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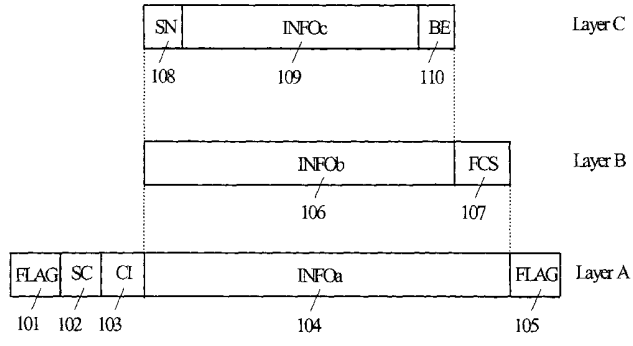
(54) Title: DATA COMMUNICATION IN FRAME MODE FOR DIFFERENCIATED SERVICES




(57) Abstract: The present invention is related to a method for data communication for differential services based in frames with flexible format, which allows the simultaneous transmission of several types of information with different requirements of quality of service over a common communication channel. The quality of service of the different services is guaranteed with a mechanism of channel preemption, which allows the immediate occupation of the channel with the most priority frame, resuming the transmission of the lower priority frame, without the need to retransmit the information already transmitted. This preemption mechanism guarantees simultaneously a low transmission delay for the services more sensitive to transmission delays and an efficient global channel occupation. This mechanism is recursive, which means that the frame that made channel preemption can itself be pre-empted by another more priority frame, and this process can be repeated whenever a more priority frame requests transmission. The said frames are based on the HDLC protocol, as defined in ISO 3309, using several mechanisms and fields depending on the service requirements. Three different frame formats, A, B and C are defined and correspond to three functional layers equally named A, B and C. Layer A corresponds basically to frame delineation, multiplexing and information transparency. Layer B corresponds to error detection and layer C to channel preemption and frame fragmentation.

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DESCRIPTION

# DATA COMMUNICATION IN FRAME MODE FOR DIFFERENCIATED SERVICES

## BACKGROUND OF THE INVENTION

The present invention is related to a method for data communication over a common channel. The classical data communication technologies in Wide Area Networks are circuit switching and packet switching, having Frame Relay and Asynchronous Transfer Mode (ATM) assumed more recently a significant role. In the areas related with the invention, data communications and networking, there is a lot of activity in several standardisation bodies, namely the International Organisation for Standardisation, ITU-T, IETF and Frame Relay Forum. The following documents of these standardisation bodies are referred in this invention:

International Organisation for Standardisation, ISO Standard 3309-1979, "Data communication - High-level data link control procedures - frame structure", 1979.

International Organisation For Standardisation, ISO Standard 3309:1984/PDAD1, "Information processing systems - Data communication - High-level data link control procedures - Frame structure - Addendum 1: Start/stop transmission", 1984.

IETF RFC 791, Postel, J., "IP: Internet Protocol", September 1981.

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IETF RFC 2508, Casner, S.; Jacobson, V., "Compressing IP/UDP/RTP Headers for Low-Speed Serial Links", February 1999.

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