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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,602	05/24/2001	Indra Laksono	VIXS 004	8010
34280	7590	10/26/2005	EXAMINER	
TIMOTHY W. MARKISON			VU, NGOC K	
VIXS, INC.			ART UNIT	
P.O.BOX 160727			PAPER NUMBER	
AUSTIN, TX 78736			2611	

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/864,602	LAKSONO, INDRA	
	Examiner	Art Unit	
	Ngoc K. Vu	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 and 28-79 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 28-79 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/24/01</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. It is noted that original claims 26 and 27 are missing which should be cancelled.

Applicant is reminded of 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 6, 7, 11, 13-15, 18-22, 29, 31-33, 36, 42-45, 48-50, 54, 55, 59, 61-63, 66-68, 73, 75 and 77 are rejected under 35 U.S.C. 102(e) as being anticipated by Williams (U.S. 6,493,873 B1).

Regarding claim 1, Williams teaches a method of multiplexing a plurality of channels in a multimedia system, the method comprises:

receiving a plurality of channels from a multimedia source (from satellite) (see col. 5, lines 59-62; col. 6, lines 47-63);

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receiving a plurality of channel selection commands (see col. 7, lines 31-47);

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels (see col. 11, lines 6-16);
and

encoding (via encoder 60) each of the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce a set of encoded channel data (see col. 10, lines 10-23).

Regarding claim 2, Williams teaches receiving a plurality of channel selection requests from a plurality of clients (see col. 10, lines 59-65; col. 11, lines 6-12); and processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes specific channel selection command (see col. 16, lines 5-19).

Regarding claims 6 and 7, Williams teaches receiving a second plurality of channels from a second multimedia source (from cable provider), the selecting a channel comprises selecting a channel from the plurality of channels, wherein each of the channel selection commands includes identify of the multimedia source or the second multimedia source and identify of the channel (see col. 10, lines 40-52; col. 6, lines 47-63).

Regarding claim 11, Williams teaches packetizing (via 58) data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes packet sequence number (i.e., PID number) (see col. 13, line 23 to col. 14, lines 14 and figure 3).

Regarding claim 13, Williams teaches framing data (via encoder 60) of each of the selected channels into a frame that includes header section and a data section, wherein the

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header section includes encryption (see figure 3; col. 9, line 65 to col. 10, line 23; col. 13, lines 56 to col. 14, line 15).

Regarding claim 14, Williams teaches conveying the frame in accordance with frequency division multiplexing data conveyance protocol (see col. 10, lines 24-38).

Regarding claim 15, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

Regarding claim 18, Williams teaches receiving a single channel from a multimedia source (from cable provider); selecting the single channel based on at least one of the plurality of channel selection commands to produce a selected single channel; and encoding the selecting single channel based on the data conveyance protocol (see col. 10, lines 40-52 and 10-23; col. 11, lines 6-21).

Regarding claim 19, Williams teaches receiving the single channel of at least one of data, audio data and video data from a modem (see col. 6, lines 47-52).

Regarding claim 20, Williams teaches receiving audio and video data for each of the plurality of channels from a satellite connection (see col. 5, lines 59-62).

Regarding claim 36, Williams teaches a tuning module for using in multimedia system, the tuning module comprises:

plurality of selectors (transmodulator channels), wherein each of the plurality of selectors is operably coupled to receive a plurality of channels, wherein each of the plurality of selectors outputs a channel of the plurality of channels based on a respective one of a plurality of channel selection commands to produce selected channels (see col. 9, lines 28-48; col. 10, lines 40-52);

encoding module (60) operably coupled to encode the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce encoded channel data (col.10, lines 10-23); and

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bus interface module (between encoder 60 and upconverter 62) operably coupled to transmit the encoded channel data in accordance with the data conveyance protocol (see figure 3).

Regarding claim 42, Williams teaches that second plurality of selectors (within level shifter 70), wherein each of the second plurality of selectors is operably coupled to receive a second plurality of channels, wherein each of the second plurality of selectors outputs a channel of the second plurality of channels based on a respective one of the plurality of channel selection commands to produce second selected channels (see col. 10, lines 40-52).

Regarding claim 48, Williams teaches that the system comprises controller (72) to control receiving of the plurality of channel selection commands and control the transmitting of the encoded channel data (see col. 10, lines 53-65; col. 11, lines 6-67).

Regarding claims 49 and 67, Williams teaches an apparatus for multiplexing a plurality of channels in a multimedia channels, the apparatus comprises: processing module (within unit 72); and memory (within unit 72) operably coupled to the processing module, wherein the memory includes operational instructions (col. 12, lines 1-6; col. 10, lines 53-59) that cause the processing module to:

receiving a plurality of channels from a multimedia source (from satellite) (see col. 5, lines 59-62; col. 6, lines 47-63);

receiving a plurality of channel selection commands (see col. 7, lines 31-47);

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels (see col. 11, lines 6-16);
and

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encoding (via encoder 60) each of the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce a set of encoded channel data (see col. 10, lines 10-23).

Claims 22, 50 and 68, see the similar interpretation for claim 2 above.

Claims 54 and 55, see the similar interpretation for claims 6 and 7 above.

Claims 29, 43, 59 and 73, see the similar interpretation for claim 11 above.

Claims 31, 44, 61 and 75, see the similar interpretation for claim 13 above.

Claims 32, 62 and 76, see the similar interpretation for claim 14 above.

Claims 33, 45, 63 and 77, see the similar interpretation for claim 15 above.

Claim 66, see the similar interpretation for claim 18 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, 28, 41, 56 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1).

Claims 8, 28, 41, 56 and 72, Williams teaches receiving the plurality of channel selection commands (see col. 7, lines 31-40; col. 10, lines 59-65). Williams does not teach decrypting each of the plurality of channel selection commands. Official Notice is taken that the technique of decrypting information is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by decrypting each of the plurality of channel selection commands for security purposes.

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6. Claims 3, 9, 10, 16, 17, 23, 34, 35, 46, 47, 51, 57, 58, 64, 65, 69, 78 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Basawapatna et al. (US 6,598,231 B1).

Regarding claims 3, 23, 51 and 69, Williams does not teach processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a specific channel selection request. However, Basawapatna teaches the steps of checking the customer authorization and determination whether or not the customer is a valid user (see col. 14, lines 19-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a specific channel selection request as taught by Basawapatna in order to verify the authorized user for requesting the channel selection.

Regarding claims 9, 10, 16, 17, 34, 35, 46, 47, 57, 58, 64, 65, 78 and 79, Williams teaches encoding the channels into packets based on the data conveyance protocol (see col. 9, line 59 to col. 10, line 16). Williams as modified by Basawapatna further teaches that the video signal are encrypted and/or compressed signals (see col. 7, lines 1-7).

7. Claims 4, 5, 24, 25, 37-40, 52, 53, 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Rakib et al. (US 20040172658 A1).

Regarding claims 4, 5, 24, 25, 37-40, 52, 53, 70 and 71, Williams teaches receiving and decoding the plurality of channel selection requests by decoder 73. These requests may be from the IRDs periodically to indicate to the control unit 72 which transponder signals are being actively requested by the IRDs (see col. 7, lines 31-40; col. 10, lines 59-65; col. 11, lines 1-4; and figure 3). Williams does not teach monitoring packets on a shared bus and identifying at

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least one of the packets to contain at least a portion of one of the plurality of channel selection commands. However, Rakib teaches that when the user selects a VOD selection from menu in which the pointer lies is transmitted via bus 81 to the receiver 82. The receiver 82 then uses an IP address of video server as a destination address and its own IP address as a source address and the requested selection to create an IP packet bearing the VOD request. This packet is then encapsulated into an Ethernet packet addressed to gateway 14 and sent to the gateway. The gateway strips off the Ethernet header and routes the IP packet to the appropriate video server (see 0083-0086). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by monitoring packets on a shared bus and identifying at least one of the packets to contain at least a portion of request as taught by Rakib in order to effectively recognize the user's request from the packet and provide the request to the video server.

8. Claims 12, 30, 60 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hartley et al. (US 64734414 B1).

Regarding claims 12, 30, 60 and 74, Williams does not teach conveying the packet using CSMA with collision detection. However, Hartley discloses that a protocol known as carrier sense multiple access with collision detection (CSMA/CD) is utilized to detect collisions during transmission (see col. 1, lines 25-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system Williams by providing CSMA/CD protocol in order to effectively detect collisions during transmission.

Conclusion

9. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an

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individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc K. Vu whose telephone number is 571-272-7306. The examiner can normally be reached on Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ngoc K. Vu
Primary Examiner
Art Unit 2611

August 16, 2005



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Indra Laksano **Examiner:** Vu, Ngoc K
Serial No: 09/864,602 **Art Group:** 2611
Filing Date: 05/24/2001 **Docket No:** VIXS 004
Title: METHOD AND APPARATUS OF MULTIPLEXING A PLURALITY OF
CHANNELS IN A MULTIMEDIA SYSTEM

Date: 3/9/2006

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

RESPONSE TO OFFICIAL ACTION

In response to an Office Action mailed on 10/26/2005 regarding the above-captioned patent application, the applicant respectfully submits the following amendment and response.

Amendment to the Specification - N/A

Amendment to the Claims begins on page 2 of this paper.

Amendment to the Drawings - N/A

Remarks/Arguments begins on page 34 of this paper.

CLAIM AMENDMENTS

1. (currently amended) A method of multiplexing a plurality of channels in a multimedia system, the method comprises:

receiving a plurality of channels from a multimedia source;

receiving a plurality of channel selection commands by:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list;

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels; and

encoding each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data.

2. (cancelled)

3. (original) The method of claim 2, wherein the processing the plurality of channel selection requests further comprises at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

4. (original) The method of claim 1, wherein the receiving the plurality of channel selection commands further comprises:

monitoring packets on a shared bus;

identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

5. (original) The method of claim 1, wherein the receiving the plurality of channel selection commands further comprises:

monitoring a shared bus at specific time intervals;

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands.

6. (original) The method of claim 1 further comprises:

receiving a second plurality of channels from a second multimedia source.

7. (original) The method of claim 6, wherein the selecting a channel further comprises:

selecting a channel from either the plurality of channels or the second plurality of channels per each of the channel selection commands, wherein each of the channel selection commands includes identity of the multimedia source or the second multimedia source and identity of the channel.

8. (original) The method of claim 1, wherein the receiving the plurality of channel selection commands further comprises at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

9. (original) The method of claim 1, wherein each of the plurality of channels is compressed, wherein the selecting a channel further comprises:

selecting a group of compressed channels of the plurality of channels per at least one of the plurality of channel selection commands, wherein the group of compressed channels includes the channel.

10. (original) The method of claim 9, wherein the encoding further comprises:

encoding the group of compressed channels into packets or frames based on the data conveyance protocol.

11. (original) The method of claim 1, wherein the encoding further comprises:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

12. (original) The method of claim 11 further comprises:

conveying the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

13. (original) The method of claim 1, wherein the encoding further comprises:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

14. (original) The method of claim 13 further comprises:

conveying the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

15. (original) The method of claim 1, wherein the encoding further comprises at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

16. (original) The method of claim 1 further comprises:

data compressing the selected channels prior to encoding.

17. (original) The method of claim 1 further comprises:

encrypting the selected channels prior to encoding.

18. (original) The method of claim 1 further comprises:

receiving a single channel from a multimedia source;

selecting the single channel based on at least one of the plurality of channel selection commands to produce a selected single channel; and

encoding the selecting single channel based on the data conveyance protocol.

19. (original) The method of claim 18, wherein the receiving the single channel further comprises at least one of:

receiving the single channel of audio data and video data from an output of a video cassette recorder;

receiving the single channel of audio data and video data from an output of a DVD player;

receiving the single channel of audio data and video data from an output of a camcorder;

receiving the single channel of audio data from an output of a compact disk player;

receiving the single channel of audio data from an output of a cassette player;

receiving the single channel of at least one of data and audio data from a telephone connection; and

receiving the single channel of at least one of data, audio data, and video data from a modem.

20. (original) The method of claim 1, wherein the receiving the plurality of channels further comprises at least one of:

receiving audio and video data for each of the plurality of channels from a satellite connection;

receiving audio and video data for each of the plurality of channels from a set-top box;

receiving audio and video data for each of the plurality of channels from a cable connection;

receiving audio and video data for each of the plurality of channels from a high-definition television receiver; and

receiving audio and video data for each of the plurality of channels from an antenna.

21. (currently amended) A method of multiplexing channels in a multimedia system, the method comprises:

receiving a channel from each of a plurality of sources to produce a plurality of channels;

receiving a plurality of channel selection commands;

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encoding each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data by packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of: identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

22. (original) The method of claim 21, wherein the receiving the channel selection commands further comprises:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

23. (original) The method of claim 22, wherein the processing the plurality of channel selection requests further comprises at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

24. (original) The method of claim 21, wherein the receiving the plurality of channel selection commands further comprises:

monitoring packets on a shared bus;

identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

25. (original) The method of claim 21, wherein the receiving the plurality of channel selection commands further comprises:

monitoring a shared bus at specific time intervals;

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

26. (cancelled)

27. (cancelled)

28. (original) The method of claim 21, wherein the receiving the plurality of channel selection commands further comprises at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

29. (cancelled)

30. (currently amended) The method of claim 21~~29~~ further comprises:

conveying the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

31. (original) The method of claim 21, wherein the encoding further comprises:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

32. (original) The method of claim 31 further comprises:

conveying the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

33. (original) The method of claim 31, wherein the encoding further comprises at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

34. (original) The method of claim 21 further comprises:

data compressing the selected channels prior to encoding.

35. (original) The method of claim 21 further comprises:

encrypting the selected channels prior to encoding.

36. (currently amended) A tuning module for using in multimedia system, the tuning module comprises:

plurality of selectors, wherein each of the plurality of selectors is operably coupled to receive a plurality of channels, wherein each of the plurality of selectors outputs a channel of the plurality of channels based on a respective one of a plurality of channel selection commands to produce selected channels;

encoding module operably coupled to encode the selected channels based on a data conveyance protocol of the multimedia system to produce encoded channel data; and

bus interface module operably coupled to transmit the encoded channel data in accordance with the data conveyance protocol, the bus interface module including a receiving module that is operably coupled to monitor packets on a shared bus and to identify at least one of the packets to contain at least a portion of one of the plurality of channel selection commands to produce an identified packet.

37. (cancelled)

38. (currently amended) The tuning module of claim 38~~37~~ further comprises:

decoding module operably coupled to decode the identified packet, based on the data conveyance protocol, to recapture at least a portion of the one of the plurality of channel selection commands.

39. (original) The tuning module of claim 36, wherein the bus interface module further comprises:

monitoring module operably coupled to monitor a shared bus at specific time intervals for a data frame that contains at least a portion of one of the plurality of channel selection commands.

40. (original) The tuning module of claim 39 further comprises:

decoding module operably coupled to decode, based on the data conveyance protocol, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands.

41. (original) The tuning module of claim 36, wherein the bus interface module further comprises at least one of:

decrypting module for decrypting each of the plurality of channel selection commands; and

decompressing module for decompressing each of the plurality of channel selection commands.

42. (original) The tuning module of claim 36 further comprises:

second plurality of selectors, wherein each of the second plurality of selectors is operably coupled to receive a second plurality of channels, wherein each of the second plurality of selectors outputs a channel of the second plurality of channels based on a respective one of the plurality of channel selection commands to produce second selected channels.

43. (original) The tuning module of claim 36, wherein the encoding module further comprises:

packetizing module for packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity of the selected channel, type of data of the selected channel, identity of a multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

44. (original) The tuning module of claim 36, wherein the encoding module further comprises:

framing module for framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

45. (original) The tuning module of claim 36, wherein the encoding module further comprises at least one of:

multilevel encoding module for multilevel encoding of data of each of the selected channels;

non return to zero (NRZ) encoding module for NRZ encoding of the data of each of the selected channels;

Manchester encoding module for Manchester encoding of the data of each of the selected channels;

block encoding module for block encoding of the data of each of the selected channels; and

nB/mB encoding module for nB/mB encoding of the data of each of the selected channels, where $n < m$.

46. (original) The tuning module of claim 36 further comprises:

data compressing module operably coupled to the plurality of selectors and the encoding module, wherein the data compressing module receives the selected channels from the plurality of selectors, compresses the selected channels to produce compressed channels, and provides the compressed channels to the encoding module.

47. (original) The tuning module of claim 36 further comprises:

encryption module operably coupled to the plurality of selectors and the encoding module, wherein the encryption module receives the selected channels from the plurality of selectors, encrypts the selected channels to produce encrypted channels, and provides the encrypted channels to the encoding module.

48. (original) The tuning module of claim 36 further comprises:

bus controller operably coupled to the bus interface module, wherein the bus controller controls receiving of the plurality of channel selection commands and controls the transmitting of the encoded channel data.

49. (currently amended) An apparatus for multiplexing a plurality of channels in a multimedia system, the apparatus comprises:

processing module; and

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receive a plurality of channels from a multimedia source;

receive a plurality of channel selection commands by:
monitoring a shared bus at specific time
intervals; and

identifying a data frame at one of the specific
time intervals that contains at least a portion
of one of the plurality of channel selection
commands;

select a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encode each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data.

50. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to receive the channel selection commands by:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

51. (original) The apparatus of claim 50, wherein the memory further comprises operational instructions that cause the processing module to process the plurality of channel selection requests by at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

52. (cancelled)

53. (currently amended) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands further by:

~~monitoring a shared bus at specific time intervals;~~

~~identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands; and~~

decoding, based on the data conveyance protocol, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands.

54. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

receive a second plurality of channels from a second multimedia source.

55. (original) The apparatus of claim 54, wherein the memory further comprises operational instructions that cause the processing module to select a channel by:

selecting a channel from either the plurality of channels or the second plurality of channels per each of the channel selection commands, wherein each of the channel selection commands includes identity of the multimedia source or the second multimedia source and identity of the channel.

56. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

57. (original) The apparatus of claim 49, wherein each of the plurality of channels is compressed, and wherein the memory further comprises operational instructions that cause the processing module to select a channel by:

selecting a group of compressed channels of the plurality of channels per at least one of the plurality of channel selection commands, wherein the group of compressed channels includes the channel.

58. (original) The apparatus of claim 57, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

encoding the group of compressed channels into packets or frames based on the data conveyance protocol.

59. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

60. (original) The apparatus of claim 59, wherein the memory further comprises operational instructions that cause the processing module to:

convey the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

61. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

62. (original) The apparatus of claim 61, wherein the memory further comprises operational instructions that cause the processing module to:

convey the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

63. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

64. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

compress the selected channels prior to encoding.

65. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

encrypt the selected channels prior to encoding.

66. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

receive a single channel from a multimedia source;

select the single channel based on at least one of the plurality of channel selection commands to produce a selected single channel; and

encode the selecting single channel based on the data conveyance protocol.

67. (currently amended) An apparatus for multiplexing channels in a multimedia system, the apparatus comprises:

processing module; and

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receiving a channel from each of a plurality of sources to produce a plurality of channels;

receiving a plurality of channel selection commands, wherein each of the plurality of channel selection commands includes an identity of one of the plurality of sources, and an identity of the channel;

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encoding each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data.

68. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the channel selection commands by:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

69. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to process the plurality of channel selection requests by at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

70. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by:

monitoring packets on a shared bus;

identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

71. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by:

monitoring a shared bus at specific time intervals;

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

72. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

73. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

74. (original) The apparatus of claim 73, wherein the memory further comprises operational instructions that cause the processing module to:

convey the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

75. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encoding each of the selected channels by:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

76. (original) The apparatus of claim 75, wherein the memory further comprises operational instructions that cause the processing module to:

convey the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

77. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

78. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to:

compress the selected channels prior to encoding.

79. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to:

encrypt the selected channels prior to encoding.

REMARKS/ARGUMENTS

1. In the above referenced Office Action, the Examiner rejected claims 1-2, 6-7, 11, 13-15, 18-22, 31-33, 36, 42-45, 48-50, 54-55, 59, 61-63, 66, 73, 75 and 77 under 35 USC § 102(e) as being anticipated by Williams (U.S. Patent No. 6,493,873); claims 8, 28, 41, 56 and 72 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Official Notice; claims 3, 9-10, 16-17, 23, 34-35, 46-47, 51, 57-58, 64-65, 69, 78-79 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Basawapatna et al. (U.S. Patent No. 6,598,231); claims 4-5, 24-25, 37-40, 52-53, 70-71 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Rakib (US 20040172658); and claims 12, 30, 60 and 74 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Hartley (U.S. Patent No. 6,473,414).

Claims 1, 3-25, 28, 30-36, 38-51, and 53-79 are currently pending in this application. Claims 1, 21, 30, 36, 38, 49, 67 have been amended. Claims 2, 26-27, 29, 37, and 52 have been cancelled without prejudice. The rejections above have been traversed and, as such, the applicant respectfully requests reconsideration of the allowability of claims 1, 3-25, 28, 30-36, 38-51, and 53-79.

2. As discussed above claim 1 was rejected based on Williams. Claim 1 has been amended to include material drawn from cancelled claim 2. In particular, claim 1 as now includes:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

Williams does not disclose suggest or teach a channel selection command that includes a last channel selection command, a next channel selection command, a previous channel selection command, a favorite channel selection command or a select channel from user define list. For this reason, Applicant believes that claim 1 and claims 2-20 that depend therefrom, are patentably distinct from the prior art.

3. As discussed above, Claim 21 was rejected based on Williams. Claim 21 has been amended to include the subject matter of claim 29. In rejecting claim 29, the Examiner stated that Williams, "includes a header section and a data section, wherein the header section includes packet sequence number (i.e. PID number) (see col. 13, line 23 to col. 14, lines 14 and figure 3)." Applicant has reviewed this section and Williams as a whole and fails to see a reference to a PID number or packet sequence number. Williams simply does not teach this feature. For this reason, Applicant believes that claim 21 and claims 22-25, 28, and 30-35 that depend therefrom, are patentably distinct from the prior art.

Similarly, Applicant believes that claims 11, 43, 59 and 73 are allowable for this same reason.

4. As discussed above, Claim 36 was rejected based on Williams. Claim 36 has been amended to include the subject matter of claim 37 that was rejected based on the combination of Williams and Rakib. In making this rejection, Examiner makes the following statement,

Rakib teaches that when the user selects a VOD selection from menu in which the pointer lies is transmitted via bus 81 to the receiver 82. The receiver 82 then uses an IP address of video server as a destination addressed and its own IP address as a source address and the requested selection to create an IP packet bearing the VOD request. This packet is then encapsulated into

an Ethernet packet addressed to gateway 14 and sent to the gateway. The gateway strips off the Ethernet header and routes the IP packet to the appropriate video server.

This particular configuration lacks the "shared bus" structure of the receiving module of amended claim 36 that monitors packets on a shared bus to identify a packet that contains at least a portion of the plurality of channel selection commands. The receiver 82 of Rakib creates packets based on data from line 81 that are sent over a LAN, as opposed to monitoring "packets on a shared bus to identify a packet that contains at least a portion of the plurality of channel selection commands".

For this reason, Applicant believes that claim 36, and claims 38-48 that depend therefrom, are patentably distinct from the prior art.

Similarly, Applicant believes that claims 4, 24, and 70 are allowable for this same reason.

5. As discussed above, Claim 49 was rejected based on Williams. Claim 49 has been amended to include the subject matter from claim 53 that was rejected based on the combination of Williams and Rakib. As in the rejection of claim 37 discussed above, the Examiner stated in the rejection of claim 53:

Rakib teaches that when the user selects a VOD selection from menu in which the pointer lies is

transmitted via bus 81 to the receiver 82. The receiver 82 then uses an IP address of video server as a destination addressed and its own IP address as a source address and the requested selection to create an IP packet bearing the VOD request. This packet is then encapsulated into an Ethernet packet addressed to gateway 14 and sent to the gateway. The gateway strips off the Ethernet header and routes the IP packet to the appropriate video server.

However, amended claim 49 now recites:

"monitoring a shared bus at specific time intervals; and

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands;"

Both Williams and Rakib entirely lack any teaching relating to monitoring a shared bus at specific time intervals, or identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands.

For this reason, Applicant believes that claim 49, and claims 50-51 and 53-66 that depend therefrom, are patentably distinct from the prior art.

Similarly, Applicant believes that claims 5, 25, and 39-40 and 71 are allowable for this same reason.

6. Claim 67 has been amended to include the following:

"receiving a plurality of channel selection commands, wherein each of the plurality of channel selection commands includes an identity of one of the plurality of sources, and an identity of the channel"

While Williams engages in a vestigial discussion (that may not be an enabling) relating to transmodulating data from alternative sources in Col. 10 lines 40 - 52, Williams does not address, disclose, suggest or teach receiving a plurality of channel selection commands, wherein each of the plurality of channel selection commands includes an identity of one of the plurality of sources, and an identity of the channel.

For this reason, Applicant believes that claim 67, and claims 68-79 that depend therefrom, are patentably distinct from the prior art.

Similarly, Applicant believes that claims 7 and 55 are allowable for this same reason.


For the foregoing reasons, the applicant believes that claims 1, 3-25, 28, 30-36, 38-51, and 53-79 are in condition for allowance and respectfully request that they be passed to allowance.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present invention.

Accompanying this Response is a Petition for a two-month extension of time, together with the appropriate payment for such. The Commissioner is also authorized to charge any additional fees that are required or credit any overpayment to Deposit Account No. 50-1835 (VIXS 004).

RESPECTFULLY SUBMITTED,

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CERTIFICATE OF MAILING 37 C.F.R 1.8	
I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on the date below:	
<u>March 9, 2006</u> Date	 Sherry Wolf McWhinnie



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,602	05/24/2001	Indra Laksono	VIXS 004	8010
34280	7590	05/22/2006	EXAMINER	
TIMOTHY W. MARKISON			VU, NGOC K	
VIXS, INC.			ART UNIT	
P.O.BOX 160727			PAPER NUMBER	
AUSTIN, TX 78736			2623	

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/864,602	LAKSONO, INDRA	
	Examiner	Art Unit	
	Ngoc K. Vu	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-25,28,30-36,38-51 and 53-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 49-53 and 53-66 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-24,28,30-36,38,41-48,67-70 and 72-79 is/are rejected.
- 7) ☒ Claim(s) 5,25,39,40 and 71 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments filed March 31, 2006 with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 36 is objected to because of the following informalities: it appears that the term "to contain" is typographical error. Please change the term "to contain" into "that contains".
Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It appears that claim 3 depends on the canceled claim 2, therefore, the scope of claim 3 cannot be determined.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 6, 7, 11, 13-15, 18-22 and 31-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Williams (U.S. 6,493,873 B1).

Regarding claim 1, Williams teaches a method of multiplexing a plurality of channels in a multimedia system, the method comprises:

receiving a plurality of channels from a multimedia source (from satellite) (see col. 5, lines 59-62; col. 6, lines 47-63);

receiving a plurality of channel selection commands by: receiving a plurality of channel selection requests from a plurality of clients, a plurality of channel select requests (see col. 7, lines 31-37; col. 10, lines 59-65; col. 6, lines 37-42); and processing the plurality of channel selection requests (demodulating and decoding the requests) to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes last channel selection command (i.e., latest channel selection request) (see col. 16, lines 5-19).

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels (see col. 11, lines 6-16); and

encoding (via encoder 60) each of the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce a set of encoded channel data (see col. 10, lines 10-23).

Regarding claims 6 and 7, Williams teaches receiving a second plurality of channels from a second multimedia source (from cable provider), the selecting a channel comprises selecting a channel from the plurality of channels, wherein each of the channel selection commands includes identify of the multimedia source or the second multimedia source and identify of the channel (see col. 10, lines 40-52; col. 6, lines 47-63).

Regarding claim 11, Williams teaches packetizing (via 58) data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes packet sequence number (i.e., PID number) (see col. 13, line 23 to col. 14, lines 14 and figure 3).

Regarding claim 13, Williams teaches framing data (via encoder 60) of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes the identity the selected channel (see figure 3; col. 9, line 65 to col. 10, line 23; col. 13, lines 56 to col. 14, line 15).

Regarding claim 14, Williams teaches conveying the frame in accordance with frequency division multiplexing data conveyance protocol (see col. 10, lines 24-38).

Regarding claim 15, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

Regarding claim 18, Williams teaches receiving a single channel from a multimedia source (from cable provider); selecting the single channel based on at least one of the plurality of channel selection commands to produce a selected single channel; and encoding the selecting single channel based on the data conveyance protocol (see col. 10, lines 40-52 and 10-23; col. 11, lines 6-21).

Regarding claim 19, Williams teaches receiving the single channel of at least one of data, audio data and video data from a modem (see col. 6, lines 47-52).

Regarding claim 20, Williams teaches receiving audio and video data for each of the plurality of channels from a satellite connection (see col. 5, lines 59-62).

Regarding claim 21, Williams teaches a method of multiplexing a plurality of channels in a multimedia system, the method comprises:

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receiving a plurality of channels from a multimedia source (from satellite) (see col. 5, lines 59-62; col. 6, lines 47-63);

receiving a plurality of channel selection commands (see col. 7, lines 31-37);

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels (see col. 11, lines 6-16);
and

encoding (via encoder 60) each of the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce a set of encoded channel data (see col. 10, lines 10-23) by packetizing data of each of the selected channels (packetizing data by packetizer 58) into a packet that includes a header section and a data section (it is noted that a header field and data field are inherently included in a packet), wherein the header section includes the identity of the selected channel (since the packetizer 58 packetizes the selected channel data, the header field inherently includes service channel ID) (see col. 9, line 59 to col. 10, line 9).

Claim 22, Williams teaches receiving a plurality of channel selection requests from a plurality of clients, a plurality of channel select requests (see col. 7, lines 31-37; col. 10, lines 59-65; col. 6, lines 37-42); and processing the plurality of channel selection requests (demodulating and decoding the requests) to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes last channel selection command (i.e., latest channel selection request) (see col. 16, lines 5-19).

Claim 31, see the similar interpretation for claim 13 above.

Claim 32, see the similar interpretation for claim 14 above.

Claim 33, see the similar interpretation for claim 15 above.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8-10, 16, 17, 28, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1).

Claims 8 and 28, Williams teaches receiving the plurality of channel selection commands (see col. 7, lines 31-40; col. 10, lines 59-65). Williams does not teach decrypting each of the plurality of channel selection commands. Official Notice is taken that the technique of decrypting information is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by decrypting each of the plurality of channel selection commands for security purposes.

Regarding claims 9, 10, 16, 17, 34 and 35, Williams teaches encoding the channels into packets based on the data conveyance protocol (see col. 9, line 59 to col. 10, line 16). Williams does not teach compressing data and encrypting data. Official Notice is taken that encrypting and/or compressing data are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams by encrypting and/or compressing data for security purpose and for reducing bandwidth purpose.

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Basawapatna et al. (US 6,598,231 B1).

Regarding claim 23, Williams does not teach processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a

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specific channel selection request. However, Basawapatna teaches the steps of checking the customer authorization and determination whether or not the customer is a valid user (see col. 14, lines 19-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a specific channel selection request as taught by Basawapatna in order to verify the authorized user for requesting the channel selection.

10. Claim 4, 24, 36, 38 and 41-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hodge et al. (US 20010005908 A1).

Regarding claim 36, Williams teaches a tuning module for using in multimedia system, the tuning module comprises:

plurality of selectors (transmodulator channels), wherein each of the plurality of selectors is operably coupled to receive a plurality of channels, wherein each of the plurality of selectors outputs a channel of the plurality of channels based on a respective one of a plurality of channel selection commands to produce selected channels (see col. 9, lines 28-48; col. 10, lines 40-52);

encoding module (60) operably coupled to encode the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce encoded channel data (col.10, lines 10-23); and

bus interface module (between encoder 60 and upconverter 66) operably coupled to transmit the encoded channel data in accordance with the data conveyance protocol (DVB cable) (see figure 3).

Williams further teaches a receiving module (72, 73) identifies at least one of the packets that contains channel selection commands (from the requests) to produce an identified packet

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(since the requests are digital requests) (see col. 6, lines 37-42; col. 10, lines 59-67 and figure 3).

It is noted that the system of Williams includes receiving and decoding the plurality of channel selection requests by decoder 73. The requests may be sent from the IRDs periodically to indicate to the control unit 72 which transponder signals are being actively requested by the IRDs (see col. 7, lines 31-40; col. 10, lines 59-65; col. 11, lines 1-4).

Williams does not explicitly teach monitoring packets on a shared bus with respect to claims 4, 24 and further regarding claim 36. However, Hodge teaches that provider or headend 100 comprises a shared bus 120 (see figure 4) to provide an architecture which allows the provider or headend to share headed resources and to receive upstream data signals. It is further noted that the shared bus includes address, data and control elements which are communicated in a serial bus or paralled bus (see 0045, 0082, 0061 and figure 4). From this view, Hodge teaches monitoring received data on a shared bus 120. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by using a shared bus 120 at headend as taught by Hodge for purposes of sharing headed resources and receiving upstream data signals with less cost.

Regarding claim 38, the combination of Williams teaches receiving and decoding the plurality of channel selection requests by decoder 73. These requests may be from the IRDs periodically to indicate to the control unit 72 which transponder signals are being actively requested by the IRDs (see Williams: col. 7, lines 31-40; col. 10, lines 59-65; col. 11, lines 1-4; and figure 3).

Regarding claim 41, Williams teaches receiving the plurality of channel selection commands (see col. 7, lines 31-40; col. 10, lines 59-65). Williams does not teach decrypting each of the plurality of channel selection commands. Official Notice is taken that the technique

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of decrypting information is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by decrypting each of the plurality of channel selection commands for security purposes.

Regarding claim 42, Williams teaches that second plurality of selectors (within level shifter 70), wherein each of the second plurality of selectors is operably coupled to receive a second plurality of channels, wherein each of the second plurality of selectors outputs a channel of the second plurality of channels based on a respective one of the plurality of channel selection commands to produce second selected channels (see col. 10, lines 40-52).

Regarding claim 43, Williams teaches packetizing (via 58) data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes packet sequence number (i.e., PID number) (see col. 13, line 23 to col. 14, lines 14 and figure 3).

Regarding claim 44, Williams teaches framing data (via encoder 60) of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes encryption (see figure 3; col. 9, line 65 to col. 10, line 23; col. 13, lines 56 to col. 14, line 15).

Regarding claim 45, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

With respect to claims 46-47, Williams teaches encoding the channels into packets based on the data conveyance protocol (see col. 9, line 59 to col. 10, line 16). Williams does not teach compressing data and encrypting data. Official Notice is taken that encrypting and/or compressing data are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of

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Williams by encrypting and/or compressing data for security purpose and for reducing bandwidth purpose.

Regarding claim 48, Williams teaches that the system comprises controller (72) to control receiving of the plurality of channel selection commands and control the transmitting of the encoded channel data (see col. 10, lines 53-65; col. 11, lines 6-67).

11. Claims 12 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hartley et al. (US 64734414 B1).

Regarding claims 12 and 30, Williams does not teach conveying the packet using CSMA with collision detection. However, Hartley discloses that a protocol known as carrier sense multiple access with collision detection (CSMA/CD) is utilized to detect collisions during transmission (see col. 1, lines 25-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system Williams by providing CSMA/CD protocol in order to effectively detect collisions during transmission.

12. Claims 67, 68, 72, 73 and 75-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hoarty (US 5,883,661 A).

Regarding claim 67, Williams teaches an apparatus for multiplexing a plurality of channels in a multimedia channels, the apparatus comprises: processing module (within unit 72); and memory (within unit 72) operably coupled to the processing module, wherein the memory includes operational instructions (col. 12, lines 1-6; col. 10, lines 53-59) that cause the processing module to:

receiving a plurality of channels from a multimedia source (from satellite) (see col. 5, lines 59-62; col. 6, lines 47-63);

receiving a plurality of channel selection commands (see col. 7, lines 31-47);

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selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels (see col. 11, lines 6-16); and

encoding (via encoder 60) each of the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce a set of encoded channel data (see col. 10, lines 10-23).

Williams does not explicitly teach the channel selection includes an identity of one of the plurality of sources, and an identity of the channel. However, Hoarty teaches that system manager 22 receives a request for interactive service upon an interactive channel selection by a user from home interface controller. Particularly, the user selects the interactive service by picking a channel number from a single numerical sequence of channel numbers via a remote control. That is, the request includes interactive service identifier associated with a channel number selected by the user so that the provider can deliver the requested interactive service to the requesting subscriber (see col. 10, lines 33-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by receiving a request for a particular service included an identity service or source associated with a channel number selected by the user as taught by Hoarty to allow the provider effectively deliver the requested interactive service to the requesting subscriber.

Regarding claim 68, Williams teaches receiving a plurality of channel selection requests from a plurality of clients, a plurality of channel select requests (see col. 7, lines 31-37; col. 10, lines 59-65; col. 6, lines 37-42); and processing the plurality of channel selection requests (demodulating and decoding the requests) to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes last channel selection command (i.e., latest channel selection request) (see col. 16, lines 5-19).

Regarding claim 72, Williams teaches receiving the plurality of channel selection commands (see col. 7, lines 31-40; col. 10, lines 59-65). Williams does not teach decrypting each of the plurality of channel selection commands. Official Notice is taken that the technique of decrypting information is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by decrypting each of the plurality of channel selection commands for security purposes.

Regarding claim 73, Williams teaches packetizing (via 58) data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes packet sequence number (i.e., PID number) (see col. 13, line 23 to col. 14, lines 14 and figure 3).

Regarding claim 75, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

Regarding claim 76, Williams teaches conveying the frame in accordance with frequency division multiplexing data conveyance protocol (see col. 10, lines 24-38).

Regarding claim 77, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

Regarding claims 78 and 79, Williams teaches encoding the channels into packets based on the data conveyance protocol (see col. 9, line 59 to col. 10, line 16). Williams does not teach compressing data and encrypting data. Official Notice is taken that encrypting and/or compressing data are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams by encrypting and/or compressing data for security purpose and for reducing bandwidth purpose.

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13. Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hoarty (US 5,883,661 A) and further in view of Basawapatna et al. (US 6,598,231 B1).

Regarding claim 69, Williams does not teach processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a specific channel selection request. However, Basawapatna teaches the steps of checking the customer authorization and determination whether or not the customer is a valid user (see col. 14, lines 19-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams by processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a specific channel selection request as taught by Basawapatna in order to verify the authorized user for requesting the channel selection.

14. Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hoarty (US 5,883,661 A) and further in view of Hodge et al. (US 20010005908 A1).

Regarding claim 70, it is noted that the system of Williams includes receiving and decoding the plurality of channel selection requests by decoder 73. The requests may be sent from the IRDs periodically to indicate to the control unit 72 which transponder signals are being actively requested by the IRDs (see col. 7, lines 31-40; col. 10, lines 59-65; col. 11, lines 1-4).

Williams does not explicitly teach monitoring packets on a shared bus. However, Hodge teaches that provider or headend 100 comprises a shared bus 120 (see figure 4) to provide an architecture which allows the provider or headend to share headed resources and to receive upstream data signals. It is further noted that the shared bus includes address, data and control elements which are communicated in a serial bus or paralalled bus (see 0045, 0082, 0061 and

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figure 4). From this view, Hodge teaches monitoring received data on a shared bus 120.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams and Hoarty by using a shared bus 120 at headend as taught by Hodge for purposes of sharing headed resources and receiving upstream data signals with less cost.

15. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hoarty (US 5,883,661 A) and further in view of Hartley et al. (US 64734414 B1).

Regarding claim 74, Williams does not teach conveying the packet using CSMA with collision detection. However, Hartley discloses that a protocol known as carrier sense multiple access with collision detection (CSMA/CD) is utilized to detect collisions during transmission (see col. 1, lines 25-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system Williams by providing CSMA/CD protocol in order to effectively detect collisions during transmission.

Allowable Subject Matter

16. Claims 5, 25, 39, 40 and 71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Claims 49-51 and 53-66 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of the record fails to teach or fairly suggest the limitation "monitoring a shared bus at specific time intervals; and identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands" as recited in claim 49.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc K. Vu whose telephone number is 571-272-7306. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ngoc K. Vu
Primary Examiner
Art Unit 2623

May 17, 2006



TEW 2611

PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Indra Laksano **Examiner:** Vu, Ngoc K
Serial No: 09/864,602 **Art Group:** 2611
Filing Date: 05/24/2001 **Docket No:** VIXS 004
Title: METHOD AND APPARATUS OF MULTIPLEXING A PLURALITY OF
CHANNELS IN A MULTIMEDIA SYSTEM

Date: 6/14/2006

Honorable Commissioner of
Patents and Trademarks,
Alexandria, Virginia 22313

In response to an Office Action mailed on 5/22/2006
regarding the above-captioned patent application, the
applicant respectfully submits the following amendment and
response.

CLAIM AMENDMENTS

1. (previously presented) A method of multiplexing a plurality of channels in a multimedia system, the method comprises:

receiving a plurality of channels from a multimedia source;

receiving a plurality of channel selection commands by:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list;

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels; and

encoding each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data.

2. (cancelled)

3. (currently amended) The method of claim 12, wherein the processing the plurality of channel selection requests further comprises at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

4. (original) The method of claim 1, wherein the receiving the plurality of channel selection commands further comprises:

monitoring packets on a shared bus;

identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

5. (original) The method of claim 1, wherein the receiving the plurality of channel selection commands further comprises:

monitoring a shared bus at specific time intervals;

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands.

6. (original) The method of claim 1 further comprises:

receiving a second plurality of channels from a second multimedia source.

7. (original) The method of claim 6, wherein the selecting a channel further comprises:

selecting a channel from either the plurality of channels or the second plurality of channels per each of the channel selection commands, wherein each of the channel selection commands includes identity of the multimedia source or the second multimedia source and identity of the channel.

8. (original) The method of claim 1, wherein the receiving the plurality of channel selection commands further comprises at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

9. (original) The method of claim 1, wherein each of the plurality of channels is compressed, wherein the selecting a channel further comprises:

selecting a group of compressed channels of the plurality of channels per at least one of the plurality of channel selection commands, wherein the group of compressed channels includes the channel.

10. (original) The method of claim 9, wherein the encoding further comprises:

encoding the group of compressed channels into packets or frames based on the data conveyance protocol.

11. (original) The method of claim 1, wherein the encoding further comprises:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

12. (original) The method of claim 11 further comprises:

conveying the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

13. (original) The method of claim 1, wherein the encoding further comprises:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

14. (original) The method of claim 13 further comprises:

conveying the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

15. (original) The method of claim 1, wherein the encoding further comprises at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

16. (original) The method of claim 1 further comprises:

data compressing the selected channels prior to encoding.

17. (original) The method of claim 1 further comprises:

encrypting the selected channels prior to encoding.

18. (original) The method of claim 1 further comprises:

receiving a single channel from a multimedia source;

selecting the single channel based on at least one of the
plurality of channel selection commands to produce a
selected single channel; and

encoding the selecting single channel based on the data
conveyance protocol.

19. (original) The method of claim 18, wherein the
receiving the single channel further comprises at least one
of:

receiving the single channel of audio data and video data
from an output of a video cassette recorder;

receiving the single channel of audio data and video data from an output of a DVD player;

receiving the single channel of audio data and video data from an output of a camcorder;

receiving the single channel of audio data from an output of a compact disk player;

receiving the single channel of audio data from an output of a cassette player;

receiving the single channel of at least one of data and audio data from a telephone connection; and

receiving the single channel of at least one of data, audio data, and video data from a modem.

20. (original) The method of claim 1, wherein the receiving the plurality of channels further comprises at least one of:

receiving audio and video data for each of the plurality of channels from a satellite connection;

receiving audio and video data for each of the plurality of channels from a set-top box;

receiving audio and video data for each of the plurality of channels from a cable connection;

receiving audio and video data for each of the plurality of channels from a high-definition television receiver; and

receiving audio and video data for each of the plurality of channels from an antenna.

21. (previously presented) A method of multiplexing channels in a multimedia system, the method comprises:

receiving a channel from each of a plurality of sources to produce a plurality of channels;

receiving a plurality of channel selection commands;

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encoding each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data by packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of: identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

22. (original) The method of claim 21, wherein the receiving the channel selection commands further comprises:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands,

wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

23. (original) The method of claim 22, wherein the processing the plurality of channel selection requests further comprises at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

24. (original) The method of claim 21, wherein the receiving the plurality of channel selection commands further comprises:

monitoring packets on a shared bus;

identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

25. (original) The method of claim 21, wherein the receiving the plurality of channel selection commands further comprises:

monitoring a shared bus at specific time intervals;

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

26. (cancelled)

27. (cancelled)

28. (original) The method of claim 21, wherein the receiving the plurality of channel selection commands further comprises at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

29. (cancelled)

30. (previously presented) The method of claim 21 further comprises:

conveying the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

31. (original) The method of claim 21, wherein the encoding further comprises:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

32. (original) The method of claim 31 further comprises:

conveying the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

33. (original) The method of claim 31, wherein the encoding further comprises at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

34. (original) The method of claim 21 further comprises:

data compressing the selected channels prior to encoding.

35. (original) The method of claim 21 further comprises:

encrypting the selected channels prior to encoding.

36. (currently amended) A tuning module for using in multimedia system, the tuning module comprises:

plurality of selectors, wherein each of the plurality of selectors is operably coupled to receive a plurality of channels, wherein each of the plurality of selectors outputs a channel of the plurality of channels based on a respective one of a plurality of channel selection commands to produce selected channels;

encoding module operably coupled to encode the selected channels based on a data conveyance protocol of the multimedia system to produce encoded channel data; and

bus interface module operably coupled to transmit the encoded channel data in accordance with the data conveyance protocol, the bus interface module including a receiving module that is operably coupled to monitor packets on a shared bus and to identify at least one of the packets ~~to~~that contains at least a portion of one of the plurality of channel selection commands to produce an identified packet.

37. (cancelled)

38. (previously presented) The tuning module of claim 38 further comprises:

decoding module operably coupled to decode the identified packet, based on the data conveyance protocol, to recapture at least a portion of the one of the plurality of channel selection commands.

39. (original) The tuning module of claim 36, wherein the bus interface module further comprises:

monitoring module operably coupled to monitor a shared bus at specific time intervals for a data frame that contains at least a portion of one of the plurality of channel selection commands.

40. (original) The tuning module of claim 39 further comprises:

decoding module operably coupled to decode, based on the data conveyance protocol, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands.

41. (original) The tuning module of claim 36, wherein the bus interface module further comprises at least one of:

decrypting module for decrypting each of the plurality of channel selection commands; and

decompressing module for decompressing each of the plurality of channel selection commands.

42. (original) The tuning module of claim 36 further comprises:

second plurality of selectors, wherein each of the second plurality of selectors is operably coupled to receive a second plurality of channels, wherein each of the second

plurality of selectors outputs a channel of the second plurality of channels based on a respective one of the plurality of channel selection commands to produce second selected channels.

43. (original) The tuning module of claim 36, wherein the encoding module further comprises:

packetizing module for packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity of the selected channel, type of data of the selected channel, identity of a multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

44. (original) The tuning module of claim 36, wherein the encoding module further comprises:

framing module for framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

45. (original) The tuning module of claim 36, wherein the encoding module further comprises at least one of:

multilevel encoding module for multilevel encoding of data of each of the selected channels;

non return to zero (NRZ) encoding module for NRZ encoding of the data of each of the selected channels;

Manchester encoding module for Manchester encoding of the data of each of the selected channels;

block encoding module for block encoding of the data of each of the selected channels; and

nB/mB encoding module for nB/mB encoding of the data of each of the selected channels, where $n < m$.

46. (original) The tuning module of claim 36 further comprises:

data compressing module operably coupled to the plurality of selectors and the encoding module, wherein the data compressing module receives the selected channels from the plurality of selectors, compresses the selected channels to produce compressed channels, and provides the compressed channels to the encoding module.

47. (original) The tuning module of claim 36 further comprises:

encryption module operably coupled to the plurality of selectors and the encoding module, wherein the encryption module receives the selected channels from the plurality of selectors, encrypts the selected channels to produce

encrypted channels, and provides the encrypted channels to the encoding module.

48. (original) The tuning module of claim 36 further comprises:

bus controller operably coupled to the bus interface module, wherein the bus controller controls receiving of the plurality of channel selection commands and controls the transmitting of the encoded channel data.

49. (previously presented) An apparatus for multiplexing a plurality of channels in a multimedia system, the apparatus comprises:

processing module; and

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receive a plurality of channels from a multimedia source;

receive a plurality of channel selection commands by:
monitoring a shared bus at specific time intervals; and

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands;

select a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encode each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data.

50. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that

cause the processing module to receive the channel selection commands by:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

51. (original) The apparatus of claim 50, wherein the memory further comprises operational instructions that cause the processing module to process the plurality of channel selection requests by at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

52. (cancelled)

53. (previously presented) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands further by:

decoding, based on the data conveyance protocol, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands.

54. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

receive a second plurality of channels from a second multimedia source.

55. (original) The apparatus of claim 54, wherein the memory further comprises operational instructions that cause the processing module to select a channel by:

selecting a channel from either the plurality of channels or the second plurality of channels per each of the channel selection commands, wherein each of the channel selection commands includes identity of the multimedia source or the second multimedia source and identity of the channel.

56. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

57. (original) The apparatus of claim 49, wherein each of the plurality of channels is compressed, and wherein the memory further comprises operational instructions that cause the processing module to select a channel by:

selecting a group of compressed channels of the plurality of channels per at least one of the plurality of channel selection commands, wherein the group of compressed channels includes the channel.

58. (original) The apparatus of claim 57, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

encoding the group of compressed channels into packets or frames based on the data conveyance protocol.

59. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of

identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

60. (original) The apparatus of claim 59, wherein the memory further comprises operational instructions that cause the processing module to:

convey the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

61. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

62. (original) The apparatus of claim 61, wherein the memory further comprises operational instructions that cause the processing module to:

convey the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

63. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

64. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

compress the selected channels prior to encoding.

65. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

encrypt the selected channels prior to encoding.

66. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

receive a single channel from a multimedia source;

select the single channel based on at least one of the plurality of channel selection commands to produce a selected single channel; and

encode the selecting single channel based on the data conveyance protocol.

67. (currently amended) An apparatus for multiplexing channels in a multimedia system, the apparatus comprises:

processing module; and

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receiving a channel from each of a plurality of sources to produce a plurality of channels;

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to determine whether the request can be supported, and, if so, producing a plurality of channel selection commands, ~~receiving a plurality of channel selection commands,~~ wherein each of the plurality of channel selection commands includes an identity of one of the plurality of sources, and an identity of the channel;

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encoding each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data.

68. (currently amended) The apparatus of claim 67, ~~wherein the memory further comprises operational instructions that cause the processing module to receive the channel selection commands by:~~

~~receiving, from a plurality of clients, a plurality of channel selection requests; and~~

~~processing the plurality of channel selection requests to produce the plurality of channel selection commands,~~ wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

69. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to process the plurality of channel selection requests by at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

70. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by:

monitoring packets on a shared bus;

identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

71. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by:

monitoring a shared bus at specific time intervals;

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

72. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

73. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

74. (original) The apparatus of claim 73, wherein the memory further comprises operational instructions that cause the processing module to:

convey the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

75. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encoding each of the selected channels by:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

76. (original) The apparatus of claim 75, wherein the memory further comprises operational instructions that cause the processing module to:

convey the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

77. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

78. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to:

compress the selected channels prior to encoding.

79. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to:

encrypt the selected channels prior to encoding.

REMARKS/ARGUMENTS

1. In the above referenced Office Action, the Examiner rejected claims 1 6-7, 11, 13-15, 18-22, and 31-33 under 35 USC § 102(e) as being anticipated by Williams (U.S. Patent No. 6,493,873); claims 8-10, 16, 17, 28, and 34-35 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Official Notice; claim 23 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Basawapatna et al. (U.S. Patent No. 6,598,231); claims 4, 24, 36, 38 and 41-48 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Hodge (US 20010005908); claims 12 and 30 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Hartley (U.S. Patent No. 6,473,414); and claims 67-68, 72-73, and 75-79 over Williams (U.S. Patent No. 6,493,873) in view of Hoarty (U.S. Patent No. 5,883,661). In addition, claim 3 was rejected under 35 USC § 112 as being indefinite and claim 36 was objected to based on informalities. Claims 49-51 and 53-66 have been allowed. Claims 5, 25, 39-40 and 71 have been objected to.

Claims 1, 3-25, 28, 30-36, 38-51, and 53-79 are currently pending in this application. Claims 3, 36 and 67-68 been amended. No new matter has been added. Applicant thanks the Examiner for favorable treatment of claims 5, 25, 39-40, 49-51, 53-66 and 71. The rejections above have been traversed and, as such, the Applicant respectfully requests reconsideration of the allowability of claims 1, 3-25, 28, 30-36, 38-48, and 67-79.

2. Claim 3 was rejected as being dependent upon cancelled claim 2. Claim 3 has been amended to depend from claim 1. For this reason, Applicant believes that claim 3 has been corrected and respectfully requests that this basis for rejection be withdrawn.

3. Claim 36 was rejected based on informalities that have been amended per Examiner's suggestion. For this reason, Applicant believes that claim 36 has been corrected and respectfully requests that this objection be withdrawn.

4. As discussed above claim 1 was rejected based on Williams. Claim 1 recites:

"processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list."

Examiner has indicated that Williams includes a last channel selection command based on the "latest channel selection request". Williams teaches the selection of a new channel, but Williams does not teach the selection of a new channel based on the last channel. For instance, if a user of the Williams system changes the channel from channel 7 to channel 9, the user cannot issue a last channel selection command to automatically return to channel 7. The user must, instead, remember that he or she

was watching channel 7 and manually select channel 7. Williams does not disclose, suggest or teach a channel selection command that includes a last channel selection command.

For this reason, Applicant believes that claim 1 and claims 3-20 that depend therefrom, are patentably distinct from the prior art.

5. As discussed above, Claim 21 was rejected based on Williams. In rejecting claim 21, the Examiner stated that, "it is noted that a header field and data field are inherently included in a packet" and, "since the packetizer 58 packetizes the selected channel data, the header field inherently includes service channel ID". Applicant disagrees. There is simply no basis for Examiner to assume that Williams service channel ID must be included in the header field of a data packet. Applicant respectfully submits that Williams does not disclose, suggest or teach, either expressly or inherently, that location of this data in the header field.

For this reason, Applicant believes that claim 21 and claims 22-25, 28, and 30-35 that depend therefrom, are patentably distinct from the prior art.

Similarly, Applicant believes that claims 11, 43 and 73 are allowable for this same reason.

6. As discussed above, Claim 36 was rejected based on Williams in view of Hodge. Claim 36 recites in part,

"the bus interface module including a receiving module that is operably coupled to monitor packets on a shared bus and to identify at least one of the packets that contains at least a portion of one of the plurality of channel selection commands to produce an identified packet."

While Examiner cites Hodges for its shared bus 120. However, Hodges does not disclose, suggest or teach monitoring packets on the shared bus to identify at least one of the packets that contains at least a portion of one of the plurality of channel selection commands to produce an identified packet.

For this reason, Applicant believes that claim 36, and claims 38-48 that depend therefrom, are patentably distinct from the prior art.

Similarly, Applicant believes that claims 4, 24, and 70 are allowable for this same reason.

7. As discussed above, claim 67 was rejected based on Williams in view of Hoarty. Claim 67 has been amended to include the following:

"receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to determine whether the request can be supported,

and, if so, producing a plurality of channel selection
commands"

Neither Williams nor Hoarty teaches this particular feature.

For this reason, Applicant believes that claim 67, and claims 68-79 that depend therefrom, are patentably distinct from the prior art.

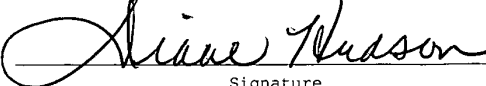
For the foregoing reasons, the applicant believes that claims 1, 3-25, 28, 30-36, 38-48, and 67-79 are in condition for allowance and respectfully request that they be passed to allowance.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present invention.

No additional fee is due. The Commissioner is authorized to charge any fees that are required or credit any overpayment to Deposit Account No. 50-1835

RESPECTFULLY SUBMITTED,

By: /Bruce E. Stuckman reg. 36,693/
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CERTIFICATE OF MAILING	
37 C.F.R. 1.8	
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,602	05/24/2001	Indra Laksono	VIXS 004	8010
34280	7590	09/07/2006	EXAMINER	
TIMOTHY W. MARKISON			VU, NGOC K	
VIXS, INC.			ART UNIT	
P.O.BOX 160727			PAPER NUMBER	
AUSTIN, TX 78736			2623	

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/864,602		Applicant(s) LAKSONO, INDRA	
	Examiner Ngoc K. Vu		Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 16 June 2006.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1,3-25,28,30-36,38-51 and 53-79 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) 49-51 and 53-66 is/are allowed.

6) ☒ Claim(s) 1,3,4,6-24,28,30-36,38,41-48,67-70 and 72-79 is/are rejected.

7) ☒ Claim(s) 5, 25, 39, 40 and 71 is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ 5) <input type="checkbox"/> Notice of Informal Patent Application 6) <input type="checkbox"/> Other: _____
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Response to Arguments

1. Applicant's arguments filed 6/16/2006 have been considered but not persuasive.

With respect to claim 1, applicant argues that Williams does not teach the selection of a new channel based on the last channel. This argument is not persuasive.

First, claim 1, in part, recites the feature of each of the plurality of channel selection commands includes at least one of last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list. Accordingly, the limitation "at least one of" requires only one of the features "last channel selection command... and select channel from user define list". As indicated in the previous Office Action, Williams teaches the feature of each of the plurality of channel selection commands includes last channel selection command. For instance, IRD 30 receives satellite signal requests from a user and then sends the requests to provider (via control unit 72) over network 26. Particularly, a controller in the IRD 30 recognizes a user-requested channel before sending the request to the provider over the network 26. It is noted that the control unit may receive a plurality of requests from the IRDs 30-40. When the control unit receives the requests for channels, it processes the requests in order to further perform the appropriate actions, i.e., determining which of the satellite signals or transponder signals must be decoded. (See col. 11, lines 6-40; col. 16, lines 5-23). The control unit generates channel selection commands to other components, i.e., upconverters 62 and 66 and/or level shifter 70, to provide the selected transponder signals to the IRDs in response to the channel requests. It is further noted that the channel requests or the channel selection commands include the newest or the latest channel selection requests. For example, a user requests for channel ABC to the controller in the IRD. This request is considered as the newest or the latest channel request from the user. Thus, Williams teaches processing the requests from the IRDs to

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produce the channel selection commands in order to further perform the appropriate actions, wherein each of the channel selection commands includes last channel selection command.

Second, the context of claim 1 does not require selecting a new channel based on the last channel as applicant argued.

With respect to claim 21, applicant stated "There is simply no basis for Examiner to assume that Williams service channel ID must be included in the header field of a data packet...William does not disclose, suggest or teach, either expressly or inherently, that location of this data in the header field." Examiner respectfully disagrees.

In response, the system of William provides packetized streams including data packets to the IRDs via packetizer 58 (see col. 9, line 49 to col. 10, line 9). Three references (US 6,522,342, US 5,886,995 and US 5,757,416) are hereby cited to support the feature of "a header field and data field are inherently included in a packet". Specifically, the US 6,522,342 reference discloses that the data packets are distinguished from one another by their header information, which is referred to as the packets's "service channel ID" (SCID). For example, if a viewer instructs the IRD to display ESPN, the IRD determines the transponder frequency and polarization at which the ESPN programming is broadcast, along with the SCIDs of the data packets that are needed to generate and display the video, audio and data content of the ESPN program. It is noted that each data packet within the packetized data stream includes a header that identifies the contents of the data packet and a service channel identifier (SCID) that identifies the data packet (see col. 2, lines 14-22 and col. 8, line 61 to col. 9, line 6). The individual data streams are divided into individual packets, each with an identifying header or ID, wherein the ID corresponds to an individual channel in the data stream as disclosed in the US 5,886,995 reference (see col. 13, lines 10+). As shown in figure 6C of the US 5,757,416 reference, a packet comprises a packet header and a data field (see figure 6C).

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In response to applicant's arguments, with respect to claim 36, against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

With respect to claim 67, applicant argued that neither Williams nor Hoarty teaches the feature "processing the plurality of channel selection requests to determine whether the request can be supported, and if so, producing a plurality of channel selection commands". This argument is not persuasive.

The system of Williams includes the control unit that determines which of the satellite signals or transponder signals must be decoded to satisfy the requests and controls a different one of the determined transponder signals for transmission over the cable network (see col. 11, lines 6-40). From this view, the control unit must process the requests from the IRDs in order to further perform appropriate actions in response to the requests. That is, the control unit processes the channel requests from the IRDs to determine whether the requests can be provided.

Therefore, the rejection of the claims 1, 3, 4, 6-24, 28, 30-36, 38, 41-48, 67-70 and 72-79 are maintained.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1, 6, 7, 11, 13-15, 18-22 and 31-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Williams (U.S. 6,493,873 B1).

Regarding claim 1, Williams teaches a method of multiplexing a plurality of channels in a multimedia system, the method comprises:

receiving a plurality of channels from a multimedia source (from satellite) (see col. 5, lines 59-62; col. 6, lines 47-63);

receiving a plurality of channel selection commands by: receiving a plurality of channel selection requests from a plurality of clients, a plurality of channel select requests (see col. 7, lines 31-37; col. 10, lines 59-65; col. 6, lines 37-42); and processing the plurality of channel selection requests (demodulating and decoding the requests) to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes last channel selection command (i.e., latest channel selection request) (see col. 16, lines 5-19).

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels (see col. 11, lines 6-16); and

encoding (via encoder 60) each of the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce a set of encoded channel data (see col. 10, lines 10-23).

Regarding claims 6 and 7, Williams teaches receiving a second plurality of channels from a second multimedia source (from cable provider), the selecting a channel comprises selecting a channel from the plurality of channels, wherein each of the channel selection commands includes identify of the multimedia source or the second multimedia source and identify of the channel (see col. 10, lines 40-52; col. 6, lines 47-63).

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Regarding claim 11, Williams teaches packetizing (via 58) data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes packet sequence number (i.e., PID number) (see col. 13, line 23 to col. 14, lines 14 and figure 3).

Regarding claim 13, Williams teaches framing data (via encoder 60) of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes the identity the selected channel (see figure 3; col. 9, line 65 to col. 10, line 23; col. 13, lines 56 to col. 14, line 15).

Regarding claim 14, Williams teaches conveying the frame in accordance with frequency division multiplexing data conveyance protocol (see col. 10, lines 24-38).

Regarding claim 15, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

Regarding claim 18, Williams teaches receiving a single channel from a multimedia source (from cable provider); selecting the single channel based on at least one of the plurality of channel selection commands to produce a selected single channel; and encoding the selecting single channel based on the data conveyance protocol (see col. 10, lines 40-52 and 10-23; col. 11, lines 6-21).

Regarding claim 19, Williams teaches receiving the single channel of at least one of data, audio data and video data from a modem (see col. 6, lines 47-52).

Regarding claim 20, Williams teaches receiving audio and video data for each of the plurality of channels from a satellite connection (see col. 5, lines 59-62).

Regarding claim 21, Williams teaches a method of multiplexing a plurality of channels in a multimedia system, the method comprises:

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receiving a plurality of channels from a multimedia source (from satellite) (see col. 5, lines 59-62; col. 6, lines 47-63);

receiving a plurality of channel selection commands (see col. 7, lines 31-37);

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels (see col. 11, lines 6-16);
and

encoding (via encoder 60) each of the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce a set of encoded channel data (see col. 10, lines 10-23) by packetizing data of each of the selected channels (packetizing data by packetizer 58) into a packet that includes a header section and a data section (it is noted that a header field and data field are inherently included in a packet), wherein the header section includes the identity of the selected channel (since the packetizer 58 packetizes the selected channel data, the header field inherently includes service channel ID) (see col. 9, line 59 to col. 10, line 9).

Claim 22, Williams teaches receiving a plurality of channel selection requests from a plurality of clients, a plurality of channel select requests (see col. 7, lines 31-37; col. 10, lines 59-65; col. 6, lines 37-42); and processing the plurality of channel selection requests (demodulating and decoding the requests) to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes last channel selection command (i.e., latest channel selection request) (see col. 16, lines 5-19).

Claim 31, see the similar interpretation for claim 13 above.

Claim 32, see the similar interpretation for claim 14 above.

Claim 33, see the similar interpretation for claim 15 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8-10, 16, 17, 28, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1).

Claims 8 and 28, Williams teaches receiving the plurality of channel selection commands (see col. 7, lines 31-40; col. 10, lines 59-65). Williams does not teach decrypting each of the plurality of channel selection commands. Official Notice is taken that the technique of decrypting information is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by decrypting each of the plurality of channel selection commands for security purposes.

Regarding claims 9-10, 16-17, 34 and 35, Williams teaches encoding the channels into packets based on the data conveyance protocol (see col. 9, line 59 to col. 10, line 16). Williams does not teach compressing data and encrypting data. Official Notice is taken that encrypting and/or compressing data are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams by encrypting and/or compressing data for security purpose and for reducing bandwidth purpose.

6. Claims 3 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Basawapatna et al. (US 6,598,231 B1).

Regarding claims 3 and 23, Williams does not teach processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a

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specific channel selection request. However, Basawapatna teaches the steps of checking the customer authorization and determination whether or not the customer is a valid user (see col. 14, lines 19-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a specific channel selection request as taught by Basawapatna in order to verify the authorized user for requesting the channel selection.

7. Claim 4, 5, 24, 25, 36, 38-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hodge et al. (US 20010005908 A1).

Regarding claim 36, Williams teaches a tuning module for using in multimedia system, the tuning module comprises:

plurality of selectors (transmodulator channels), wherein each of the plurality of selectors is operably coupled to receive a plurality of channels, wherein each of the plurality of selectors outputs a channel of the plurality of channels based on a respective one of a plurality of channel selection commands to produce selected channels (see col. 9, lines 28-48; col. 10, lines 40-52);

encoding module (60) operably coupled to encode the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce encoded channel data (col.10, lines 10-23); and

bus interface module (between encoder 60 and upconverter 66) operably coupled to transmit the encoded channel data in accordance with the data conveyance protocol (DVB cable) (see figure 3).

Williams further teaches a receiving module (72, 73) identifies at least one of the packets that contains channel selection commands (from the requests) to produce an identified packet

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(since the requests are digital requests) (see col. 6, lines 37-42; col. 10, lines 59-67 and figure 3).

It is noted that the system of Williams includes receiving and decoding the plurality of channel selection requests by decoder 73. The requests may be sent from the IRDs periodically to indicate to the control unit 72 which transponder signals are being actively requested by the IRDs (see col. 7, lines 31-40; col. 10, lines 59-65; col. 11, lines 1-4). Williams does not explicitly teach monitoring packets on a shared bus with respect to claims 4, 5, 24, 25 and further regarding claim 36. However, Hodge teaches that provider or headend 100 comprises a shared bus 120 (see figure 4) to provide an architecture which allows the provider or headend to share headed resources and to receive upstream data signals. It is further noted that the shared bus includes address, data and control elements which are communicated in a serial bus or paralled bus (see 0045, 0082, 0061 and figure 4). From this view, Hodge teaches monitoring received data on a shared bus 120. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by using a shared bus 120 at headend as taught by Hodge for purposes of sharing headed resources and receiving upstream data signals with less cost.

Regarding claims 38-40, the combination of Williams teaches receiving and decoding the plurality of channel selection requests by decoder 73. These requests may be from the IRDs periodically to indicate to the control unit 72 which transponder signals are being actively requested by the IRDs (see Williams: col. 7, lines 31-40; col. 10, lines 59-65; col. 11, lines 1-4; and figure 3), and the provider or headend 100 comprises a shared bus 120 (see figure 4) to provide an architecture which allows the provider or headend to share headed resources and to receive upstream data signals. It is further noted that the shared bus includes address, data and control elements which are communicated in a serial bus or paralled bus (see Hodge: 0045,

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0082, 0061 and figure 4). From this view, Hodge teaches monitoring received data on a shared bus 120.

Regarding claim 41, Williams teaches receiving the plurality of channel selection commands (see col. 7, lines 31-40; col. 10, lines 59-65). Williams does not teach decrypting each of the plurality of channel selection commands. Official Notice is taken that the technique of decrypting information is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by decrypting each of the plurality of channel selection commands for security purposes.

Regarding claim 42, Williams teaches that second plurality of selectors (within level shifter 70), wherein each of the second plurality of selectors is operably coupled to receive a second plurality of channels, wherein each of the second plurality of selectors outputs a channel of the second plurality of channels based on a respective one of the plurality of channel selection commands to produce second selected channels (see col. 10, lines 40-52).

Regarding claim 43, Williams teaches packetizing (via 58) data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes packet sequence number (i.e., PID number) (see col. 13, line 23 to col. 14, lines 14 and figure 3).

Regarding claim 44, Williams teaches framing data (via encoder 60) of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes encryption (see figure 3; col. 9, line 65 to col. 10, line 23; col. 13, lines 56 to col. 14, line 15).

Regarding claim 45, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

With respect to claims 46-47, Williams teaches encoding the channels into packets based on the data conveyance protocol (see col. 9, line 59 to col. 10, line 16). Williams does not teach compressing data and encrypting data. Official Notice is taken that encrypting and/or compressing data are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams by encrypting and/or compressing data for security purpose and for reducing bandwidth purpose.

Regarding claim 48, Williams teaches that the system comprises controller (72) to control receiving of the plurality of channel selection commands and control the transmitting of the encoded channel data (see col. 10, lines 53-65; col. 11, lines 6-67).

8. Claims 12 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hartley et al. (US 64734414 B1).

Regarding claims 12 and 30, Williams does not teach conveying the packet using CSMA with collision detection. However, Hartley discloses that a protocol known as carrier sense multiple access with collision detection (CSMA/CD) is utilized to detect collisions during transmission (see col. 1, lines 25-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system Williams by providing CSMA/CD protocol in order to effectively detect collisions during transmission.

9. Claims 67, 68, 72, 73 and 75-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. 6,493,873 B1) in view of Hoarty (US 5,883,661 A).

Regarding claim 67, Williams teaches an apparatus for multiplexing a plurality of channels in a multimedia channels, the apparatus comprises:

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processing module (within unit 72); and memory (within unit 72) operably coupled to the processing module, wherein the memory includes operational instructions (col. 12, lines 1-6; col. 10, lines 53-59) that cause the processing module to:

receiving a channel from each of a plurality of channels from a multimedia source (from satellite) (see col. 5, lines 59-62; col. 6, lines 47-63);

receiving, from a plurality of channel of clients, a plurality of channel selection requests (see col. 7, lines 31-47; col. 11, lines 1-5);

processing the plurality of channel selection requests to determine whether the request can be supported, and, if so, producing a plurality of channel selection commands (the system of Williams includes the control unit that determines which of the satellite signals or transponder signals must be decoded to satisfy the requests and controls a different one of the determined transponder signals for transmission over the cable network. That is, the control unit processes the channel requests from the IRDs to determine whether the requests can be provided. Accordingly, the control unit must process the requests from the IRDs to produce the channel requests or the channel selection commands in order to further perform appropriate actions in response to the requests. See col. 11, lines 6-40);

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels (see col. 11, lines 6-16); and

encoding (via encoder 60) each of the selected channels based on a data conveyance protocol (DVB cable) of the multimedia system to produce a set of encoded channel data (see col. 10, lines 10-23).

Williams does not explicitly teach the channel selection includes an identity of one of the plurality of sources, and an identity of the channel. However, Hoarty teaches that system

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manager 22 receives a request for interactive service upon an interactive channel selection by a user from home interface controller. Particularly, the user selects the interactive service by picking a channel number from a single numerical sequence of channel numbers via a remote control. That is, the request includes interactive service identifier associated with a channel number selected by the user so that the provider can deliver the requested interactive service to the requesting subscriber (see col. 10, lines 33-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by receiving a request for a particular service included an identity service or source associated with a channel number selected by the user as taught by Hoarty to allow the provider effectively deliver the requested interactive service to the requesting subscriber.

Regarding claim 68, Williams teaches receiving a plurality of channel selection request from a plurality of clients, a plurality of channel select requests (see col. 7, lines 31-37; col. 10, lines 59-65; col. 6, lines 37-42); and processing the plurality of channel selection requests (demodulating and decoding the requests) to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes last channel selection command (i.e., latest channel selection request) (see col. 16, lines 5-19).

Regarding claim 72, Williams teaches receiving the plurality of channel selection commands (see col. 7, lines 31-40; col. 10, lines 59-65). Williams does not teach decrypting each of the plurality of channel selection commands. Official Notice is taken that the technique of decrypting information is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Williams by decrypting each of the plurality of channel selection commands for security purposes.

Regarding claim 73, Williams teaches packetizing (via 58) data of each of the selected channels into a packet that includes a header section and a data section, wherein the header

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section includes packet sequence number (i.e., PID number) (see col. 13, line 23 to col. 14, lines 14 and figure 3).

Regarding claim 75, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

Regarding claim 76, Williams teaches conveying the frame in accordance with frequency division multiplexing data conveyance protocol (see col. 10, lines 24-38).

Regarding claim 77, Williams teaches multilevel encoding data of each of the selected channels via R-S encoder 92 and differential encoder 98 (see col. 14, lines 2-25).

Regarding claims 78 and 79, Williams teaches encoding the channels into packets based on the data conveyance protocol (see col. 9, line 59 to col. 10, line 16). Williams does not teach compressing data and encrypting data. Official Notice is taken that encrypting and/or compressing data are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams by encrypting and/or compressing data for security purpose and for reducing bandwidth purpose.

10. Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 6,493,873 B1) in view of Hoarty (US 5,883,661 A) and further in view of Basawapatna et al. (US 6,598,231 B1).

Regarding claim 69, Williams does not teach processing the plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a specific channel selection request. However, Basawapatna teaches the steps of checking the customer authorization and determination whether or not the customer is a valid user (see col. 14, lines 19-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams by processing the

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plurality of channel selection requests comprising authenticating a client of the plurality of clients that provides a specific channel selection request as taught by Basawapatna in order to verify the authorized user for requesting the channel selection.

11. Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 6,493,873 B1) in view of Hoarty (US 5,883,661 A) and further in view of Hodge et al. (US 20010005908 A1).

Regarding claim 70, it is noted that the system of Williams includes receiving and decoding the plurality of channel selection requests by decoder 73. The requests may be sent from the IRDs periodically to indicate to the control unit 72 which transponder signals are being actively requested by the IRDs (see col. 7, lines 31-40; col. 10, lines 59-65; col. 11, lines 1-4). Williams does not explicitly teach monitoring packets on a shared bus. However, Hodge teaches that provider or headend 100 comprises a shared bus 120 (see figure 4) to provide an architecture which allows the provider or headend to share headed resources and to receive upstream data signals. It is further noted that the shared bus includes address, data and control elements which are communicated in a serial bus or paralalled bus (see 0045, 0082, 0061 and figure 4). From this view, Hodge teaches monitoring received data on a shared bus 120. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Williams and Hoarty by using a shared bus 120 at headend as taught by Hodge for purposes of sharing headed resources and receiving upstream data signals with less cost.

12. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 6,493,873 B1) in view of Hoarty (US 5,883,661 A) and further in view of Hartley et al. (US 6,4734,414 B1).

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Regarding claim 74, Williams does not teach conveying the packet using CSMA with collision detection. However, Hartley discloses that a protocol known as carrier sense multiple access with collision detection (CSMA/CD) is utilized to detect collisions during transmission (see col. 1, lines 25-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system Williams by providing CSMA/CD protocol in order to effectively detect collisions during transmission.

Allowable Subject Matter

13. Claims 5, 25, 39, 40 and 71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 49-51 and 53-66 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of the record fails to teach or fairly suggest the limitation "monitoring a shared bus at specific time intervals; and identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands" as recited in claim 49.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc K. Vu whose telephone number is 571-272-7306. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ngoc K. Vu
Primary Examiner
Art Unit 2623

September 5, 2006

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OCT 04 2006

PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Indra Laksano **Examiner:** Vu, Ngoc K
Serial No: 09/864,602 **Art Group:** 2611
Filing Date: 05/24/2001 **Docket No:** VIXS 004
Title: METHOD AND APPARATUS OF MULTIPLEXING A PLURALITY OF
CHANNELS IN A MULTIMEDIA SYSTEM

Date: 10/02/2006

Honorable Commissioner of
Patents and Trademarks,
Alexandria, Virginia 22313

In response to a Final Office Action mailed on
9/07/2006 regarding the above-captioned patent application,
the applicant respectfully submits the following amendment
and response.

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CLAIM AMENDMENTS

1. (currently amended) A method of multiplexing a plurality of channels in a multimedia system, the method comprises:

receiving a plurality of channels from a multimedia source;

receiving a plurality of channel selection commands by:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list;

wherein the receiving the plurality of channel selection commands further includes monitoring a shared bus at specific time intervals, identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands, and decoding, based on a data conveyance protocol of the multimedia system, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands;

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selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection commands to produce selected channels; and

encoding each of the selected channels based on athe data conveyance protocol of the multimedia system to produce a set of encoded channel data.

2. (cancelled)

3. (previously presented) The method of claim 1, wherein the processing the plurality of channel selection requests further comprises at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

4. (original) The method of claim 1, wherein the receiving the plurality of channel selection commands further comprises:

monitoring packets on a shared bus;

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identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

5. (cancelled)

6. (original) The method of claim 1 further comprises:

receiving a second plurality of channels from a second multimedia source.

7. (original) The method of claim 6, wherein the selecting a channel further comprises:

selecting a channel from either the plurality of channels or the second plurality of channels per each of the channel selection commands, wherein each of the channel selection commands includes identity of the multimedia source or the second multimedia source and identity of the channel.

8. (original) The method of claim 1, wherein the receiving the plurality of channel selection commands further comprises at least one of:

decrypting each of the plurality of channel selection commands; and

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decompressing each of the plurality of channel selection commands.

9. (original) The method of claim 1, wherein each of the plurality of channels is compressed, wherein the selecting a channel further comprises:

selecting a group of compressed channels of the plurality of channels per at least one of the plurality of channel selection commands, wherein the group of compressed channels includes the channel.

10. (original) The method of claim 9, wherein the encoding further comprises:

encoding the group of compressed channels into packets or frames based on the data conveyance protocol.

11. (original) The method of claim 1, wherein the encoding further comprises:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

12. (original) The method of claim 11 further comprises:

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conveying the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

13. (original) The method of claim 1, wherein the encoding further comprises:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

14. (original) The method of claim 13 further comprises:

conveying the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

15. (original) The method of claim 1, wherein the encoding further comprises at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

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block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

16. (original) The method of claim 1, further comprises;

data compressing the selected channels prior to encoding.

17. (original) The method of claim 1 further comprises:

encrypting the selected channels prior to encoding.

18. (original) The method of claim 1 further comprises:

receiving a single channel from a multimedia source;

selecting the single channel based on at least one of the
plurality of channel selection commands to produce a
selected single channel; and

encoding the selecting single channel based on the data
conveyance protocol.

19. (original) The method of claim 18, wherein the
receiving the single channel further comprises at least one
of:

receiving the single channel of audio data and video data
from an output of a video cassette recorder;

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receiving the single channel of audio data and video data from an output of a DVD player;

receiving the single channel of audio data and video data from an output of a camcorder;

receiving the single channel of audio data from an output of a compact disk player;

receiving the single channel of audio data from an output of a cassette player;

receiving the single channel of at least one of data and audio data from a telephone connection; and

receiving the single channel of at least one of data, audio data, and video data from a modem.

20. (original) The method of claim 1, wherein the receiving the plurality of channels further comprises at least one of:

receiving audio and video data for each of the plurality of channels from a satellite connection;

receiving audio and video data for each of the plurality of channels from a set-top box;

receiving audio and video data for each of the plurality of channels from a cable connection;

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receiving audio and video data for each of the plurality of channels from a high-definition television receiver; and

receiving audio and video data for each of the plurality of channels from an antenna.

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21. (currently amended) A method of multiplexing channels in a multimedia system, the method comprises:

receiving a channel from each of a plurality of sources to produce a plurality of channels;

receiving a plurality of channel selection commands by monitoring a shared bus at specific time intervals, identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands, and decoding, based on a data conveyance protocol of the multimedia system, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands;

selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encoding each of the selected channels based on thea data conveyance protocol of the multimedia system to produce a set of encoded channel data by packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of: identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

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22. (original) The method of claim 21, wherein the receiving the channel selection commands further comprises:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

23. (original) The method of claim 22, wherein the processing the plurality of channel selection requests further comprises at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

24. (original) The method of claim 21, wherein the receiving the plurality of channel selection commands further comprises:

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monitoring packets on a shared bus;

identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

25. (cancelled)

26. (cancelled)

27. (cancelled)

28. (original) The method of claim 21, wherein the receiving the plurality of channel selection commands further comprises at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

29. (cancelled)

30. (previously presented) The method of claim 21 further comprises:

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conveying the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

31. (original) The method of claim 21, wherein the encoding further comprises:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

32. (original) The method of claim 31 further comprises:

conveying the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

33. (original) The method of claim 31, wherein the encoding further comprises at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

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block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

34. (original) The method of claim 21 further comprises:

data compressing the selected channels prior to encoding.

35. (original) The method of claim 21 further comprises:

encrypting the selected channels prior to encoding.

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36. (currently amended) A tuning module for using in multimedia system, the tuning module comprises:

plurality of selectors, wherein each of the plurality of selectors is operably coupled to receive a plurality of channels, wherein each of the plurality of selectors outputs a channel of the plurality of channels based on a respective one of a plurality of channel selection commands to produce selected channels;

encoding module operably coupled to encode the selected channels based on a data conveyance protocol of the multimedia system to produce encoded channel data; and

bus interface module operably coupled to transmit the encoded channel data in accordance with the data conveyance protocol, the bus interface module including a receiving module that is operably coupled to monitor packets on a shared bus at specific time intervals and to identify at least one of the packets at one of the specific time intervals, that contains at least a portion of one of the plurality of channel selection commands to produce an identified packet.

37. (cancelled)

38. (previously presented) The tuning module of claim 38 further comprises:

decoding module operably coupled to decode the identified packet, based on the data conveyance protocol, to recapture

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at least a portion of the one of the plurality of channel selection commands.

39. (cancelled)

40. (cancelled)

41. (original) The tuning module of claim 36, wherein the bus interface module further comprises at least one of:

decrypting module for decrypting each of the plurality of channel selection commands; and

decompressing module for decompressing each of the plurality of channel selection commands.

42. (original) The tuning module of claim 36 further comprises:

second plurality of selectors, wherein each of the second plurality of selectors is operably coupled to receive a second plurality of channels, wherein each of the second plurality of selectors outputs a channel of the second plurality of channels based on a respective one of the plurality of channel selection commands to produce second selected channels.

43. (original) The tuning module of claim 36, wherein the encoding module further comprises:

packetizing module for packetizing data of each of the selected channels into a packet that includes a header

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section and a data section, wherein the header section includes at least one of identity of the selected channel, type of data of the selected channel, identity of a multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

44. (original) The tuning module of claim 36, wherein the encoding module further comprises:

framing module for framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

45. (original) The tuning module of claim 36, wherein the encoding module further comprises at least one of:

multilevel encoding module for multilevel encoding of data of each of the selected channels;

non return to zero (NRZ) encoding module for NRZ encoding of the data of each of the selected channels;

Manchester encoding module for Manchester encoding of the data of each of the selected channels;

block encoding module for block encoding of the data of each of the selected channels; and

nB/mB encoding module for nB/mB encoding of the data of each of the selected channels, where $n < m$.

46. (original) The tuning module of claim 36 further comprises:

data compressing module operably coupled to the plurality of selectors and the encoding module, wherein the data compressing module receives the selected channels from the plurality of selectors, compresses the selected channels to produce compressed channels, and provides the compressed channels to the encoding module.

47. (original) The tuning module of claim 36 further comprises:

encryption module operably coupled to the plurality of selectors and the encoding module, wherein the encryption module receives the selected channels from the plurality of selectors, encrypts the selected channels to produce encrypted channels, and provides the encrypted channels to the encoding module.

48. (original) The tuning module of claim 36 further comprises:

bus controller operably coupled to the bus interface module, wherein the bus controller controls receiving of the plurality of channel selection commands and controls the transmitting of the encoded channel data.

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49. (previously presented) An apparatus for multiplexing a plurality of channels in a multimedia system, the apparatus comprises:

processing module; and

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receive a plurality of channels from a multimedia source;

receive a plurality of channel selection commands by:
monitoring a shared bus at specific time intervals; and

identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands;

select a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encode each of the selected channels based on a data conveyance protocol of the multimedia system to produce a set of encoded channel data.

50. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that

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cause the processing module to receive the channel selection commands by:

receiving, from a plurality of clients, a plurality of channel selection requests; and

processing the plurality of channel selection requests to produce the plurality of channel selection commands, wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

51. (original) The apparatus of claim 50, wherein the memory further comprises operational instructions that cause the processing module to process the plurality of channel selection requests by at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

52. (cancelled)

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53. (previously presented) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands further by:

decoding, based on the data conveyance protocol, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands.

54. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

receive a second plurality of channels from a second multimedia source.

55. (original) The apparatus of claim 54, wherein the memory further comprises operational instructions that cause the processing module to select a channel by:

selecting a channel from either the plurality of channels or the second plurality of channels per each of the channel selection commands, wherein each of the channel selection commands includes identity of the multimedia source or the second multimedia source and identity of the channel.

56. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by at least one of:

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decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

57. (original) The apparatus of claim 49, wherein each of the plurality of channels is compressed, and wherein the memory further comprises operational instructions that cause the processing module to select a channel by:

selecting a group of compressed channels of the plurality of channels per at least one of the plurality of channel selection commands, wherein the group of compressed channels includes the channel.

58. (original) The apparatus of claim 57, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

encoding the group of compressed channels into packets or frames based on the data conveyance protocol.

59. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of

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identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

60. (original) The apparatus of claim 59, wherein the memory further comprises operational instructions that cause the processing module to:

convey the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

61. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

62. (original) The apparatus of claim 61, wherein the memory further comprises operational instructions that cause the processing module to:

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convey the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

63. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels; and

nB/mB encoding the data of each of the selected channels, where $n < m$.

64. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

compress the selected channels prior to encoding.

65. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

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encrypt the selected channels prior to encoding.

66. (original) The apparatus of claim 49, wherein the memory further comprises operational instructions that cause the processing module to:

receive a single channel from a multimedia source;

select the single channel based on at least one of the plurality of channel selection commands to produce a selected single channel; and

encode the selecting single channel based on the data conveyance protocol.

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67. (currently amended) An apparatus for multiplexing channels in a multimedia system, the apparatus comprises:

processing module; and

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receiving a channel from each of a plurality of sources to produce a plurality of channels;

receiving, from a plurality of clients, a plurality of channel selection requests by monitoring a shared bus at specific time intervals, identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection requests, decoding, based on a data conveyance protocol of the multimedia system, the data frame to recapture the at least a portion of the one of the plurality of channel selection requests; and

processing the plurality of channel selection requests to determine whether the request can be supported, and, if so, producing a plurality of channel selection commands, wherein each of the plurality of channel selection commands includes an identity of one of the plurality of sources, and an identity of the channel;

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selecting a channel of the plurality of channels per channel selection command of the plurality of channel selection command to produce selected channels; and

encoding each of the selected channels based on thea data conveyance protocol of the multimedia system to produce a set of encoded channel data.

68. (previously presented) The apparatus of claim 67, wherein the each of the plurality of channel selection commands includes at least one of: specific channel selection command, last channel selection command, next channel selection command, previous channel selection command, favorite channel selection command, and select channel from user define list.

69. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to process the plurality of channel selection requests by at least one of:

interpreting at least one channel selection request to identify at least one client of the plurality of clients and at least one of the channel selection requests of the plurality of channel selection requests;

authenticating a client of the plurality of clients that provides a specific channel selection request; and

authenticating the specific channel selection request.

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70. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by:

monitoring packets on a shared bus;

identifying at least one of the packets to contain at least a portion of one of the plurality of channel selection commands; and

decoding, based on the data conveyance protocol, the at least one packet to recapture the at least a portion of the one of the plurality of channel selection commands.

71. (cancelled)

72. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to receive the plurality of channel selection commands by at least one of:

decrypting each of the plurality of channel selection commands; and

decompressing each of the plurality of channel selection commands.

73. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by:

packetizing data of each of the selected channels into a packet that includes a header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and packet sequence number.

74. (original) The apparatus of claim 73, wherein the memory further comprises operational instructions that cause the processing module to:

convey the packet using at least one of: Carrier Sense Multiple Access (CSMA), CSMA with collision avoidance, and CSMA with collision detection.

75. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encoding each of the selected channels by:

framing data of each of the selected channels into a frame that includes header section and a data section, wherein the header section includes at least one of identity the selected channel, type of data of the selected channel, identity of the multimedia source, encryption enable/disable, type of encryption, compression enable/disable, type of compression, and frame number.

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76. (original) The apparatus of claim 75, wherein the memory further comprises operational instructions that cause the processing module to:

convey the frame in accordance with at least one of: a time division multiplexing data conveyance protocol, and frequency division multiplexing data conveyance protocol.

77. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to encode each of the selected channels by at least one of:

multilevel encoding data of each of the selected channels;

non return to zero (NRZ) encoding the data of each of the selected channels;

Manchester encoding the data of each of the selected channels;

block encoding the data of each of the selected channels;
and

nB/mB encoding the data of each of the selected channels,
where $n < m$.

78. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to:

compress the selected channels prior to encoding.

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79. (original) The apparatus of claim 67, wherein the memory further comprises operational instructions that cause the processing module to:

encrypt the selected channels prior to encoding.

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REMARKS/ARGUMENTS

1. In the above referenced Office Action, the Examiner rejected claims 1 6-7, 11, 13-15, 18-22, and 31-33 under 35 USC § 102(e) as being anticipated by Williams (U.S. Patent No. 6,493,873); claims 8-10, 16, 17, 28, and 34-35 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Official Notice; claims 3 and 23 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Basawapatna et al. (U.S. Patent No. 6,598,231); claims 4, 24, 36, 38 and 41-48 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Hodge (US 20010005908); claims 12 and 30 under 35 USC § 103(a) as being unpatentable over Williams (U.S. Patent No. 6,493,873) in view of Hartley (U.S. Patent No. 6,473,414); claims 67-68, 72-73, and 75-79 over Williams (U.S. Patent No. 6,493,873) in view of Hoarty (U.S. Patent No. 5,883,661); claim 69 over Williams (U.S. Patent No. 6,493,873) in view of Hoarty (U.S. Patent No. 5,883,661) and further in view of in view of Basawapatna et al. (U.S. Patent No. 6,598,231); claim 70 over Williams (U.S. Patent No. 6,493,873) in view of Hoarty (U.S. Patent No. 5,883,661) and further in view of in view of Hodge (US 20010005908); claim 74 over Williams (U.S. Patent No. 6,493,873) in view of Hoarty (U.S. Patent No. 5,883,661) and further in view of in view of Hartley (U.S. Patent No. 6,473,414). Claims 49-51 and 53-66 have been allowed. Claims 5, 25, 39-40 and 71 have been objected to.

Claims 1, 3-4, 6-24, 28, 30-36, 38, 41-51, 53-70 and 72-79 are currently pending in this application. Claims 1,

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21, 36 and 67 been amended. Claims 5, 25, 39-49 and 71 have been cancelled. No new matter has been added. Applicant thanks the Examiner for favorable treatment of claims 5, 25, 39-40, 49-51, 53-66 and 71. The rejections above have been traversed and, as such, the Applicant respectfully requests reconsideration of the allowability of claims 1, 3-4, 6-24, 28, 30-36, 38, 41-48, 67-70, and 72-79.

2. As discussed above claim 1 was rejected based on Williams. Claim 1 has been amended to include allowable claim 5. For this reason, Applicant believes that claim 1 and claims 34, and 6-20 that depend therefrom, are patentably distinct from the prior art.

3. As discussed above, Claim 21 was rejected based on Williams. Claim 21 has been amended to include the subject matter of allowable claim 25. For this reason, Applicant believes that claim 21 and claims 22-24, 28, and 30-35 that depend therefrom, are patentably distinct from the prior art.

4. As discussed above, Claim 36 was rejected based on Williams in view of Hodge. Claim 36 has been amended to include subject matter from allowable claim 39. For this reason, Applicant believes that claim 36, and claims 38, and 41-48 that depend therefrom, are patentably distinct from the prior art.

5. As discussed above, claim 67 was rejected based on Williams in view of Hoarty. Claim 67 has been amended to include subject matter from allowable claim 71. For this reason, Applicant believes that claim 67, and claims 68-70

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and 72-79 that depend therefrom, are patentably distinct from the prior art.

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For the foregoing reasons, the applicant believes that claims 1, 3-4, 6-24, 28, 30-36, 38, 41-48, 67-70 and 72-79 are in condition for allowance and respectfully request that they be passed to allowance.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present invention.

No additional fee is due. The Commissioner is authorized to charge any fees that are required or credit any overpayment to Deposit Account No. 50-2126 (VIXS 004).

RESPECTFULLY SUBMITTED,

By: /Bruce E. Stuckman reg. 36,693/
Bruce E. Stuckman
Phone: (512) 241-8444
Fax No. (512) 241-8445

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NOTICE OF ALLOWANCE AND FEE(S) DUE

34280 7590 10/26/2006

TIMOTHY W. MARKISON
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P.O. BOX 160727
AUSTIN, TX 78736

EXAMINER

VU, NGOC K

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 10/26/2006

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,602	05/24/2001	Indra Laksono	VIXS 004	8010

TITLE OF INVENTION: METHOD AND APPARATUS OF MULTIPLEXING A PLURALITY OF CHANNELS IN A MULTIMEDIA SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	01/26/2007

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/864,602 05/24/2001 Indra Laksono VIXS 004 8010

TITLE OF INVENTION: METHOD AND APPARATUS OF MULTIPLEXING A PLURALITY OF CHANNELS IN A MULTIMEDIA SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1400 \$300 \$0 \$1700 01/26/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
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VU, NGOC K 2623 725-038000

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,602	05/24/2001	Indra Laksono	VIXS 004	8010
34280	7590	10/26/2006	EXAMINER	
TIMOTHY W. MARKISON			VU, NGOC K	
VIXS, INC.			ART UNIT	
P.O.BOX 160727			PAPER NUMBER	
AUSTIN, TX 78736			2623	
DATE MAILED: 10/26/2006				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1144 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1144 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	09/864,602	LAKSONO, INDRA	
	Examiner	Art Unit	
	Ngoc K. Vu	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/4/06.
2. ☒ The allowed claim(s) is/are 1,3,6-23,28,30-36,41-51,54-69 and 72-79.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|--|---|



Ngoc K. Vu
Primary Examiner
Art Unit: 2623

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Bruce Stuckman on October 19, 2006.

The application has been amended as follows:

In the claims:

Claims 4, 24, 38, 53, and 70 have been cancelled.

Claim 36, line 15, term "on" has been changed to --from--.

Claim 36, last line, the terms "identified packet." have been changed to --identified packet, wherein the receiving module comprising decoding module to decode the identified packet, based on the data conveyance protocol, to recapture at least a portion of the one of the plurality of channel selection commands.--.

Claim 49, line 16, after "commands;", insert

--decode, based on a data conveyance protocol of the multimedia system, the data frame to recapture the at least a portion of the one of the plurality of channel selection commands;--

Claim 49, line 19, the terms "selection command" have been changed to --selection commands--.

Claim 49, line 20, the term "a data" has been changed to --the data--.

Allowable Subject Matter

2. Claims 1, 3, 6-23, 28, 30-36, 41-51, 54-69, and 72-79 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The closest prior art, William of the record teaches a system comprising a receiver to receive a broadband video/audio/data signal having a number of individual program multiplex signals therein; demodulate the received transmodulated signal and provide user-specified channels to processing or display units, send requests for user-selected channels to the transmodulator which uses these requests to select which of the portions of the broadband signal will be transmodulated; and Lambrecht et al. (US5,951,664 A) teaches transferring periodic data streams on a bus in a computer system. William and Lambrecht, either singularly or in combination, fail to anticipate or render the limitations "wherein the receiving the plurality of channel selection commands further includes monitoring a shared bus at specific time intervals, identifying a data frame at one of the specific time intervals that contains at least a portion of one of the plurality of channel selection commands, and decoding, based on a data conveyance protocol of the multimedia system, the data frame to recapture the at least a portion of the one of the plurality of channel selection command" as recited in claim 1 and similarly recited in claims 21, 36, 49, and 67.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2623

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Laksono (US 7,099,951 B2) teaches a method and apparatus for providing multimedia services to a local area network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc K. Vu whose telephone number is 571-272-7306. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ngoc K. Vu
Primary Examiner
Art Unit 2623

October 19, 2006