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Information processing systems — Data communication — Multilink procedures

Systèmes de traitement de l'information — Communication de données — Procédures multiliaison

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

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Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Information processing systems — Data communication — Multilink procedures

0 Introduction

Multilink procedures reference the layers of the ISO Open Systems Interconnection (OSI) reference model; specifically the physical, data link, and network layers. The multilink procedures (MLP) reside in the data link layer.

Multilink procedures provide the means for accepting data units from the network layer, scheduling data units for transmission and retransmission over a group of parallel data links, and reordering the received data units prior to delivering them to the network layer. Multilink procedures provide the following general features :

a) achieve economy and reliability of service by providing multiple connections between data stations;

b) permit addition and deletion of connections without interrupting the service provided by the multiple connections;

c) optimize bandwidth utilization of a group of connections through load sharing;

d) achieve graceful degradation of service when a connection(s) fails;

e) provide each multiple connection group with a single logical data link appearance to the network layer; and

f) provide, when required, resequencing of the received data units prior to delivering them to the network layer.

1 Scope and field of application

This International Standard specifies multilink procedures where a multiplicity of parallel data links at the data link layer are used to provide a variable bandwidth data link between network layer entities. The multilink procedures (MLP) exist as a new upper sublayer of the data link layer, operating between the network layer and a multiplicity of single data link protocol functions (SLPs) in the data link layer (see figure 1).

This International Standard does not specify the way in which the SLPs indicate to the MLP that the transmission of a multilink frame has successfully been completed.

These multilink procedures do not preclude the use of different single link procedures, each with differing delay characteristics and/or line speeds to form one multilink group.

When the procedures defined by this International Standard are to be used on one or more parallel data links, both ends of the data link must know that these procedures are to be used before the first multilink frame is sent. This could be achieved by a prior agreement that all communications on this data link will use these procedures, or by one of the SLPs negotiating the use of these procedures, or by some other means. The method by which both ends achieve a common understanding as to the use or non-use of these multilink procedures is not defined in this International Standard.