

(12) **United States Patent**  
Chase et al.

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(45) **Date of Patent:** Feb. 13, 2001

(54) **TRAFFIC MANAGEMENT FOR FRAME  
RELAY SWITCHED DATA SERVICE**

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(\*) Notice: Under 35 U.S.C. 154(b), the term of this  
patent shall be extended for 0 days.

(21) Appl. No.: **08/988,424**

(22) Filed: **Dec. 10, 1997**

(Under 37 CFR 1.47)

#### Related U.S. Application Data

(60) Provisional application No. 60/051,564, filed on Jul. 3,  
1997.

(51) Int. Cl.<sup>7</sup> ..... **H04L 12/28**

(52) U.S. Cl. .... **370/232; 370/253; 370/254**

(58) Field of Search ..... 370/412, 414,  
370/416, 468, 236, 232, 253, 395, 429,  
234, 235, 254

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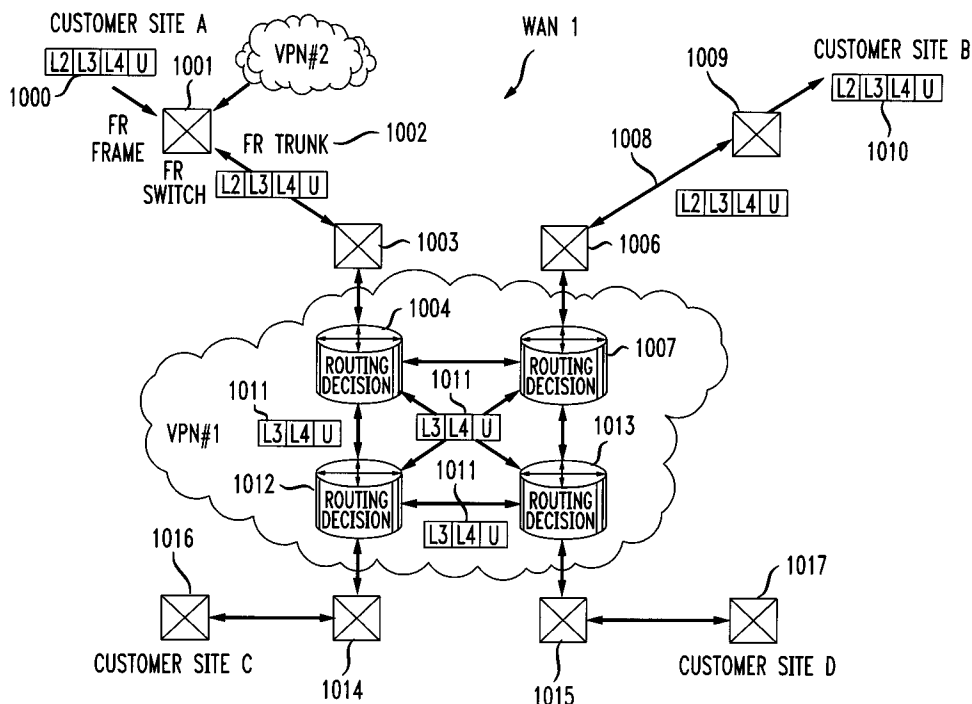
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*Assistant Examiner*—Brenda H. Pham

(57) **ABSTRACT**

A new type of data transport service which uses a frame relay layer 2 data link connection identifier (DLCI) to select among various service types, feature sets, and/or closed user groups (CUGs). A layer 3 address may be extracted from a layer 2 frame, and the layer 3 address information may be used to route a data packet over a packet-switched network according to the service classes, feature sets, and/or CUGs selected. At the destination, the layer 3 data packet may again be enclosed in a layer 2 frame with a DLCI indicating the service classes, features sets, and/or CUGs. Because the use of conventional permanent virtual circuits (PVCs) is not required in aspects of the invention, new methods of measuring and managing network traffic are presented.

**31 Claims, 10 Drawing Sheets**



Intellectual Ventures I LLC

**Exhibit 2006**

ERICSSON v. IV I

IPR2018-00727

FIG. 1

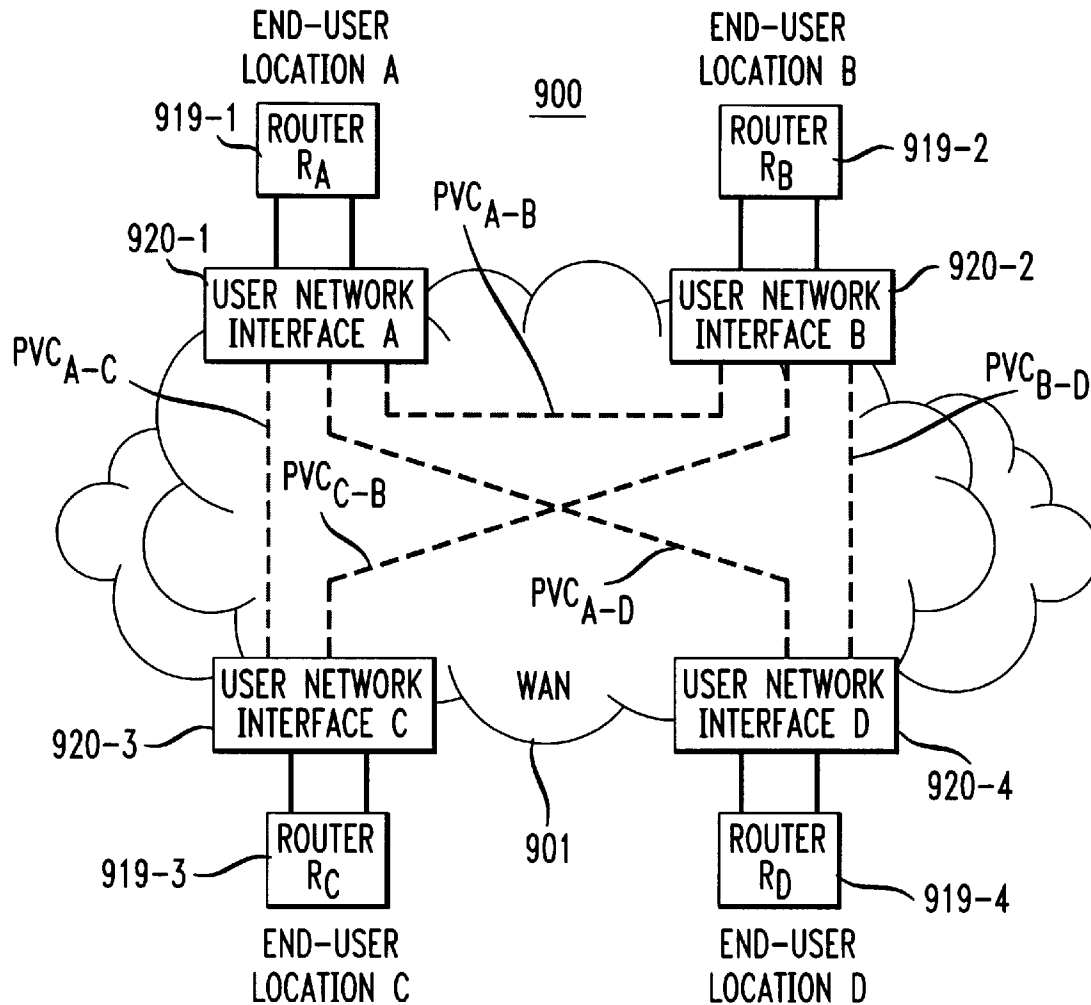


FIG. 2

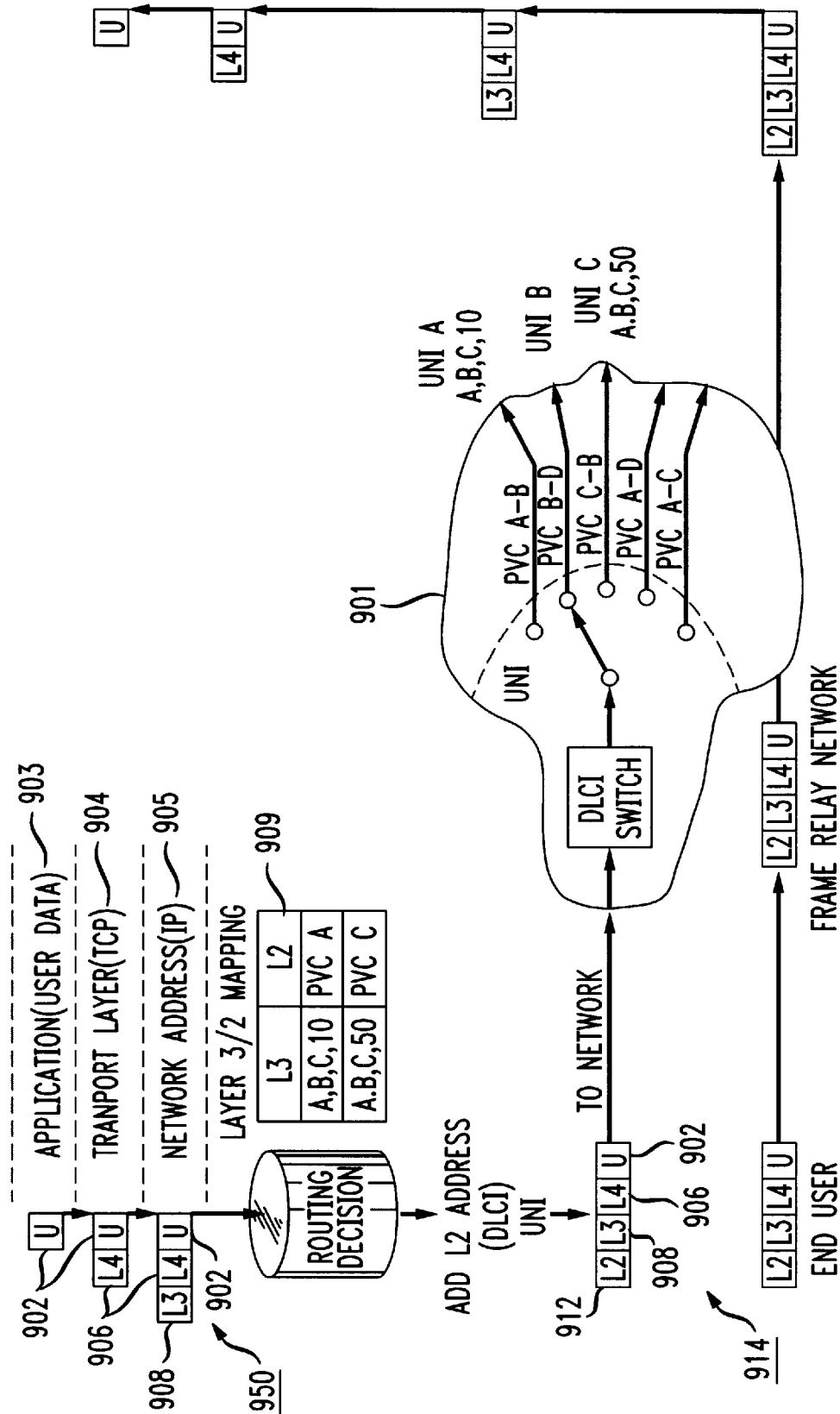


FIG. 3

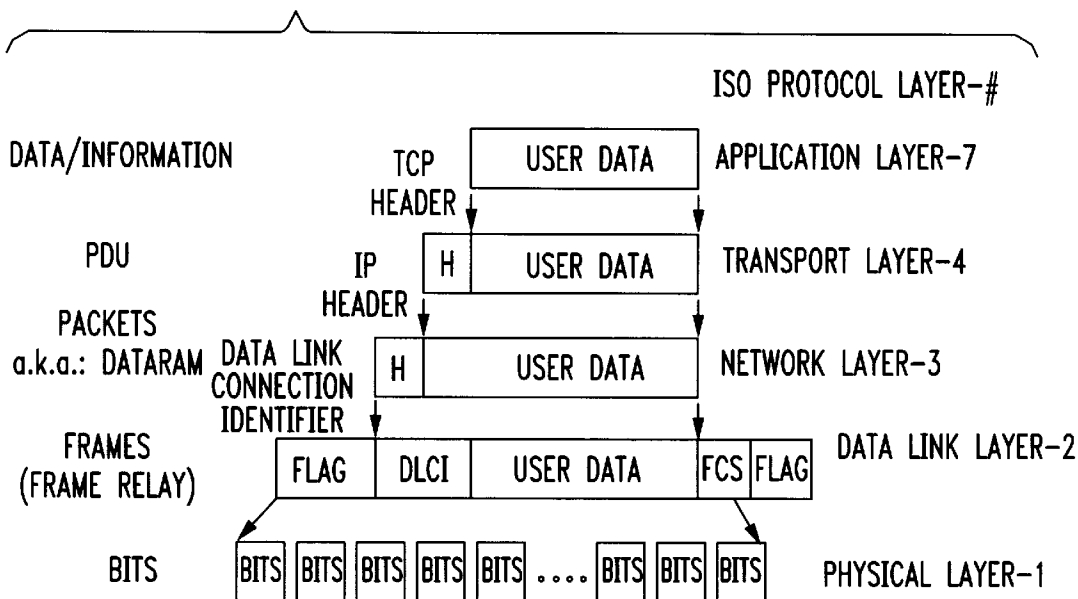
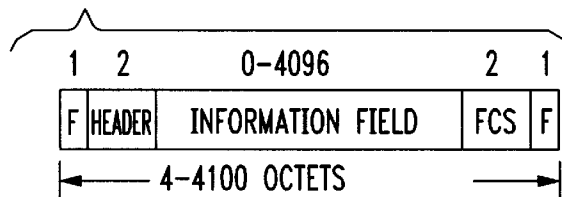


FIG. 4



F = FRAME DELIMITER (FLAG)

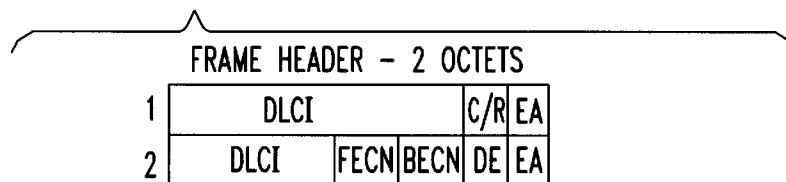
(01111110 BINARY VALUE)

HEADER = FR HEADER FIELD

INFORMATION FIELD = USER'S PAYLOAD

FCS = FRAME CHECK SEQUENCE

FIG. 5



DLCI = DATA LINK CONNECTION IDENTIFIER (10 BITS)

C/R = COMMAND / RESPONSE (1BIT)

EA = EXTENDED ADDRESS (2 BITS)

FECN = FORWARD EXPLICIT CONGESTION NOTIFICATION (1 BIT)

BECN = BACKWARD EXPLICIT CONGESTION NOTIFICATION (1 BIT)

DE = DISCARD ELIGIBILITY (1 BIT)

FIG. 6

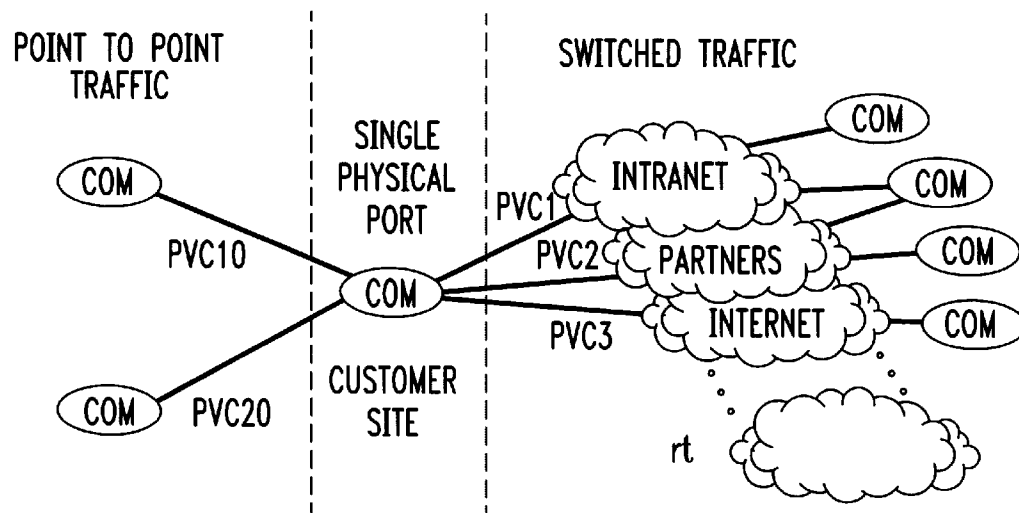
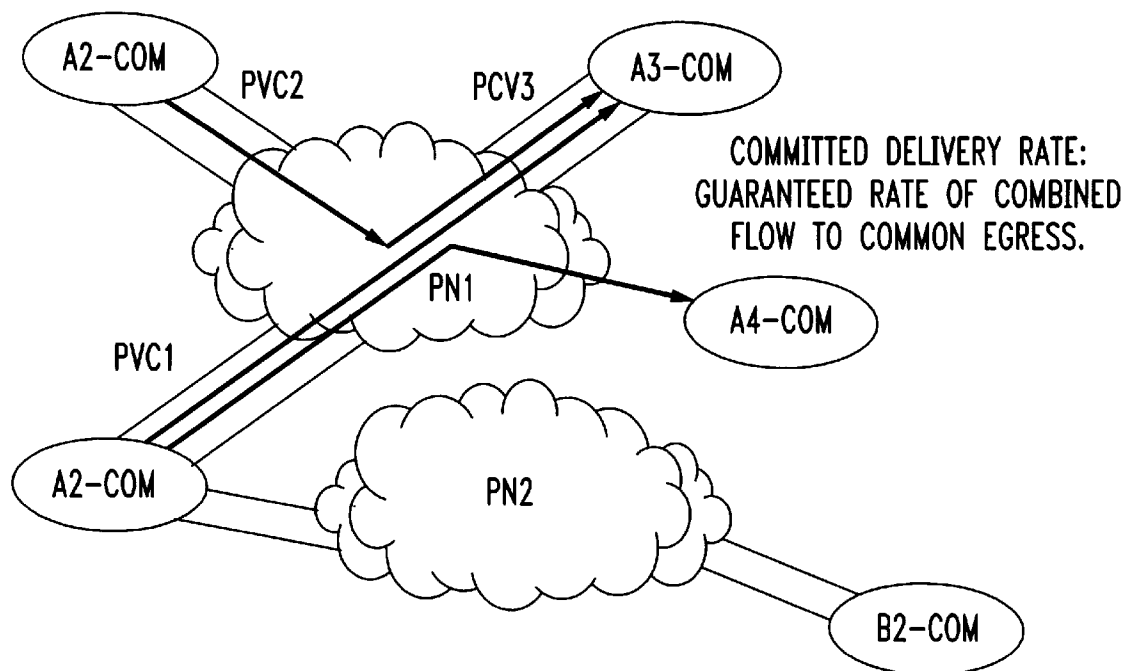


FIG. 11



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