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OPEN SYSTEMS INTERCONNECTION – GENERAL SERVICE DEFINITIONS

RELIABLE TRANSFER: MODEL AND SERVICE DEFINITION

ITU-T Recommendation X.218

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation X.218 was revised by the ITU-T Study Group VII (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR, or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

2 In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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INTRODUCTION

This Recommendation defines the services provided by application-service-element – the Reliable Transfer Service Element (RTSE) – to provide for the Reliable Transfer of application-protocol-data-units (APDUs) between open systems. This Recommendation is one of a set of Recommendations defining sets of application-service-elements commonly used by a number of applications.

Reliable Transfer provides an application-independent mechanism to recover from communication and end-system failure minimizing the amount of retransmission.

This Recommendation is technically aligned with ISO 9066-1.

Recommendation X.218

RELIABLE TRANSFER: MODEL AND SERVICE DEFINITION¹⁾*(Melbourne, 1988; revised Helsinki, 1993)*

The CCITT,

considering

(a) that Recommendation X.200 defines the Basic Reference Model of Open Systems Interconnection (OSI) for CCITT applications;

(b) that Recommendation X.210 defines the service conventions for describing the services of the OSI reference model;

(c) that Recommendation X.216 defines the Presentation Layer service;

(d) that Recommendation X.217 defines the Association Control service;

(e) that Recommendation X.228 defines the Reliable Transfer protocol;

(f) that there is a need for common Reliable Transport support for various applications,

unanimously declares

that this Recommendation defines the Reliable Transfer service of Open Systems Interconnection for CCITT Applications as given in the Scope and field of application.

1 Scope and field of application

This Recommendation defines the services provided by the Reliable Transfer Service Element (RTSE). The RTSE services are provided by the use of the RTSE protocol (Recommendation X.228) in conjunction with the Association Control Service Element (ACSE) services (Recommendation X.217) and the ACSE protocol (Recommendation X.227), and the presentation-service (Recommendation X.216).

No requirement is made for conformance to this Recommendation.

2 References

The following Recommendations, and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid Recommendations is regularly published.

Recommendation X.200, *Reference Model of Open Systems Interconnection for CCITT Applications* (see also ISO 7498).

Recommendation X.208, *Specification of abstract syntax notation* (see also ISO 8824).

Recommendation X.209, *Specification of Basic Encoding Rules for the abstract syntax notation* (see also ISO 8825).

Recommendation X.210, *Open Systems Interconnection Layer Service Definition Conventions* (see also ISO/TR 8509).

Recommendation X.216, *Presentation Service Definition for Open Systems Interconnection for CCITT Applications* (see also ISO 8822).

¹⁾ Recommendation X.218 and ISO 9066-1 [Information processing systems – Text Communication – Reliable Transfer – Part 1: Model and Service Definition] were developed in close collaboration and are technically aligned.

- Recommendation X.217, *Association Control Service Definition for CCITT Applications* (see also ISO 8649).
 Recommendation X.227, *Association Control Protocol Specification for CCITT Applications* (see also ISO 8650).
 Recommendation X.228, *Reliable Transfer: Protocol Specification* (see also ISO 9066-2).

3 Definitions

3.1 Reference model definitions

This Recommendation is based on the concepts developed in Recommendation X.200 and makes use of the following terms defined in it:

- a) Application Layer;
- b) application-process;
- c) application-entity;
- d) application-service-element;
- e) application-protocol-data-unit;
- f) application-protocol-control-information;
- g) Presentation Layer;
- h) presentation-service;
- i) presentation-connection;
- j) session-service;
- k) session-connection;
- l) transfer syntax;
- m) two-way-alternate interaction; and
- n) user-element.

3.2 Service convention definitions

This Recommendation makes use of the following terms defined in Recommendation X.210:

- a) service-provider;
- b) service-user;
- c) confirmed service;
- d) non-confirmed service;
- e) provider-initiated service;
- f) service-primitive; primitive;
- g) request (primitive);
- h) indication (primitive);
- i) response (primitive); and
- j) confirm (primitive).

3.3 Presentation service definitions

This Recommendation makes use of the following terms defined in Recommendation X.216:

- a) abstract syntax;
- b) abstract syntax name;
- c) default context;
- d) presentation context;
- e) transfer syntax name.

3.4 Association control definitions

This Recommendation makes use of the following terms defined in Recommendation X.217:

- a) application-association; association;
- b) application context;
- c) Association Control Service Element;
- d) X.410-1984 mode.

3.5 Reliable transfer definitions

For the purpose of this Recommendation, the following definitions apply:

3.5.1 association-initiating-application-entity; association-initiator: The application-entity that initiates the application-association.

3.5.2 association-responding-application-entity; association-responder: The application-entity that responds to the initiation of an application-association by another AE.

3.5.3 sending-application-entity; sender: The application-entity that sends, or may send (i.e. possesses the TURN) the APDU to the receiving application-entity.

3.5.4 receiving-application-entity; receiver: The application-entity that receives, or may receive (i.e. does not possess the Turn) the APDU from the sending application-entity.

3.5.5 requestor: The part of an application-entity that issues a request primitive, or receives a confirm primitive for a particular RTSE service.

3.5.6 acceptor: The part of an application-entity that receives the indication primitive, or issues a response primitive for a particular RTSE service.

3.5.7 Reliable Transfer Service Element: The application-service-element defined in this Recommendation.

3.5.8 Reliable Transfer: An application-independent mechanism to provide for the transfer of application-protocol-data-units between open systems, and to recover from communication and end-system failure minimizing the amount of retransmission.

3.5.9 RTSE-user: The user of the Reliable Transfer Service Element. The user may be the user element, or another application service element, of the application entity.

3.5.10 RTSE-provider: The provider of the Reliable Transfer Service Element.

3.5.11 ACSE-provider: The provider of the Association Control Service Element.

3.5.12 monologue interaction: A mode of interaction where only one application-entity may be the sender.

3.5.13 syntax-matching services: Local services provided by the presentation-service provider enabling the transformation from the local representation of an application-protocol-data-unit value into a representation specified by a negotiated transfer syntax and vice versa.

3.5.14 X.410-1984 mode: A restricted mode of operation of the Reliable Transfer Service Element to allow interworking with application-entities based on CCITT Recommendation X.410-1984.

3.5.15 normal mode: A mode of operation of the Reliable Transfer Service Element providing full services.

4 Abbreviations

For the purpose of this Recommendation the following abbreviations are used:

AE	application entity
ACSE	Association Control Service Element
APDU	application-protocol-data-unit
ASE	application-service-element