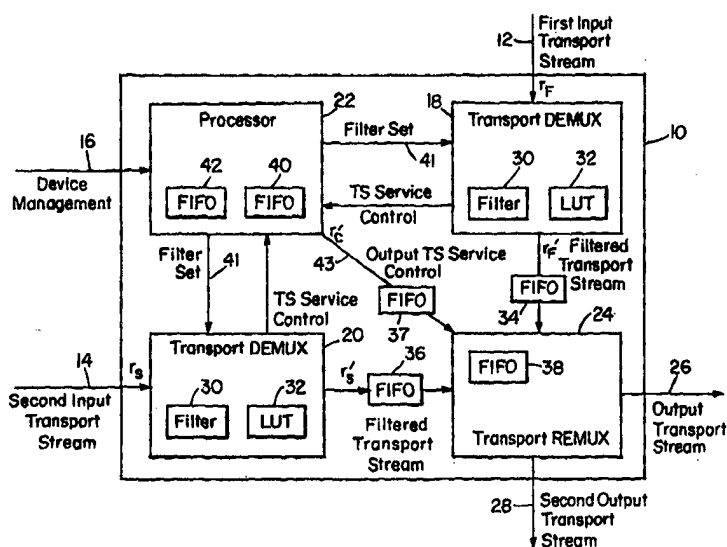




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(54) Title: APPARATUS AND METHOD FOR MULTI-SERVICE TRANSPORT MULTIPLEXING



(57) Abstract

An elementary two-stream transport multiplexer provides for the addition of services contained in a transport stream to a pre-existing transport stream. The elementary multiplexer includes a pair of transport demultiplexers, a processor and a transport remultiplexer. The demultiplexers demultiplex a pair of input transport streams to their constituent service components and service control information tables. The service control information tables are routed to the processor which combines and reconfigures the information within the tables to provide a single set of output service control information tables. The demultiplexers filter the service components based on the output service control tables. The transport remultiplexer multiplexes the output tables with the filtered streams to provide an output transport stream.

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INTERNATIONAL SEARCH REPORT

Internal Application No
PCT/US 97/18058

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 H04N7/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	INTERNATIONAL BROADCASTING CONVENTION, 12 September 1996, pages 288-293, XP002040478 BUNGUM O W: "TRANSMULTIPLEXING, TRANSCONTROL AND TRANSSCRAMBLING OF MPEG-2/DVB SIGNAL"	1-9, 13-24
Y	see the whole document	10-12, 25-27
Y	--- WO 95 23495 A (PHILIPS ELECTRONICS NV ; PHILIPS NORDEN AB (SE); ROSENGREN JURGEN F) 8 September 1995 see figure 2 see page 3, line 21 - line 32 see page 7, line 9 - line 15 --- -/--	10-12, 25-27

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- * & * document member of the same patent family

Date of the actual completion of the international search

28 January 1998

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

Inter. Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FERNSEH UND KINOTECHNIK, vol. 48, no. 10, 1 October 1994, pages 545-550, 553, XP000468290 RIEMANN U: "DER MPEG-2-STANDARD GENERISCHE CODIERUNG FUR BEWEGTBILDER UND ZUGEHORIGER AUDIO-INFORMATION MULTIPLEX-SPEZIFIKATION FOR DIE FLEXIBLE UBERTRAGUNG DIGITALER DATENSTROME" see section 3.1: 'Multiplexing' on pages 545-547 see figure 8 ---	25-27
A	SIGNAL PROCESSING OF HDTV. PROCEEDINGS OF THE INTERNATIONAL WORKSHOP ON HDTV, 1995, pages 435-441, XP002046490 STAMMNITZ P ET AL: "HARDWARE IMPLEMENTATION OF THE TRANSPORT STREAM DEMULTIPLEXER FOR THE HDTV DEMONSTRATOR" see the whole document ---	1-27
A	IEE COLLOQUIUM ON MPEG WHAT IT IS AND WHAT IT ISN'T, 1 January 1995, pages 4/1-4/13, XP000560804 SARGINSON P A: "MPEG-2: A TUTORIAL INTRODUCTION TO THE SYSTEMS LAYER" see the whole document -----	1-27

INTERNATIONAL SEARCH REPORT

national application No.

PCT/US 97/ 18058

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see continuation sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-27

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. claims 1-27:

Transport stream multiplexing involving the construction of a set of control information tables with PID conflict avoidance by PID filtering and PID modification

2. claims 28-42:

Transport stream multiplexing involving series coupling

3. claims 43-50:

Transport stream multiplexing involving bandwidth requests and allocation

4. claims 51-56:

Multiplexing involving buffer servicing

Information on patent family members

PCT/US 97/18058

Form PCT/ISA/210 (patent family annex) (July 1992)