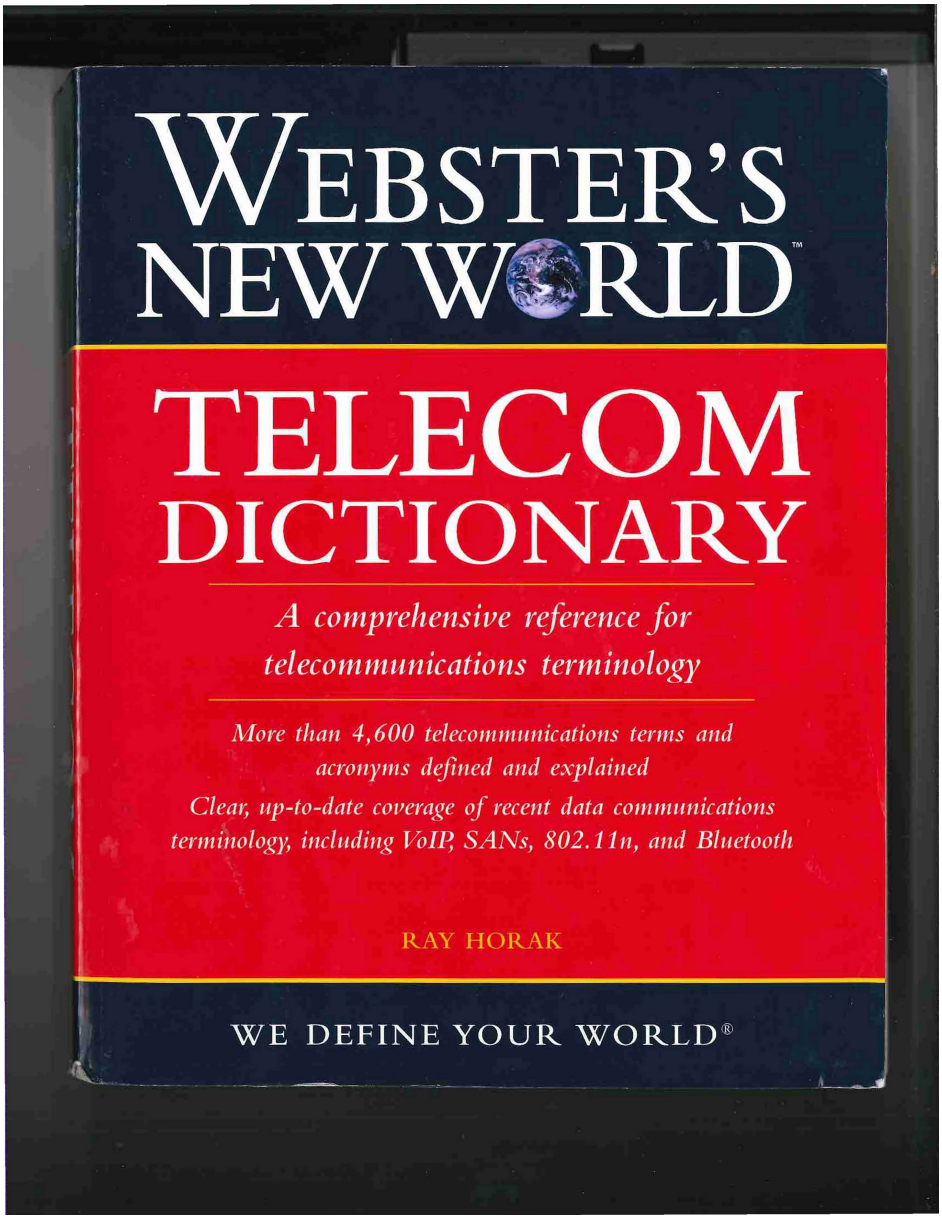

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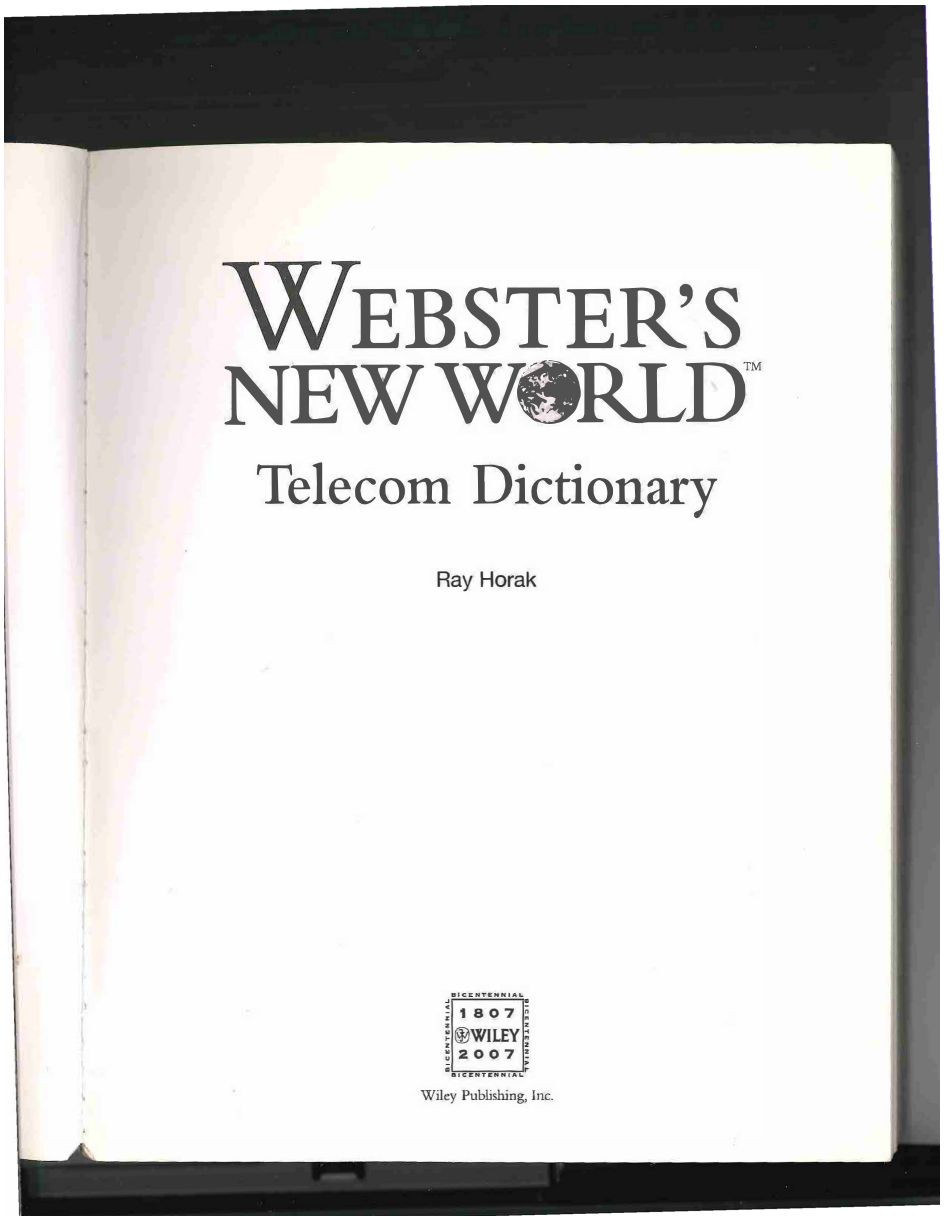

WEBSTER'S NEW WORLD™

Telecom Dictionary

Ray Horak

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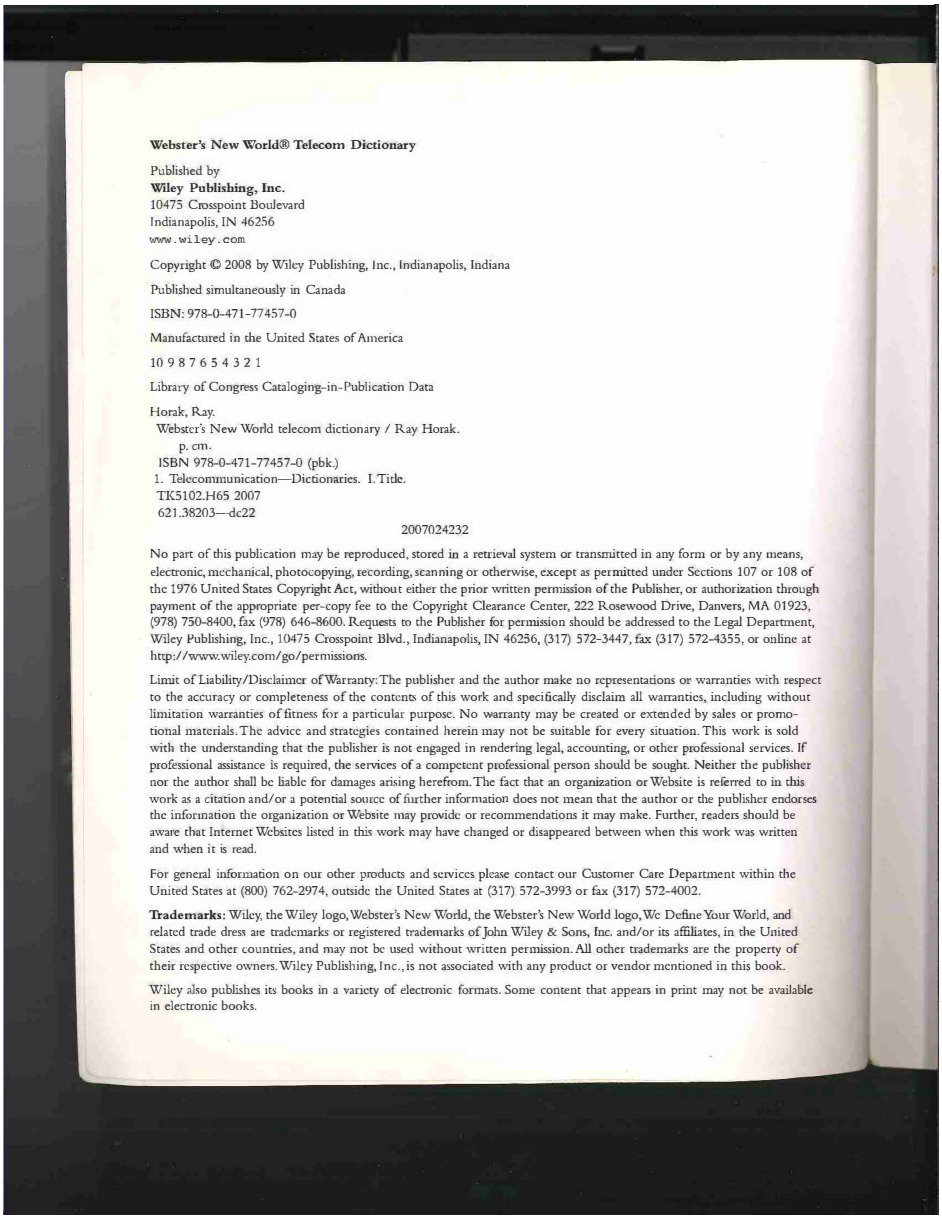

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CLP (Cell Loss Priority) In asynchronous transfer mode (ATM), one bit in the cell header that identifies the priority level of the cell to determine the eligibility of that cell for discard in the event of network congestion. Applications such as LAN-to-LAN traffic and e-mail are tolerant of loss. Applications such as real-time voice and video are highly intolerant of loss. See also *ATM*, *cell*, *congestion*, *e-mail*, *header*, *LAN*, *real-time*, *traffic*, *video*, and *voice*.

CLR (Cell Loss Ratio) In asynchronous transfer mode (ATM), a dependability parameter expressed as the ratio of the number of lost cells to the number of transmitted cells. Cell loss can occur for reasons that include misdirection of cells by a switch, a congestion problem causing a discard in consideration of buffer capacity, a station exceeding its peak cell rate (PCR) resulting in cell discard, or a cell that exceeds the maximum cell transfer delay (CTD) and arrives too late for processing. CLR applies to all service categories except unspecified bit rate (UBR). See also *ATM*, *buffer*, *cell*, *congestion*, *CTD*, *PCR*, and *UBR*.

cm (centimeter) One one-hundredth (10^{-2}, or 1/100) of a meter. See also *meter*.

CM (Cable Modem) See *cable modem*.

CMR (Cell Misinsertion Rate) In asynchronous transfer mode (ATM), a dependability parameter expressed as the number of cells received over a time interval at a destination endpoint that were not transmitted originally by the source endpoint of the virtual circuit (VC). CMR is expressed as a rate, rather than as a ratio, because the number of misinserted cells is beyond the control of the originating and destination endpoints. Although the header checksum is designed to prevent misinsertion, CMR can result from the corruption of a cell header, which would cause a cell to be misinserted into the cell stream of another source-destination pair of end points. See also *ATM*, *cell*, *checksum*, *endpoint*, *header*, and *VC*.

CMTS (Cable Modem Termination System) The head-end portion of a CATV network designed to support high speed data, as described in the Data over Cable Service Interface Specification (DOCSIS). Matching DOCSIS cable modems (CMs) in the CMTS and the customer premises support high speed, full duplex (FDX) data communications over a hybrid fiber/coax (HFC) system. The CMTS supports a packet data connection to an IEEE 802.3 10/100-Mbps Ethernet port on a router. In terms of the OSI Reference Model, the system runs the Internet Protocol (IP) at the Network Layer in Ethernet frames at the Data Link Layer. Associated with the CMTS are various servers for security, address translation, data caching, and video caching. A CMTS can support as many as 2,000 cable modem users on a single 6-MHz channel (8 MHz in Europe), with issues of congestion for shared bandwidth becoming more severe as the number of active users increases. The modem on the customer premises is in the form of a set-top box, which supports traditional coax connections to multiple TV sets and a 10/100BaseT Ethernet connection to a PC or to a hub serving multiple PCs. See also *10BaseT*, *100BaseT*, *802.3*, *bandwidth*, *caching*, *coaxial cable*, *Data Link Layer*, *DOCSIS*, *Ethernet*, *HFC*, *IP*, *Network Layer*, *optical fiber*, *OSI Reference Model*, *server*, and *set-top box*.

CO (Central Office) **1.** A local telephone company office that provides a central point for the termination of lines and trunks, and where they can be interconnected, i.e., connections can be exchanged. An integral part of the public switched telephone network (PSTN), a CO traditionally houses one or more voice-optimized circuit switches to interconnect subscriber lines within a local area known as the carrier serving area (CSA) and to connect subscriber local loops to network trunks. A contemporary CO may also house a variety of voice and data switches, multiplexers, concentrators, and so on. Synonymous with *central office exchange* (COE), *Class 5 office*, *end office*, and *local exchange*. See also *CSA* and *PSTN*. **2.** The CO switch, rather than the building that houses it. Synonymous with *Class 5 switch*, *edge switch*, *end office*, and *local exchange*.

Coarse Wavelength Division Multiplexing (CWDM) See *CWDM*.

coax (coaxial cable) See *coaxial cable*.

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the Application Layer. Routers can be capable of performing the gateway functions associated with protocol conversions such as code conversions or those necessary to connect dissimilar networks, such as circuit-switched and packet-switched networks. See also *Data Link Layer*, *gateway*, *hop*, *Network Layer*, *OSI Reference Model*, *packet*, *protocol*, and *switch*.

routine Synonymous with *procedure*. A program module, or section of code, that executes a specific task.

routing Referring to the process of deciding where to forward packets based on a view of the network as a whole. See also *router*.

routing by rumor See *distance-vector routing protocol*.

Routing Information Protocol (RIP) See *RIP*.

RPELPC (Regular Pulse Excitation Linear Predictive Coding) A speech encoding technique that uses regular pulses in an excitation frame and a long-term predictor, based on long-term correlation of voice samples, to model the speech pitch. RPELPC at 13 kbps is specified for use in cellular radio networks conforming to the pan-European GSM standard. See also *cellular radio*, *encode*, *frame*, and *GSM*.

RPR (Resilient Packet Ring) The IEEE 802.17 specifications for a medium access control (MAC) layer protocol that uses Ethernet switching and a dual counter-rotating ring topology to optimize the transport of Ethernet/IP packet data traffic over optical fiber rings. RPR is designed to maintain the resiliency of SONET/SDH, but at a much reduced level of overhead. As RPR is independent of the Physical Layer, it can be implemented over existing SONET/SDH physical rings or can run on a standalone basis. RPR calls for dual counter-rotating local ringlets that interconnect nodes where data traffic is intended to drop. RPR also uses statistical multiplexing, which allows bandwidth to be oversubscribed, while establishing Committed Information Rate (CIR) and peak-rate thresholds per application. The nodes negotiate bandwidth requirements among themselves based on fairness algorithms and in consideration of a classification scheme that recognizes and provides higher priority access to traffic sensitive to latency and jitter while ensuring that best effort traffic, such as Internet traffic, is afforded equal access and a fair share of the remaining bandwidth. RPR supports the following class of service (CoS) levels:

- Class A traffic is intolerant of latency and jitter. RPR addresses Class A traffic through a high CIR that ensures the availability of an average level of bandwidth appropriate for high priority traffic such as real-time voice and video.
- Class B is more tolerant of latency and jitter. RPR addresses Class B traffic through either a lower CIR that ensures the availability of an average amount of bandwidth appropriate for medium priority applications that have less stringent QoS requirements, or through an Excess Information Rate (EIR) option. In the event of network congestion, Class B traffic is subject to fairness-based flow control. Class B is intended for business-class data traffic such as transaction processing.
- Class C traffic is best effort traffic with no latency or jitter requirements and, therefore, is strictly EIR traffic. In the event of network congestion, Class B traffic is subject to fairness-based flow control. Class B traffic includes low priority applications such as consumer-level Internet access.

In the event of a node or link failure, the RPR protection scheme can restore the network in 50 ms or less, which is the SONET/SDH benchmark. There are two restoral mechanisms: wrapping and steering. The wrap option calls for data to travel around the ring until it reaches the node nearest the break. That node turns the traffic around and sends it in the reverse direction over the counter-rotating ring. The steer option calls for the originating station to exercise sufficient intelligence to avoid the failed ring and place the traffic on the ring that retains continuity. Traffic continuously travels over both fibers of the dual counter-rotating ringlets. See also *802.17*, *bandwidth*, *best effort*, *CIR*, *CoS*, *EIR*, *Ethernet*, *flow control*, *IEEE*, *IP*, *jitter*, *latency*, *MAC*, *node*, *optical fiber*, *overhead*, *QoS*, *real-time*, *ring topology*, *SDH*, *SONET*, and *STDM*.

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