INTERNATIONAL STANDARD

ISO/IEC 9805-1

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Information technology — Open Systems Interconnection — Protocol for the Commitment, Concurrency and Recovery service element: Protocol specification

Technologies de l'information — Interconnexion de systèmes ouverts (OSI) — Protocole pour l'élément de service d'engagement, de concomitance et de rétablissement: Spécification du protocole

Reference number
ISO/IEC 9805-1:1998(E)

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 9805-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 33, *Distributed application services*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.852.

This third edition cancels and replaces the second edition (ISO/IEC 9805-1:1994), which has been technically revised.

ISO/IEC 9805 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — Protocol for the Commitment, Concurrency and Recovery service element*:

— Part 1: Protocol specification

— Part 2: Protocol Implementation Conformance Statement (PICS) proforma

Annexes A and B form an integral part of this part of ISO/IEC 9805.

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Introduction

This Recommendation | International Standard is one of a set of Recommendations | International Standards produced to facilitate the interconnection of information processing systems. It is related to other Recommendation | International Standards in the set as defined by the Reference Model for Open Systems Interconnection (see ITU-T Rec. X.200 | ISO/IEC 7498-1). The Reference Model subdivides the area of standardization for interconnection into a series of layers of specification, each of manageable size.

The goal of Open Systems Interconnection is to allow, with a minimum of technical agreement outside the interconnection standards, the interconnection of information processing systems:

- from different manufacturers;
- under different managements;
- of different levels of complexity; and
- of different technologies.

This Recommendation | International Standard specifies the protocol for the application-service-element for Commitment, Concurrency, and Recovery (CCR). These services are intended to be applicable to a wide range of application-process communication requirements.

This Recommendation | International Standard specifies CCR Protocol Version 2. The 1990 edition of ISO/IEC 9805 specified CCR protocol Version 1. The 1993/1994 editions of this Recommendation | International Standard specified both CCR protocol Version 1 and CCR protocol Version 2, for the static commitment functional unit only.

The CCR protocol specification consists of the following main components:

a) the specification of the CCR APDUs using Abstract Syntax One (ASN.1, ITU-T Rec. X.680 | ISO/IEC 8824-1);

b) the elements of procedure for issuing CCR service indication and confirm primitives to the CCR service-user when CCR APDUs are received and for the sending of CCR APDUs when CCR service request and indication primitives are received from the CCR service-user;

c) the CCR protocol machine specified in terms of a state table; and

d) the presentation services (see ITU-T Rec. X.216 | ISO/IEC 8822) used for sending and receiving CCR APDUs.

The CCR protocol shares the presentation-service with other application-service-elements.

The requirement to provide support for CCR together with other application-service-elements is satisfied by reference to this Recommendation | International Standard.

Annex A contains the definitions of the structure of the CCR APDUs.

Annex B describes how the CCR can be used in combination with other ASEs that use the presentation service in a way that is not compatible with the use of the presentation service by CCR as specified in the body of this Recommendation | International Standard.

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INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – PROTOCOL FOR THE COMMITMENT, CONCURRENCY AND RECOVERY SERVICE ELEMENT: PROTOCOL SPECIFICATION

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1 Scope

This Recommendation | International Standard is to be applied by reference from other specifications. This is done within such specifications by reference to the CCR services defined in ITU-T Rec. X.851 | ISO/IEC 9804. A reference to a CCR service invokes the procedures of this Recommendation | International Standard to cause external effects.

This Recommendation | International Standard specifies, in clause 9, a use of the ACSE, Presentation and Session services to carry the CCR semantics. This "reference" mapping can be used whenever the use of these services does not conflict with the user made by other ASEs or ASOs that are using the same association. Annex B defines how a different use of supporting services may be specified, for use where the reference mapping is inappropriate.

This Recommendation | International Standard specifies the static and dynamic conformance requirements for systems implementing these procedures. It does not contain tests which can be used to demonstrate conformance.

This edition of this Recommendation | International Standard specifies CCR protocol Version 2, which makes use of the Session Data Separation functional unit to protect data not belonging to the CCR atomic action. The 1990 edition of ISO/IEC 9805 specified CCR protocol Version 1. The 1993/1994 edition of this Recommendation | International Standard specified both CCR protocol Version 1 and CCR protocol Version 2, for the static commitment functional unit only.

This International Standard specifies the protocol elements that support the following functional units:

a) static commitment;

b) dynamic commitment;

c) read only;

d) one-phase commitment;

e) cancel; and

f) overlapped recovery.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

– ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model.*

– ITU-T Recommendation X.207 (1993) | ISO/IEC 9545:1994, *Information technology – Open Systems Interconnection – Application layer structure.*

– ITU-T Recommendation X.210 (1993) | ISO/IEC 10731:1994, *Information technology – Open Systems Interconnection – Basic Reference Model : Conventions for the definition of OSI services.*

- ITU-T Recommendation X.215 (1995) | ISO/IEC 8326:1996, *Information technology – Open Systems Interconnection – Session service definition.*
- ITU-T Recommendation X.216 (1994) | ISO/IEC 8822:1994, *Information technology – Open Systems Interconnection – Presentation service definition.*
- ITU-T Recommendation X.217 (1995) | ISO/IEC 8649:1996, *Information technology – Open Systems Interconnection – Service definition for the association control service element.*
- ITU-T Recommendation X.227 (1995) | ISO/IEC 8650-1:1996, *Information technology – Open Systems Interconnection – Connection-oriented protocol for the association control service element: Protocol specification.*
- ITU-T Recommendation X.650 (1996) | ISO/IEC 7498-3:1997, *Information technology – Open Systems Interconnection – Basic Reference Model: Naming and addressing.*
- ITU-T Recommendation X.680 (1994) | ISO/IEC 8824-1:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation.*
- ITU-T Recommendation X.680 (1994)/Amd. 1 (1995) | ISO/IEC 8824-1:1995/Amd. 1:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation – Amendment 1: Rules of extensibility.*
- Technical Corrigendum (1997) to ITU-T Recommendation X.680 (1994)/Amd. 1 (1995) | ISO/IEC 8824-1:1995/Amd. 1:1995, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation – Amendment 1: Rules of extensibility.*
- ITU-T Recommendation X.690 (1994) | ISO/IEC 8825-1:1995, *Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER).*
- ITU-T Recommendation X.851 (1997) | ISO/IEC 9804:1998, *Information technology – Open Systems Interconnection – Service definition for the commitment, concurrency and recovery service element.*

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3 Definitions

3.1 Reference model definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.200 | ISO/IEC 7498-1:

a) Application Layer;

b) application association; association;

c) application-process;

d) application-entity;

e) presentation-service;

f) presentation-connection;

g) session-service; and

h) session-connection.

3.2 Naming and addressing definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.650 | ISO/IEC 7498-3:

a) application-process title;

b) application-entity qualifier;

c) application-entity title.