EIBA Handbook Series

Release 3.0

Volume 3:
System Specifications

Part 3: Medium Independent Layers

Chapter 2: Data Link Layer General

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1. Overview

The data link layer (in the following also called "layer-2") is the layer between the data link layer user and the physical layer. The EIB data link layer conforms to the definitions of the ISO/OSI model (ISO 7498) data link layer. It provides the medium access control and the logical link control.

The data link layer uses the services of the physical layer and provides services to the data link layer user (Fig. 3/3/2-1). The logical link control examines the frame format and destination address of a frame and decides if the frame shall be received. The data link layer detects transmission errors and repeated frames. Individual octets coming from the physical layer with a Ph_Data.ind are put together to a link service data unit (LSDU). LSDUs that have to be transmitted to a destination are delivered to the physical layer with a Ph_Data.req.

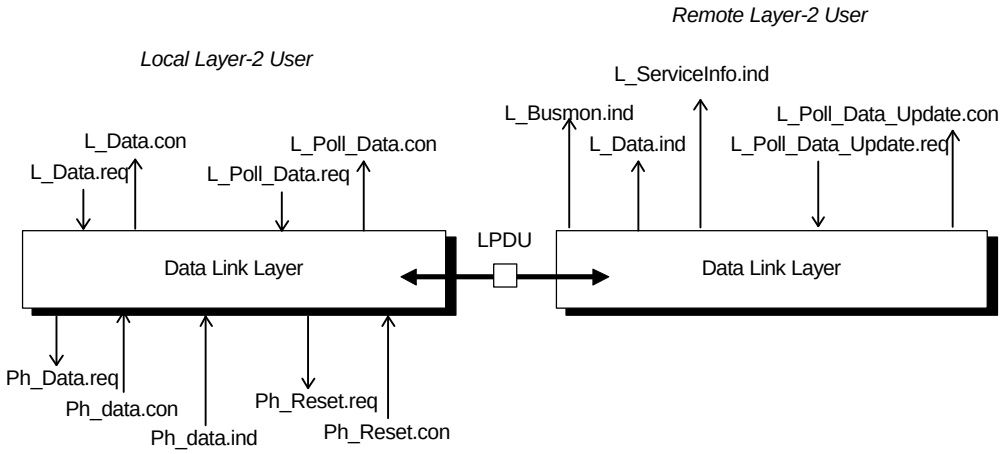

Fig. 3/3/2-1: Interactivity of the Data Link Layer

The data link layer's task is to offer a reliable datagram service at the same line between end devices, between end devices and routing devices and between routing devices. It shall prevent from service duplication in case of repetitions because of corrupted acknowledgment frames.

1.1 Possible EIB Media and their Impact on Layer-2

EIB is defined for the following media:

- Twisted Pair
  (See Chapter 3/2/1 "EIB Implementation on Twisted Pair")
- Power Line
  (See Chapter 3/2/2 "EIB Implementation on Powerline")
- Radio Frequency
- Infra-Red

Each medium needs a specially dedicated medium access control and a logical link control that adapts to the medium access control. See specific chapters as indicated for the media above.