract past broadcasts and schedule when they are to be played back. Similarly, the scheduling circuitry **414***aa* is operable to peruse the archived broadcast database **434** to decide which broadcast segments to record in the future. The signal quality monitoring circuitry **414***bb* is operable to monitor the quality of the incoming signal, and reduce either or both of the audio or video quality of the signal in an effort to maintain constant playback of a broadcast signal. For example, in certain embodiments of the invention, the provision of the broadcast signal may suffer as a function of bandwidth of the cable modem, or the quality the airwave broadcast signal **440** could suffer as a function of whether, and in order to ensure uninterrupted service, the signal quality monitoring circuitry **414***bb* is operable to reduce the number of frames per unit time that are displayed or to reduce the audio quality from stereo to mono.

[0053] Similar bandwidth and processing resource measures are within the scope and spirit of the invention. The digital retrieval/recording circuitry **414***cc* is operable to perform independent retrieval of broadcasts contained within the archived broadcast database **434**. The digital retrieval/recording circuitry **414***cc* is operable, in certain embodiments of the invention, in conjunction with the scheduling circuitry **414***aa* to decide what to download and when to download it from the archived broadcast database **434**. The airwave broadcast recording circuitry **414***dd* is operable to record the airwave broadcast signal **440** in real time. If desired, when a broadcast program is decided to be recorded during broadcast, the airwave broadcast recording circuitry **414***dd* is operable to record the remaining portion of the broadcast signal whereas the digital retrieval/recording circuitry **414***cc* is operable is operable to retrieve the preceding portion of the broadcast that has already passed. In such embodiments of the invention, a dual recording of the broadcast program is being performed, one from the airwave broadcast signal **440** as it is being broadcast in real time and the other from the archived broadcast database **434**. If desired, the entirety of the broadcast program could be downloaded from the archived broadcast database **434** in such an embodiment after the broadcast is complete, and the airwave broadcast signal **440** could be displayed in real time to a user. Alternatively, once a user identifies a broadcast (in progress) that he wished to record, the entire program could be downloaded, from its beginning,

from the archived broadcast database **434**, in a delayed manner such that to a user, the entire program is "new" and not seen before.

[0054] FIG. **5** is a system diagram illustrating an embodiment of a commercial management system **500** built in accordance with certain aspects of the present invention. The commercial management system **500**, in its most basic representation, contains a cable television server **530** and an integrated cable modem and cable television **510**. The cable television server **530** is operable to provide a cable television broadcast service **532** or an archived broadcast database **534**. The archived broadcast database **534** contains, in certain embodiments of the invention, archives of past broadcasts of the cable television server **530**. In even other embodiments of the invention, the archived broadcast database **534** contains the future, planned broadcasts of the cable television server **530**.

[0055] The cable television broadcast service **532** of the cable television server **530** provides an airwave broadcast signal **540** that is fed to the integrated cable modem and cable television **510**. The archived broadcast database **534** of the cable television server **530** provides a signal operable to provide both a video-on-demand **550** and an offline video download **565**. Either of the video-on-demand **550** and the offline video download **565** is operable to be provided to the integrated cable modem and cable television **510** via an Internet **560**. Alternatively, the video-on-demand **550** is operable to be provided directly to the integrated cable modem and cable television **510**.

[0056] In addition, the integrated cable modem and cable television **510** is also operable to perform download and playback of streaming video **567** from the cable television server **530**. The streaming video download **567** includes streaming download and playback of data that has an audio component and a video component as well as solely an audio component or solely a video component as described within various embodiments. As is known in the art of streaming data, a portion of the data may be downloaded to a buffer and the playback being initiated during the time in which the remainder of the streaming data is received. If desired, a portion of executable code, stored within the integrated cable modem and cable television **510**, initiates the streaming video independent of any user interaction; alternatively, some user-interaction is required before the streaming video **567** commences. Also, this streaming video **567** is operable via the Internet **560** or directly to the cable modem **516** as desired in various embodiments of the invention.

[0057] The integrated cable modem and cable television **510** uses a signal storage circuitry **520**, containing a hard drive **522** in certain embodiments of the invention, and a signal retrieval/reproduction circuitry **518** in similar fashion as the integrated cable modem and cable television **210** of the FIG. **2**, the integrated cable modem and cable television **310** of the FIG. **3**, and the integrated cable modem and cable television **410** of the FIG. **4** to perform storage and retrieval of the broadcast or archived signal.

[0058] The integrated cable modem and cable television **510** contains a commercial management circuitry **514** that itself contains a commercial profiler circuitry **514***a* and a commercial detection circuitry **514***cc*. The commercial profiler circuitry **514***a* contains a commercial interaction/query circuitry **514***aa* and a commercial placement circuitry **514***bb*. The integrated cable modem and cable television **510** is operable to detect a commercial, whether the commercial is contained in an analog or digital broadcast signal. The commercial pro filer circuitry **514***a* is operable to be used within the integrated cable modem and cable television **510** to control the type and sequence of commercials that are going to be viewed by a user of the integrated cable modem and cable television **510**. For example, the commercial interaction/query circuitry **514***aa* is operable to allow a user to select those commercials that he/she would like to view. The commercial placement circuitry **514***bb* is operable to control the sequence of when the commercials are viewed by the user. For example, a user may select that all the commercials of a broadcast be placed at the beginning of the broadcast, similar to how commercials and advertisements are placed in the movie industry. Alternatively, a user may select the grouping of what types of commercials are to shown together. A user can use the commercial profiler circuitry **514***a* to personalize the commercials that he/she is shown. In addition, a user could use the commercial profiler circuitry **514***a,* in conjunction with the commercial detection circuitry **514***cc*, to skip all commercials in a broadcast.

[0059] A commercial feedback circuitry **590** is operable to provide feedback of a user's selection of which types of commercials to be viewed. This feedback includes any number of information including the product types, the product lines, and the types of commercials. Companies purchasing commercial air time from the cable television server **530** are provided instantaneous feedback on the success/failure of their advertisements. This ability to provide accurate consumer feedback would provide a significant improvement over the conventional methods of trying to model consumer choices and preferences.

[0060] A business interaction circuitry **592** is also communicatively coupled to the integrated cable modem and cable television **510** in various embodiments of the invention. The business interaction circuitry **592** is operable cooperatively with the commercial feedback circuitry **590**, if desired, to allow real time interaction with companies and customers seeking to transact business with a user of the integrated cable modem and cable television **510**. The user may also perform business transactions with companies using the business interaction circuitry **592**. For example, in one embodiment, a user of the integrated cable modem and cable television **510** is afforded the opportunity, by using the business interaction circuitry **592**, to purchase advertised items from a vendor who purchases commercial air time from the cable television server **530**. Similarly, one of the companies purchasing commercial air time from the cable television server **530** may perform modification of their advertising commitment with the company operating the cable television server **530**. If desired, this modification is based on the response of users of integrated cable modem and cable televisions to particular advertising. The integrated cable modem and cable television **510** is operable to perform complete business transactions without human interaction.

[0061] FIG. **6** is a system diagram illustrating an embodiment of a content management system **600** built in accordance with certain aspects of the present invention. The content management system **600**, in its most basic representation, contains a cable television server **630** and an integrated cable modem and cable television **610**. The cable television server **630** is operable to provide a cable television broadcast service **632** or an archived broadcast database **634**. The cable television server **630** employs content tagging circuitry **631** to attach a rating to each of the broadcasts is transmits. The

rating is, in certain embodiments of the invention, those known to the television and movie industries such as G, PG, PG-13, R, X, XXX, MA, Y, etc. In addition, any other rating system that used to depict the content of a broadcast is included without departing from the scope and spirit of the invention. The archived broadcast database **634** contains, in certain embodiments of the invention, archives of past broadcasts of the cable television server **630**. In even other embodiments of the invention, the archived broadcast database **634** contains the future, planned broadcasts of the cable television server **630**.

[0062] The cable television broadcast service **632** of the cable television server **630** provides an airwave broadcast signal **640** that is fed to the integrated cable modem and cable television **610**. The archived broadcast database **634** of the cable television server **630** provides a signal operable to provide both a video-on-demand **650** and an offline video download **665**. Either of the video-on-demand **650** and the offline video download **665** is operable to be provided to the integrated cable modem and cable television **610** via an Internet **660**. Alternatively, the video-on-demand **650** is operable to be provided directly to the integrated cable modem and cable television **610**.

[0063] In addition, the integrated cable modem and cable television **610** is also operable to perform download and playback of streaming video **667** from the cable television server **630**. The streaming video download **667** includes streaming download and playback of data that has an audio component and a video component as well as solely an audio component or solely a video component as described within various embodiments. As is known in the art of streaming data, a portion of the data may be downloaded to a buffer and the playback being initiated during the time in which the remainder of the streaming data is received. If desired, a portion of executable code, stored within the integrated cable modem and cable television **610**, initiates the streaming video independent of any user interaction; alternatively, some user-interaction is required before the streaming video **667** commences. Also, this streaming video **667** is operable via the Internet **660** or directly to the cable modem **616** as desired in various embodiments of the invention.

[0064] The integrated cable modem and cable television **610** uses a signal storage circuitry **620**, containing a hard drive **622** in certain embodiments of the invention, and a signal retrieval/reproduction circuitry **518** in similar fashion as the integrated cable modem and cable television **210** of the FIG. **2**, the integrated cable modem and cable television **310** of the FIG. **3**, the integrated cable modem and cable television **410** of the FIG. **4**, and the integrated cable modem and cable television **510** of the FIG. **5** to perform storage and retrieval of the broadcast or archived signal.

[0065] The integrated cable modem and cable television **610** contains a content management circuitry **614** that itself contains a content pro filer circuitry **614***a* and a content tag detection circuitry **614***cc*. The content profiler circuitry **614***a* contains a content interaction/query circuitry **614***aa* and a content modification circuitry **614***bb*. In much the same as the integrated cable modem and cable television **510** of the FIG. **5** performs selection of commercials, the integrated cable modem and cable television **610** of the FIG. **6** performs selection of broadcasts as a function of content. For example, a user could select that only broadcasts of a specific rating be received. Alternatively, the integrated cable modem and cable television **610** is operable to perform modification of the broadcast using the content modification circuitry **614***bb* in much the same way that many of the major television networks modify certain programs for violence and nudity so that they are acceptable for a broader audience. In addition, a user of the integrated cable modem and cable television **610** can select only certain types of rating or content, i.e., only R rated programs or only programs containing violence. Any combination of rating and content is included to be selected by a user.

[0066] A content feedback circuitry **690** is operable in much the same way as the commercial feedback circuitry **590** provides feedback of users' selections of commercials in the FIG. **5**. The content feedback circuitry **690** is operable to provide feedback of a user's selection of which types of rating and content of programs are to be viewed. This feedback includes information including the rating and the content of programs selected by users. Broadcast companies are provided instantaneous feedback on the types of broadcast programs that are most desirable for their subscribers. This ability to provide accurate cable television consumer feedback would provide advantage in choosing what types of programs are most desired by users as well as helping to provide intelligent decision-making for potential advertisers who desire to purchase commercial time. Knowing the types programs that are most commonly selected would allow companies to purchase commercial time in an intelligent manner.

[0067] Similar to the embodiment shown in the FIG. **5**, a business interaction circuitry **692** is also communicatively coupled to the integrated cable modem and cable television **610** in various embodiments of the invention. The business interaction circuitry **692** is operable cooperatively with the content feedback circuitry **690**, if desired, to allow real time interaction with companies and customers seeking to transact business with a user of the integrated cable modem and cable television **610**. The user may also perform business transactions with companies using the business interaction circuitry **692**. For example, in one embodiment, a user of the integrated cable modem and cable television **610** is afforded the opportunity, by using the business interaction circuitry **692**, to purchase advertised items from a vendor who purchases commercial air time from the cable television server **630**. Similarly, one of the companies purchasing commercial air time from the cable television server **630** may perform modification of their advertising commitment with the company operating the cable television server **630**. If desired, this modification is based on the response of users of integrated cable modem and cable televisions to particular advertising. The integrated cable modem and cable television **610** is operable to perform complete business transactions without human interaction.

[0068] FIG. **7**A is a system diagram illustrating an embodiment of a time compression system **700** built in accordance with certain aspects of the present invention. The time compression system **700** contains a cable television server **730** and an integrated cable modem and cable television **710**. The cable television server **730** employs a signal monitoring circuitry **732** and a signal compression circuitry **734**, that itself contains a data extraction circuitry **734***a*, to generate a time-compressed signal **740**. The time-compressed signal **740** is provided to the integrated cable modem and cable television **710** for playback as a reproduced time-compressed signal **730**.

[0069] Studies have shown that certain portions of program can be intelligently compressed without any perceptual deg-

radation in the overall quality to a viewer or listener. For portions of a broadcast that are substantially similar in video and audio data content as determined by the signal monitoring circuitry **732**, a certain number of frames is intelligently extracted using the data extraction circuitry **734***a*, so that an amount of time is saved from the overall broadcast. For example, when a scene is drawn out over a relatively long period of time and much of the data is highly correlated and similar, a predetermined number of frames (say every 10^{th} frame) is extracted from the overall broadcast signal, so that the signal is compressed into the time-compressed signal **740**. Any number of intelligent methods are used to determine when the signal is sufficiently similar such that a portion of it can be extracted without departing from the scope and spirit of the invention.

[0070] FIG. **7**B is a system diagram illustrating another embodiment of a time compression system **705** built in accordance with certain aspects of the present invention. The time compression system **705** contains a cable television server **735** and an integrated cable modem and cable television **715**. The integrated cable modem and cable television **715** employs a signal monitoring circuitry **717** and a signal compression circuitry **719**, that itself contains a data extraction circuitry **719***a*, to convert an un-compressed signal **745** into a reproduced time-compressed signal **735**.

[0071] As described above with respect to the time compression system **700** of the FIG. **7** A, Studies have shown that certain portions of program can be intelligently compressed without any perceptual degradation in the overall quality to a viewer or listener. For portions of a broadcast that are substantially similar in video and audio data content as determined by the signal monitoring circuitry **717**, a certain number of frames is intelligently extracted using the data extraction circuitry **719***a*, so that an amount of time is saved from the overall broadcast. For example, when a scene is drawn out over a relatively long period of time and much of the data is highly correlated and similar, a predetermined number of frames (say every 10th frame) is extracted from the overall broadcast signal, so that the signal is compressed into the reproduced time-compressed signal **735**. Any number of intelligent methods are used to determine when the signal is sufficiently similar such that a portion of it can be extracted without departing from the scope and spirit of the invention.

[0072] The time compression system **700** of the FIG. **7**A and the time compression system **705** of the FIG. **7**B are illustrative of where the time compression of a signal is performed in either of server (the cable television server **730** of the FIG. **7** A) or a receiver (the integrated cable modem and cable television **715** of the FIG. **7**B) within any of the various embodiments illustrated above in the detailed description of the various Figures.

[0073] FIG. **8** is a system diagram illustrating an embodiment of a television management system **800** built in accordance with certain aspects of the present invention. A cable television server **830** is operable to broadcast either one or both of a digital broadcast signal **850** and an analog broadcast signal **840**. A television **810** is operable to receive the digital broadcast signal **850** and the analog broadcast signal **840**. In certain embodiments of the invention, the television **810** is an integrated cable modem and cable television. The television **810** employs a digital receiver circuitry **852** to accommodate the digital broadcast signal **850** and an analog receiver circuitry **842** to accommodate the analog broadcast signal **840**. The television **810** employs a two-way communication circuitry **852** that is operable to communicate with the cable television server **830** and any other two-way communication device **823** as well via a two-way communication link **861**.

[0074] In certain embodiments of the invention, the two-way communication circuitry **852** contains a cable modem **816** that is operable to communicate with the cable television server **830** and the any other two-way communication device **823** as well via the two-way communication link **861**. The two-way communication link **861** includes the Internet in some embodiments. The cable modem **816** is operable to communicate with any number of other devices via the Internet **860**. For examples, the television **810** is operable to communicate with a computer **811** and a local area network (LAN) **890** using either the two-way communication circuitry **852** and/or the cable modem **816**. Any other Internet/LAN appliance **812** is also communicatively coupled to the Internet **860**. If desired, the local area network (LAN) **890** is an Internet-operable network' in applications desirous of access to the Internet **860**. In certain embodiments of the invention, the local area network (LAN) **890** is a home based LAN.

[0075] The television **810** also contains signal transformation circuitry **825** and a signal storage circuitry **820**. The signal transformation circuitry **825** is operable to perform transformation of any received signal, such as either one of the digital broadcast signal **850** and the analog broadcast signal **840**, into any other form of signal. For example, the analog broadcast signal **840** may be transformed into a digital signal within the television **810**. Moreover, the signal transformation circuitry **825** is operable to perform transformation of a stored signal into the another format for display or transmission to any of the other devices communicatively coupled to the television **810**. The signal storage circuitry **820** is operable to store any received signal, such as either one of the digital broadcast signal **850** and the analog broadcast signal **840**, for subsequent transformation, display, or transmission.

[0076] In certain embodiments of the invention, the television management system **800** provides for communication from the television **810** to the cable television server **830**. The television **810** is operable to receive broadcast signals directly from the cable television server **830** without any interaction or communication with the cable television server **830**. However, the television **810** is also operable to receive broadcast signals from the cable television server **830** after having selected certain programming and requested that it be provided to the television **810**. If desired, the television **810** is operable to select a particular broadcast and to receive that broadcast. Moreover, a number of cable televisions, or a number of integrated cable modem and cable televisions, may be operable to select a particular broadcast and to receive that broadcast. For example, the number of integrated cable modem and cable televisions are operable to select the particular broadcast and to receive that broadcast. The cable television server **830** is operable to process the selections of the television **810** or the number of integrated cable modem and cable televisions in order to process the selections and to determine which broadcast to perform.

[0077] Alternatively, the television **810** is operable to receive programming from the cable television server **830** by transmission via the two-way communication link **861**. The requested and received signal may then be stored in the signal storage circuitry **820**. If necessary or if desired, requested and

received signal may be transformed into a more desirable or usable form, depending on the application, by the signal transformation circuitry **825**.

[0078] Also included within the scope and spirit of the invention is the ability to perform such operations initially using a device communicatively coupled to the Internet **860** or the local area network (LAN) **890**, and then to provide the video and/or audio data to the television **810**.

For example, the computer **811** is operable to perform all of the functionality described within the television **810** in certain embodiments of the invention. In such an instant, the computer **811** is operable to perform all of the described functionality such as receipt, processing, storage, and transformation of a signal and then to provide it to another device, such as another computer or the television **810** or another television.

[0079] In other words, all of the functionality described within the various embodiment of the television **810**, as well as the various embodiments of integrated cable modem and cable televisions within the various Figures, may be incorporated within a computer capable of offering such functionality. As the components and functionality offered by a television and a computer continue to merge and the differences become less and less, a "computer" that is operable for television functionality, or having a built in television, is such a device into which the various functionality of the present invention may also be incorporated. In such an instance, a "black box" device, having both computer functionality and television functionality would be operable to perform and to provide the various aspects of the present invention.

[0080] It is also noted that the devices used to perform the communicative coupling between the various devices described in the various embodiments of the present invention include both wireline, wireless, optical, and other communicative coupling methods and practices known in the art. For example, the communicative coupling between the two-way communication circuitry **852** and the two-way communication link **861** is performed via a wireline connection in certain embodiments of the invention; in others, it is a wireless connection. Similarly, the communicative coupling between the cable modem **816** and the Internet **860** is performed using either a wireline connection or a wireless connection.

[0081] The television **810** is operable to perform coupling to any intermediary connection that subsequently allows connection to the two-way communication link **861** or the Internet **860** without departing from the scope and spirit of the invention. For example, an infrared or radio frequency connection may be made from the television **810** to a peripheral intermediary device or a wall connection in a building before the communicative coupling to either the two-way communication link **861** or the Internet **860** is completed. While in certain embodiments of the invention, the television **810** is a true "cable" television having a physical cabled connection between itself and the wall, there may be portions of the communicative coupling between the television **810** and the other various devices within the present invention that include wireless communication as well. The use and interchange of such wireline (e.g., "cable") interconnections and wireless interconnections, within any of the various embodiments, does not depart from the scope and spirit of the invention. A cable television is operable where a portion of its communicative coupling is provided via such wireless connections.

[0082] Similarly, the communicative coupling provided by the local area network (LAN) **890** is achieved using either wireline or wireless connections. For all purposes within this patent application, the term wireline includes the use of dielectric "wired" media such as optical fiber having a physical component completing the communicative coupling between the various devices.

[0083] A business interaction circuitry **892** is also communicatively coupled to the television **810** via the two-way communication link **861**, which may include the Internet **860**, and the cable television server **830** in various embodiments of the invention. The business interaction circuitry **892** of the FIG. **8** is operable is all of the ways described for the business interaction circuitries **592** and **692** within the embodiments of the FIGS. **5** and **6**, respectively. The business interaction circuitry **892** is accessible by a user of the television **810** and anyone with authorized access to the cable television server **830**. For example, such a company **893** is able to use the business interaction circuitry **892** in certain embodiments of the invention. The company **893** may purchase advertising time or air time from the cable television server **830**. In addition, the company **893** may conduct business transactions with a user of the television **810**. Also, the interconnectivity between the company **893** and the cable television server **830**, and the two-way communication link **861**, is operable when portions of interconnectivity include wireless connections as well.

[0084] A user of the television **810** is able to initiate and conduct such business transactions with the company **893** and the cable television server **830**. Alternatively, the television **810** automatically initiates the business transactions with the company **893** and the cable television server **830**. For example, the television **810** is operable to be programmed to perform certain business transactions at certain times without the necessity of user interaction in various embodiments of the invention. One example of such a business transaction includes a payment of cable television service via the two-way communication link **861**. Other business transactions are also included within the scope and spirit of the invention. It is also noted that any other devices communicatively coupled to the television **810** and the cable television server **830** are able to perform business transactions as well.

[0085] FIG. **9** is a functional block diagram illustrating an embodiment of a broadcast signal processing method **900** performed in accordance with certain aspects of the present invention. In a block **910**, a broadcast signal is received. The broadcast signal is any number of broadcast signals including a digital broadcast signal **911** and an analog broadcast signal **912**. Then, in a block **920**, the broadcast signal received in the block **910** is processed in the block **920**. Ultimately, the processed broadcast signal is stored in a block **930**. Alternatively, the processed broadcast signal is either displayed and/or transmitted in a block **935**. The display in the block **935** include any number of display methods including using a television, a computer, or any other system operable to perform display of a broadcast signal or a processed broadcast signal. The transmission of the processed broadcast signal in the block **935** includes any of the processed described in the present invention including via the Internet or via a local area network (LAN) to any number of devices communicatively coupled to either and or both the Internet or the LAN.

[0086] FIG. **10** is a functional block diagram illustrating an embodiment of a digital signal processing method **1000** performed in accordance with certain aspects of the present invention. In a block **1010**, a digital signal is received. The received digital signal in the block **1010** is any number of signals including a video-on-demand digital signal **1011** and an offline video download signal **1012**. In a block **1020**, the

received digital signal is processed in a block **1020**. Then, that processed digital signal is stored in a block **1030**. Alternatively, the processed digital signal is either displayed and/or transmitted in a block **1035**. The display in the block **1035** include any number of display methods including using a television, a computer, or any other system operable to perform display of a broadcast signal or a processed broadcast signal. The transmission of the processed broadcast signal in the block **1035** includes any of the processed described in the present invention including via the Internet or via a local area network (LAN) to any number of devices communicatively coupled to either and or both the Internet or the LAN.

[0087] FIG. **11** is a functional block diagram illustrating an embodiment of a signal processing method **1100** performed in accordance with certain aspects of the present invention. In a block **1114**, a signal is requested. Before the request of the signal in the block **1114**, a signal is received in a block **1110**. In certain embodiments of the invention, a first signal may be received in the block **1110**, then a second signal is received in the block **1114**. Alternatively, the same signal is received in the block **1110** and requested, perhaps for continued reception, in the block **1114**. Then, in a block **1116**, a signal is received. The signal received in the block **1116** is different than the signal received in the block **1110**; it is the same signal in other embodiments. Then, the signal is processed in a block **1120**. Is desired in certain embodiments, the signal received in the block **1110** is processed in the block **1120**. Alternatively, the signal received in the block **1114** is processed in the block **1120**. If desired, both the signal received in the block **1110** and the signal received in the block **1114** are processed in the block **1120**.

[0088] Ultimately, the processed signal is stored in a block **1130**. Alternatively, the processed signal is either displayed and/or transmitted in a block **1135**. The display in the block **1135** include any number of display methods including using a television, a computer, or any other system operable to perform display of a broadcast signal or a processed broadcast signal. The transmission of the processed broadcast signal in the block **1135** includes any of the processed described in the present invention including via the Internet or via a local area network (LAN) to any number of devices communicatively coupled to either and or both the Internet or the LAN. The signal processing method **1100** includes the transmission of a signal between various devices, as shown in the embodiment of the invention shown in the FIG. **8**.

[0089] FIG. **12** is a functional block diagram illustrating a send process **1200** performed using certain aspects of the present invention. The FIG. **12** shows the send process **1200** that occurs if a request cannot be fulfilled locally. This send process **1200** waits for an event to occur. If the event is a new request message to send, then it attempts to service the send request immediately. Of the data links that are available, the process chooses the highest quality of service (QOS) not exceeding the cost required by the request. If the optimal data link fails then each of the data links that do not exceed the requested cost will be tried in descending order of QOS until the list is exhausted or the data is sent. The other event that can trigger the link selection process is when a new data link becomes connected to the device. Since data packets have been queued because the appropriate cost link was not available, the availability of a new link triggers an examination of the send queue for requests that can be sent over the new link. Thus, data will be sent as soon as an appropriate data link is available to the system. The FIG. **12** shows the send process **1200** of a data collection terminal. The request is always processed when it is first put in the queue and then if it is not sent it will be put in the send queue with the other requests waiting an appropriate data link, Also when a new data link is detected all messages that can use that data link will be sent. The various functionality of the send process **1200** shown in the FIG. **12** is also described below from another perspective.

[0090] In a block **1210**, any system that performs the send process **1200** waits for an event to occur. After one has occurred, then, in a decision block **1212**, it is determined of the event is a new request. If it is a new event, then the send process **1200** proceeds to the block **1214**, where a highest QOS is selected for cost. For example, the send process **1200** may be further controlled to choose a highest QOS that does not exceed the cost required by the request. Then, in a block **1216**, the send process **1200** attempts to send requests. Further in a decision block **1218**, it is determined whether the attempted send action of the block **1216** was successful. If the send was not successful, as determined in the decision block **1218**, then in a decision block **1224**, it is further determined whether there are more data links to try. If there are more data links to try as determined in the decision block **1224**, then the send process **1200** returns to the attempt to send requests block **1216**. Alternatively, however, if the send was successful, as determined in the decision block **1218**, then the send process **1200** returns to the wait for event functional block **1210**.

[0091] However, back to the determination in the decision block **1212**, if it is determined that the event of the block **1210** is not a new request, then in a decision block **1220**, it is further determined if any new data links are available. If there are none available, then the send process **1200** waits returns to the wait for event functional block **1210**. However, if there are new data links available as determined in the decision block **1220**, then in a decision block **1222**, it is determined whether there are data in queue. If there are data in queue, then the send process goes to the block **1214** where a highest quality of service (QOS) is selected for cost. If no data is in queue, however, the send process **1200** goes to a put request on send queue functional block **1226**. Similarly, if in the decision block **1224** it is determined that there are no more data links to try, then the send process **1200** also goes to the put request on send queue functional block **1226**. After the operation of the put request on send queue functional block **1226**, the send process **1200** returns to the wait for event functional block **1210**. The send process **1200** may operate indefinitely in this continuous operation.

[0092] FIG. **13** is a functional block diagram illustrating a receive process performed using certain aspects of the present invention. The FIG. **13** shows the receive process **1300** of receiving responses from another systems component. This process matches the response with the original request through the transaction number stored in the request and inserted into the response by an upstream information system. This data is then stored via transaction number and the upper layer application program notified that the transaction result is available for processing. The FIG. **13** also shows processing of a request from another systems component. The response process will copy the maximum cost information from the request to the response message for sending to the host and thus the "send process" as described in FIG. **1** can be used to send responses as well as requests. The FIG. **13** shows the receive process **1300**. The response may be out of sequence from the users current activities and thus the user

must be given the opportunity to view the transaction or to continue with the current task and return to the transaction later. The various functionality of the receive process **1300** shown in the FIG. **13** is also described below from another perspective.

[0093] In a block **1310**, the receive process **1300** waits to receive a message. Then, when a message is received, it is then determined whether the received message is a request in a decision block **1312**. If it is determined that the received message is a request in the decision block **1312**, then the request is fulfilled in a block **1320**. Then, the response is put in a send queue in a block **1318**.

[0094] However, If it is determined that the received message is not a request in the decision block **1312**, then the received message is matched with a transaction identification (ID) in a block **1314**. The message is then stored for user retrieval in a block **1316**, and the user is also alerted that the request has been fulfilled in a block **1322**. The receive process **1300** then goes back to the wait to receive a message functional block **1310**. Similar to the send process **1200**, the receive process **1300** may operate indefinitely in this continuous operation. Both the send process **1200** and the receive process **1300** may operate cooperatively in various embodiments of the invention.

[0095] Moreover, both the send process **1200** and the receive process **1300** may be employed within any of the various embodiments of the invention to effectuate a high QOS connection (be it wireless or wireline), among other benefits of the send process **1200** and the receive process **1300**. For example, when any of the various embodiments of integrated cable modem and cable televisions shown above in the various embodiments of the invention desire to find a particular connection to a cable television server, or simple a television server (say in a wireless context), the send process **1200** and the receive process **1300** may be employed to that end. The same applicability of the send process **1200** and the receive process **1300** may similarly be extended to the various embodiments shown below as well.

[0096] FIG. **14** is a system diagram illustrating an embodiment of a vehicle adapted media system that **1400** is built in accordance with certain aspects of the present invention. The vehicle adapted media system that **1400** is operable using a vehicle media system **1410** that may be mounted within a vehicle **1404**. The vehicle media system **1410** is also equipped to perform wireless communication functionality. An antenna may used in certain embodiments of the invention. The vehicle media system **1410** may be permanently mounted within the vehicle **1404**, but as will be seen in various embodiments of the invention, a vehicle media system **1410** that is a portable/dockable vehicle media system **1415** is oftentimes more desirable for accommodating many diverse applications. However, the vehicle media system **1410** may nevertheless be permanently mounted within the vehicle **1404** without departing from the scope and spirit of the invention.

[0097] The vehicle **1404** is shown as being parked within a garage/parking space **1406**. The garage/parking space **1406** is merely exemplary, and any environment that offers the functionality of the garage/parking space **1406** is operable using various aspects of the invention, as will be seen. The garage/parking space **1406** is illustrated as an example of a place in which nearly every vehicle **1404** will be at one time or another. Within the garage/parking space **1406**, the vehicle media system **1410** is able to perform communicative coupling, and communication, with a high speed wireless local area network (LAN) **1490**. It is noted, however, that the vehicle media system **1410**, when provided with hard-wire, or wireline communicative coupling, may also perform communicative coupling and communication with the high speed wireless LAN **1490**. As described above in various embodiments of the invention, the use of segmented portions of wireless or wireline communicative coupling between various components of the various embodiments does not depart from the scope and spirit of the invention. The high speed wireless LAN **1490** is then operable to communicate with the Internet **1460**, or any other network **1470** as well.

[0098] The high speed wireless LAN **1490** is exemplary of a high speed Internet access, or any other network access for that matter, that may achieved with the vehicle media system **1410**. The vehicle media system may also be equipped to perform all of the functionality of the various embodiments of integrated cable modem and cable televisions shown above in the various embodiments of the invention. For example, the high speed wireless LAN **1490** may provide the channel through which offline video download, streaming video, or other media transfers may be performed within the scope and spirit of the invention. Similarly, the vehicle media system **1410** may also be equipped to provide for receipt of airwave broadcasts, of both analog and digital format. That is to say, the vehicle media system **1410** may include all of the various functionality of the various embodiments of integrated cable modem and cable televisions shown above in the various embodiments of the invention. The vehicle adaptability of the vehicle media system **1410**, within the context of the vehicle adapted media system that **1400**, illustrates one example of the adaptability of the various aspects of the present invention in multiple contexts, including those involving means of individual transportation, such as the vehicle **1404**. It is understood that a media system built in accordance with the invention could also be adapted to any other vehicle, including common carrier means of transportation such as trains, airplanes, and other vehicles as well.

[0099] FIG. **15** is a system diagram illustrating an embodiment of a portable adapted media system **1500** that is built in accordance with certain aspects of the present invention. A portable media system **1515** is operable to perform communication with a network **1570** using any of a variety or communication link paths. The portable media system **1515** may contain each of the various circuitries and devices contained within the vehicle media system **1410** of the FIG. **14** in certain embodiments of the invention. It may also contain additional circuitry offering greater functionality as well as will be seen in the various embodiments described herein. The network **1570** is the Internet **1560** itself in certain embodiments of the invention, but the network **1570** may also be any other network as well without departing from the scope and spirit of the invention.

[0100] In one instance, the portable media system **1515** is operable to perform communication with the network **1570** using the functionality offered by a public facility that supports network access **1530**. The public facility supporting network access **1530** is any number of various types of public facilities. Some examples of the public facility supporting network access **1530** include an airport **1532** and a train station **1534**. However, any other public facility **1536** is also included within the scope and spirit of the invention. The public facility supporting network access **1530** employs a

network access system **1595** that may employ a high speed wireless LAN **1590** to provide for access to the network **1570**.

[0101] The manner is which the portable media system **1515** accesses the network **1570**, using the functionality of the public facility supporting network access **1530**, may be performed in any number of ways as shown by the network interface options **1540**. For example, the network interface may be achieved using a wireless tower **1544** that communicatively couples to a terrestrial-based wireless network **1545** that itself communicatively couples to the network **1570**. However, in alternative embodiments, the network interface may be achieved using a satellite **1542** that communicatively couples to a satellite-based wireless network **1543** that itself communicatively couples to the network **1570**. Moreover, any other wireless interface **1547** may also be used to perform the communicative coupling. It is also understood that a wireline communicative coupling, that connects the portable media system **1515** to the network **1570** through the public facility supporting network access **1530** is also envisioned within the scope and spirit of the invention. For example, a wireline hook-up may be provided for the portable media system **1515** within the public facility supporting network access **1530** to allow access to the network **1570**. In addition, any number of communication links may exist within the network interface options **1540** by which the portable media system **1515** may access the network **1570**.

[0102] In another instance of connecting the portable media system **1515** to the network **1570**, any number of network interface options **1550** may also be used. These network interface options **1550** may be accessed by the portable media system **1515** using a wide area wireless network **1591**. From certain perspectives, the wide area wireless network **1591** is employed when the portable media system **1515** does not have access to another connection to the network **1570**. For example, in situations where the portable media system **1515** cannot get access to the high speed wireless LAN **1590**, or another high performance network that allows for network access, the portable media system uses the wide area wireless network **1591** to access the network **1570**.

[0103] The network interface options **1550** includes an indefinite number of links, shown as a link #**1 1551**, . . . , and a link #n **1555**. Each of the various links **1551** . . . **1555** include a number of parameters by which they may be characterized. For example, the link #**1 1551** includes a cost **1552** by which the link #**1 1551** may be compared to the other links within the network interface options **1550**. In certain instances, a user of the portable media system **1515** may prefer to perform connection to the network **1570** via a cheaper link. However, in other situations, the need for connectivity is of such high importance that the cost of the link is of much reduced importance. The link #**1 1551** may also include any other parameter **1553** by which it may be characterized and compared to other links within the network interface options **1550**. Similarly, the link #n **1555** may also be characterized using a cost **1556** and any other parameter **1557**.

[0104] It is also noted that the network interface options **1540** and the network interface options **1550** may both contain common elements. That is to say, the network interface options **1540** may be viewed as having multiple links, each of which may be characterized by certain parameters including cost and any other parameter. Similarly, the network interface options **1540** may also include all of the various functionality of the network interface options **1540** as well.

[0105] FIG. **16** is a system diagram illustrating an embodiment of a media server network **1600** constructed in accordance with certain aspects of the present invention. The media server network includes a media server **1610** and an indefinite number of other media server(s) **1680** that all communicatively couple to a network **1670**. Again, the network **1670** may itself be the Internet in certain embodiments of the invention. All of the functionality of the media server **1610** may also be included within the other media server(s) **1680** as well. An indefinite number of media customer(s) **1690** also are provided communicative coupling to the network **1670**. The indefinite number of media customer(s) **1690** may include as few as one customer without departing from the scope and spirit of the invention.

[0106] The media server **1610** includes processing circuitry **1612** and media storage circuitry **1616**. The media server **1610** employs interface circuitry **1614** to perform communicative coupling to the network **1670**. The media server **1610** is operable to perform various server functionality **1618**. The server functionality **1618** includes media management **1630** and link assessment **1620**. For example, the server functionality **1618** provides for assessment of the various links by which it may perform communicative coupling to the network **1670** in terms of a number of parameters including cost **1622**, speed **1624**, reliability **1626**, or any other factor **1629** as well.

[0107] The server functionality **1618** of the media server **1610**, in terms of media management **1630**, may perform media management **1630** between the media server **1610** and the other media server(s) **1680** or simply within the media server **1610**. The media management **1630** includes management in terms of demand **1631**. This demand **1631** may be characterized in terms of many parameters including geographical **1632** and overall **1633**. That is to say, there may be some media that is of particular high demand in certain geographical regions. For example, in the context of sporting events, it may be desirable to ensure that a particular media server, located within relatively close geographical proximity to a given city contains media that does have of will have a high demand within that city. Any other partition of geography may also be sued without departing from the scope and spirit of the invention, including a state or a region. This media may then be stored within the media server **1610** using the media storage circuitry **1616**.

[0108] Media management **1630** may also be performed in terms of customer pricing **1634**. For example, anyone of the media customer(s) **1690** may set certain caps or cutoffs of media for which they do not even desire to purchase. Moreover, there may be links over which certain of the media customer(s) **1690** may not wish to acquire media because the cost is prohibitive for them. Therefore, the customer pricing **1634** may be performed using constraints provided by the media customer(s) **1690**. However, the customer pricing **1634** may be performed using constraints provided by the media server **1610** as well. For example, a company operating the media server **1610** may perform customer pricing **1634** as well. The company may set customer pricing **1634** to be processed using the media server **1610**.

[0109] Media management **1630** may also be performed in terms of distribution speed **1636**. The media server **1610** may be adapted to perform distribution of media only when the distribution speed **1636** is above a certain threshold. Alternatively, anyone of the media customer(s) **1690** may decide to receive distribution of media from the media server **1610** only

when the distribution speed **1636** meets a certain threshold. The threshold for which the media server performs distribution of media and a customer-defined threshold need not be the same threshold.

[0110] Media management **1630** may also be performed in terms of allocating media stored among any number of various server(s) **1638**. For example, media management **1630** may include moving media from one media server to another based on any of the above-described considerations. For example, If it is determined that certain media is infrequently demanded in a given geographical region, then that media may then be transferred to a media server that may more appropriately store the media. In addition, there may be any other factor **1639** by which media management may be performed.

[0111] FIG. **17** is a system diagram illustrating an embodiment of an adaptive media server network **1700** that is built in accordance with certain aspects of the present invention. Any number of media servers are communicatively coupled to a network **1770**. Again, the network **1770** may itself be the Internet in certain embodiments of the invention. In addition, any number of media customers are also able to communicatively couple to the network **1770**. The functionality of the adaptive media server network **1700** allows for adaptive media processing, including media transfer among the various media servers within the adaptive media server network **1700**. Each of the media servers within the adaptive media server network **1700** are operable to perform communication and cooperative processing to handle the various media stored and transferred among and between them.

[0112] The indefinite number of media servers are shown as a media server #**1 1710**, a media server #**2 1720**, . . . , and a media server #n **1730**. In addition, the indefinite number of media customers are shown as a media customer #A **1791**, a media customer #B **1792**, a media customer #C **1793**, a media customer #D **1794**, . . . , and a media customer #Z **1799**.

[0113] Sometimes, certain of the media servers and some of the media customers are both in a high demand geographical area **1741**. In such instances, it makes sense to ensure that high demand media, as desired by the media customer #A **1791** and the media customer #B **1792**, is stored locally on the media server #**1 1710** within the high demand geographical area **1741**. This is shown graphically as the functional block **1712** where high demand media is stored locally on the media server #**1 1710** for use by the media customer #A **1791** and the media customer #B **1792**. It is also noted that the high demand geographical area **1741** may not suggest solely that the media customer #A **1791** and the media customer #B **1792** as well as the media server #**1 1710** are all within a common geographical area, but rather the media server #**1 1710** may be the best media server that can provide for high demand media to the media customer #A **1791** and the media customer #B **1792**. That is to say, the media server #**1 1791**, though perhaps further away from the media customer #A **1791** and the media customer #B **1792** in terms of distance, they are nevertheless "closer" in terms of performance of communicative coupling offered by the network **1770**. For example, is situations where the media server #**2 1720** is very close to the media customer #A **1791** and the media customer #B **1792**, yet it may be accessed via a dial-up modem, whereas the media server #**1 1710** may be accessed via an Ethernet connection, the media server #**1 1710** may be "closer" from a network perspective.

[0114] Analogously, it may be more efficient to transfer infrequently demanded media from one media server to another media server, as shown by the functional block **1732** within the media server #n **1730**. This situation may occur in a low demand geographical area **1742**. It may be that the media customer #Z **1799** perform very little demand, perhaps none at all, of any media stored locally on the media server #n **1730**. In such an instance, it may make sense to transfer the infrequently demanded media to another media server where it is demanded more frequently, as shown by the functional block **1732**. This will free up space on the media server #n **1730**.

[0115] In addition, the various media servers may modify media pricing based on demand (or any other factors as well), as shown by the modify pricing based on demand (or other factors) functional block **1722** within the media server #**2 1720**. It is also understood that the functionality of the functional blocks **1712**, **1722**, and **1732** may be included within each of the various media servers, namely, the media server #**1 1710**, the media server #**2 1720**, . . . , and the media server #n **1730**.

[0116] FIG. **18** is a system diagram illustrating an embodiment of vehicle adapted media system operation **1800** that is performed in accordance with certain aspects of the present invention. A vehicle **1804** that includes a vehicle media system **1810** begins in a home based region **1801**. The vehicle **1804** may be parked at the operator's home **1805**. Alternatively, the home based region **1801** may simply be a region in which the vehicle media system **1810** is deemed to be in its "home region." Such terminology is sometimes used in the cellular telephone context. It may be that the vehicle media system **1810** is afforded reduced wireless connectivity rates or greater service within the home based region **1801**. Alternatively, the home based region **1801** may simply be the region in which the operator of the vehicle **1801** may access the functionality offered within his home **1805**. For example, in various embodiments of the invention as shown and described above, a garage or parking space for a vehicle, that may be at the home **1805**, may include network access via a high speed wireless LAN. Any of the various functionality described above within these embodiments is also included within the vehicle media system **1810** shown in the FIG. **18**.

[0117] The vehicle **1804** is then operable to perform some transportation, including a commute **1803** to a work based region **1802** in which the vehicle operator's workplace **1815** is located. Alternatively, the vehicle **1804** is then operable to perform some transportation to any other region **1830**. During the commute **1803**, the vehicle media system **1810** is operable to perform wireless download of media. This wireless download may also include receipt of streaming media as well via a wireless means. The wireless download may also include receipt in real time of a broadcast signal, be it digital or analog, without departing from the scope and spirit of the invention, as described above in the various embodiments of an integrated cable modem and cable television.

[0118] The manner is which the vehicle media system **1810** performs the wireless media download during the commute **1803** is one of any number of varied options. For example, the wireless media download may be achieved using a wireless tower **1844** that communicatively couples to a terrestrial-based wireless network **1845** that itself communicatively couples to a network from which media is downloaded. However, in alternative embodiments, the wireless media download may be achieved using a satellite **1842** that communicatively couples to a satellite-based wireless network **1843** that itself communicatively couples to the network from which

media is downloaded. Moreover, any other wireless interface **1847** may also be used to perform the communicative coupling to a network from which media is downloaded.

[0119] After the vehicle **1804** has arrived at the work based region **1802** where the workplace **1815** is located, or to any other region **1830**, then the vehicle media system **1810** is operable to perform playback of the downloaded media. Again, the vehicle media system **1810** may also be a portable/dockable media system in accordance with the invention thereby allowing a user of the vehicle media system **1810** to remove it from the vehicle **1804** and take it with him into the workplace **1802** or any other place where playback of the downloaded media may be performed. In addition, the any other region **1830**, whether it includes the work based region **1802** or the workplace **1815**, may also provide for high speed wireless LAN network access. In addition, as is often the case in many workplaces **1815**, there may also be provided high speed wireline network access, within the any other region **1830**, through which the vehicle media system **1810** may perform any of the functionality described above in various embodiments of the invention including download of media, receipt of streaming media, and receipt of a broadcast transmission.

[0120] FIG. **19** is a system diagram illustrating an embodiment of portable adapted media system operation **1900** that is performed in accordance with certain aspects of the present invention. A vehicle **1904** that includes a portable media system **1910** begins in a home based region **1901**. The vehicle **1904** may be parked at the operator's home **1905**. Alternatively, the home based region **1901** may simply be a region in which the portable media system **1910** is deemed to be in its "home region." Such terminology is sometimes used in the cellular telephone context. It may be that the portable media system **1910** is afforded reduced wireless connectivity rates or greater service within the home based region **1901**. Alternatively, the home based region **1901** may simply be the region in which the operator of the vehicle **1901** may access the functionality offered within his home **1905**. For example, in various embodiments of the invention as shown and described above, a garage or parking space for a vehicle, that may be at the home **1905**, may include network access via a high speed wireless LAN. Any of the various functionality described above within these embodiments is also included within the portable media system **1910** shown in the FIG. **19**.

[0121] The vehicle **1904** is then operable to perform some transportation, including a transit **1903** to an airport **1932** in which an aircraft **1933** is located. Alternatively, the vehicle **1904** is then operable to perform some transportation to any other region including a public facility supporting network access **1930**. During the transit **1903**, the portable media system **1910** is operable to perform wireless download of media. This wireless download may also include receipt of streaming media as well via a wireless means. The wireless download may also include receipt in real time of a broadcast signal, be it digital or analog, without departing from the scope and spirit of the invention, as described above in the various embodiments of an integrated cable modem and cable television and the various vehicle media systems.

[0122] The manner in which the portable media system **1910** performs the wireless media download during the transit **1903** is one of any number of varied options. For example, as described in other embodiments, the wireless media download may be achieved using a wireless tower that communicatively couples to a terrestrial-based wireless network that itself communicatively couples to a network from which media is downloaded. However, in alternative embodiments, the wireless media download may be achieved using a satellite that communicatively couples to a satellite-based wireless network that itself communicatively couples to the network from which media is downloaded. Moreover, any other wireless interface may also be used to perform the communicative coupling to a network from which media is downloaded.

[0123] After the vehicle **1904** has arrived at the airport **1932** where the aircraft **1933** is located, or to any other region, or a public facility supporting network access **1930**, then the portable media system **1910** is operable to perform playback of the downloaded media. Again, the portable media system **1910** may also be a vehicle media system in accordance with the invention as well. A user of the portable media system **1910** may then take the portable media system **1910** with him into the airport **1932**, and also onto the aircraft **1933**, if so desired. Playback of downloaded media may then also be performed on the portable media system **1910** during a flight **1914** of the aircraft **1933**. If permitted by the Federal Aeronautic Administration, the portable media system **1910** also offers the functionality to perform wireless download of media within the air using its own wireless communication functionality. Alternatively, the portable media system **1910** may also use a telephone on board the aircraft **1933** to access a network from which it may perform communicative coupling during the flight **1914** so that media may be received.

[0124] Within any of these various places, playback of the downloaded media may be performed. In addition, the public facility supporting network access **1930** may also provide for high speed wireless LAN network access. In addition, there may also be provided high speed wireline network access, within the public facility supporting network access **1930**, through which the portable media system **1910** may perform any of the functionality described above in various embodiments of the invention including download of media, receipt of streaming media, and receipt of a broadcast transmission.

[0125] In view of the above detailed description of the present invention and associated drawings, other modifications and variations will now become apparent to those skilled in the art. It should also be apparent that such other modifications and variations may be effected without departing from the spirit and scope of the present invention.

What is claimed is:

1. A method comprising:

in an audio/video (A/V) processing device:

receiving a broadcast signal that includes a first commercial;

detecting the first commercial in the broadcast signal;

obtaining a user commercial type selection; and

controlling whether to present the first commercial in the broadcast signal responsive to the user commercial type selection.

2. The method of claim **1**, further comprising:

determining a commercial placement location for relocating the first commercial within the broadcast signal.

3. The method of claim **2**, wherein the commercial placement location comprises a commercial sequence.

4. The method of claim **3**, wherein the commercial sequence comprises time positioning information for multiple different commercials in the broadcast signal, including the first commercial.

5. The method of claim 2, further comprising:
receiving an operator input; and
determining the commercial placement location responsive to the operator input.

6. The method of claim 2, wherein determining the commercial placement location comprises:
determining to place multiple commercials in the broadcast signal, including the first commercial, at a beginning of the broadcast signal.

7. The method of claim 2, further comprising grouping together commercials of a particular commercial type, including the first commercial.

8. The method of claim 1, wherein controlling whether to present comprises:
determining to remove the first commercial from the broadcast signal.

9. A device comprising:
communication circuitry configured to:
receive a broadcast signal that includes a first commercial; and
commercial management circuitry configured to:
detect the first commercial in the broadcast signal; and
relocate the first commercial to a placement location in the broadcast signal.

10. The device of claim 9, wherein the commercial management circuitry is configured to relocate the first commercial by:
determining a commercial sequence of the broadcast signal for multiple commercials, including the first commercial, in accordance with a user commercial sequence selection.

11. The device of claim 10, wherein the commercial management circuitry is configured to determine the commercial sequence by:
determining to place the multiple commercials, including the first commercial, at a beginning of the broadcast signal.

12. The device of claim 9, wherein the commercial management circuitry is configured to relocate the first commercial by:
determining to relocate the first commercial to a beginning of the broadcast signal.

13. The device of claim 9, wherein the commercial management circuitry is further configured to relocate the first commercial by removing the first commercial from the broadcast signal.

14. The device of claim 9, wherein the commercial management circuitry is further configured to:
remove multiple commercials, including the first commercial, in the broadcast signal in accordance with a user request.

15. The device of claim 9, further comprising commercial feedback circuitry configured to provide information related to a user commercial type selection to a company associated with the first commercial.

16. A device comprising:
communication circuitry configured to:
receive a broadcast signal that includes a multiple commercials;; and
commercial management circuitry configured to:
receive an operator type input indicative of a commercial type preference;
receive an operator location input indicate of a commercial location preference;
recognize the multiple commercials in the broadcast signal belong to a common commercial type characterized by the operator type input; and
relocate the multiple commercials belonging to the common commercial type to a sequence location in broadcast signal responsive to the commercial location preference.

17. The device of claim 16, wherein the commercial management circuitry is configured to relocate the multiple commercials by grouping the multiple commercials together in the broadcast signal.

18. The device of claim 16, wherein the commercial management circuitry is configured to relocate the multiple commercials to a beginning of the broadcast signal.

19. The device of claim 16, wherein the commercial management circuitry is further configured to remove a commercial from the broadcast signal.

20. The device of claim 16, further comprising commercial feedback circuitry configured to provide information related to the operator type input to a company associated with any of the multiple commercials.

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