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(54) **FRAME BASED DATA TRANSMISSION OVER SYNCHRONOUS DIGITAL HIERARCHY NETWORK**

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

This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

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(51) **Int. Cl.**^{7} **H04L 12/56**

(52) **U.S. Cl.** **370/408**
(58) **Field of Search** 370/474, 476, 370/498, 353–356, 466, 907, 914, 916, 442, 464, 395.51, 232, 395.63, 395.44, 401–403, 465

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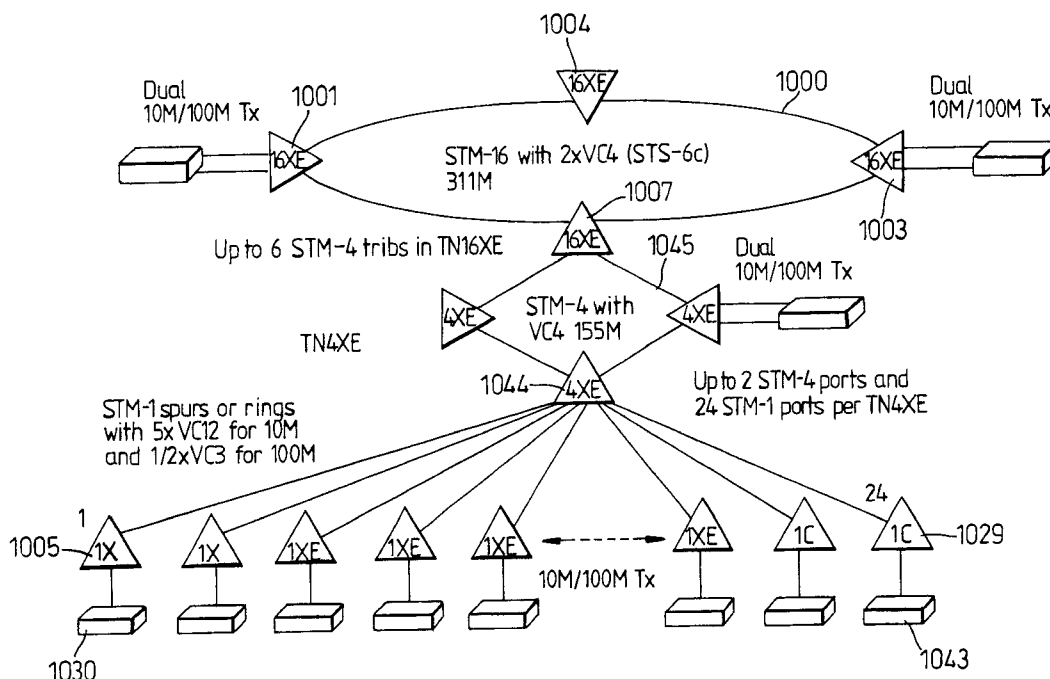* cited by examiner

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(57) **ABSTRACT**

A frame based data communications network is interfaced to a synchronous digital hierarchy network via a plurality of frame based data port cards incorporated into a plurality of synchronous multiplexers. Each port card comprises a conventional frame based data port, a frame switch, a rate adapter means and a mapping means for mapping data frames into a plurality of SDH virtual containers. Frame based data is incorporated directly into a synchronous virtual container without encapsulation in an intermediate protocol. A number of topologies of a frame based data channel network are possible, overlaid on the underlying synchronous transport network, including an open loop topology, a ring mode topology, and a backhaul topology.
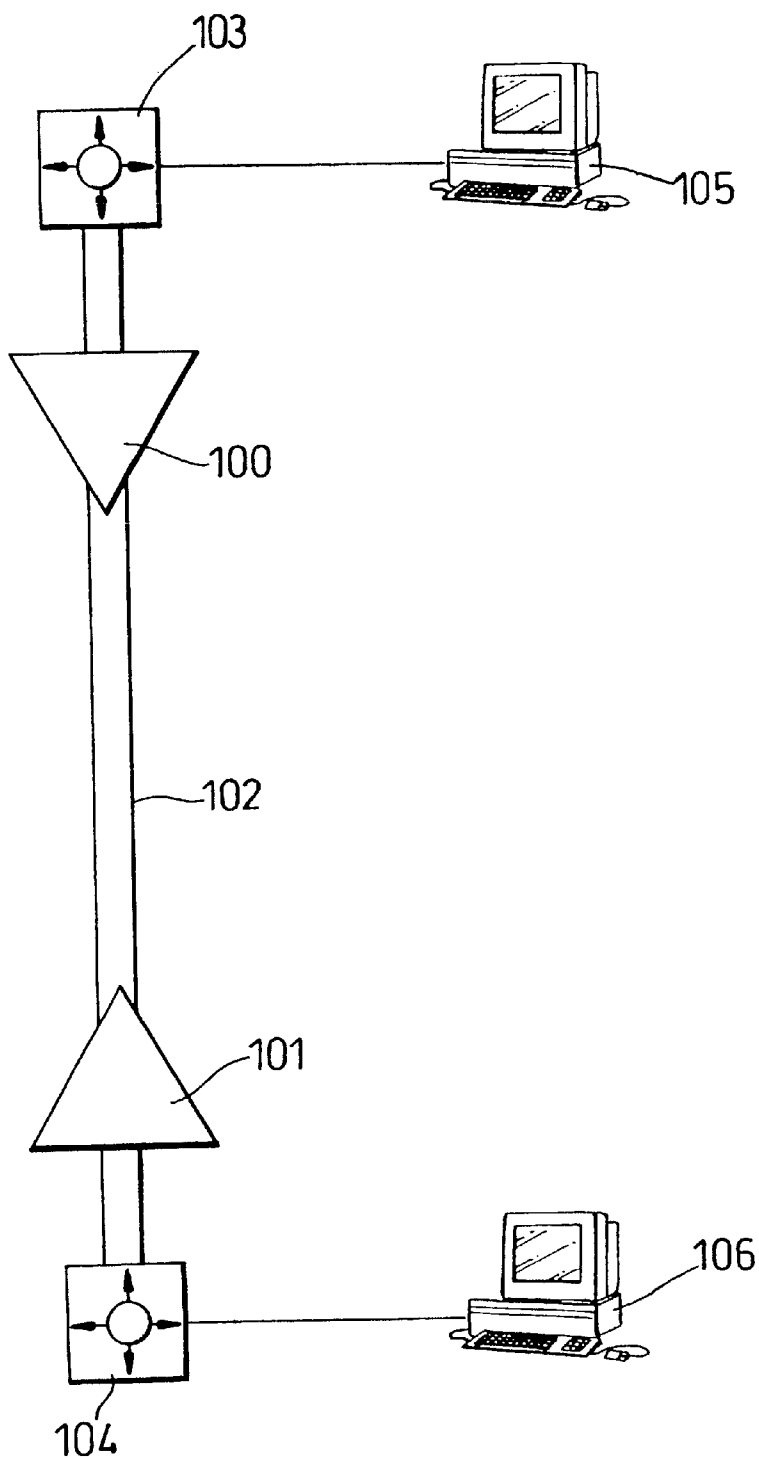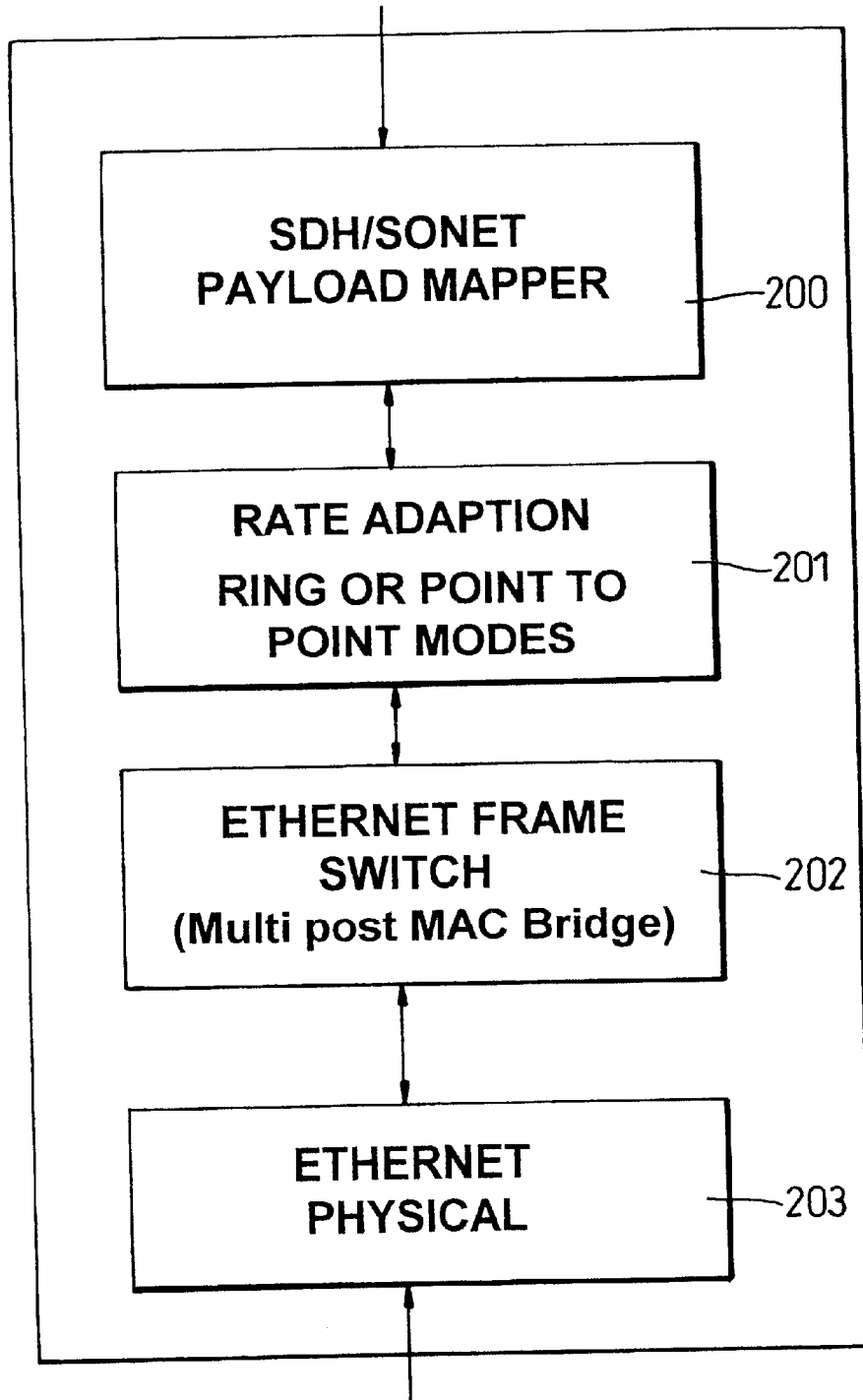
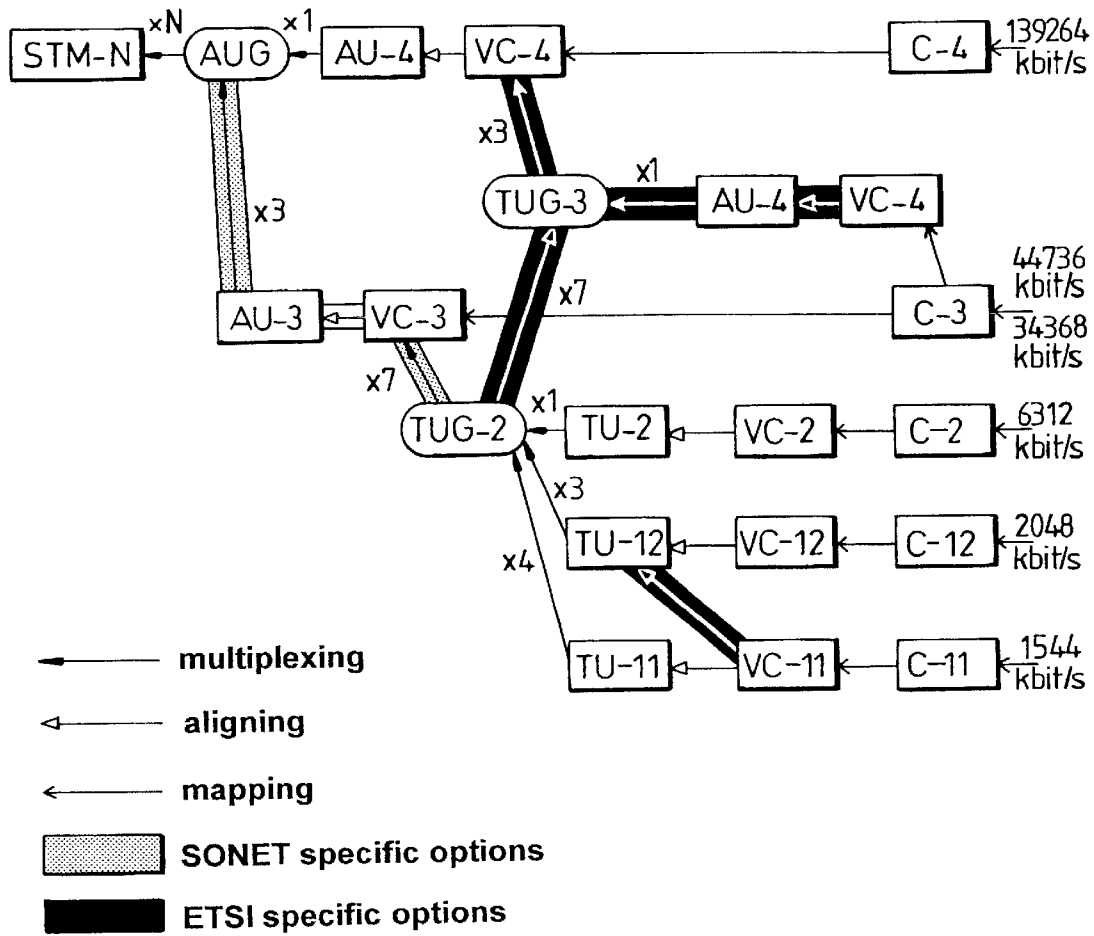**30 Claims, 11 Drawing Sheets**

Fig. 1

Fig. 2

Fig. 3
(Prior Art)

270 x N columns (bytes)

9 x N

261 x N

R 1

R 2

Section Overhead (RSOH)

1002

R 3

R4   AU Pointer(s)

R5

STM–N Payload

R6

Section Overhead (MSOH)

R7

R8   1003

9 Rows

R9

1001

1000

Fig. 4
(Prior Art)

DOCKET ALARM
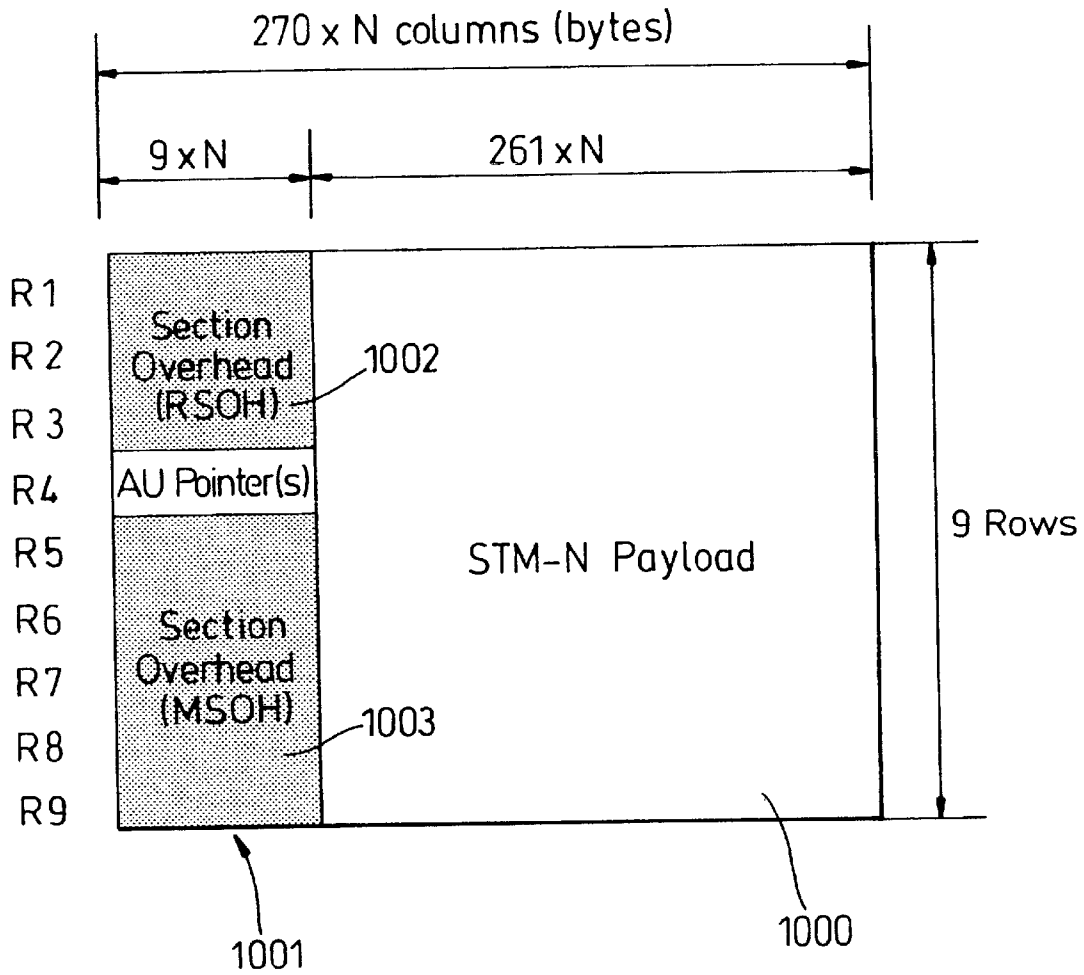
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