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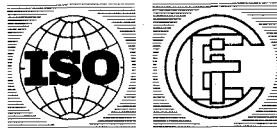
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**Information technology – Open Systems  
Interconnection – Protocol specification for the  
Commitment, Concurrency and Recovery  
service element**

**AMENDMENT 2: Session mapping changes**

*Technologies de l'information – Interconnexion de systèmes ouverts –  
Spécification du protocole pour l'élément de service d'engagement, de  
concurrence et de reprise*

*AMENDEMENT 2: Modification de la mise en correspondance avec la  
session*



Reference number  
ISO/IEC 9805:1990/Amd. 2:1992 (E)

## Foreword

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Amendment 2 to International Standard ISO/IEC 9805:1990 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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

## Amendment 2: Session mapping changes

### Introduction

{NO CHANGE}

### 1 Scope

{ADD THE FOLLOWING PARAGRAPH TO THE END OF THE CLAUSE}

This International Standard specifies the following protocol versions:

- a) Protocol Version 1 which does not make use of the Session Data Separation functional unit.
- b) Protocol Version 2 which makes use of the Session Data Separation functional unit to protect data not belonging to the CCR atomic action.

### 2 Normative references

{ADD THE FOLLOWING REFERENCES TO THIS CLAUSE}

ISO 8822:1988/Amd.5:-<sup>1)</sup>, *Information processing systems - Open Systems Interconnection - Basic connection oriented presentation service definition, Amendment 5: Additional Session Synchronization Functionality to the Presentation Service User.*

ISO 8326:1987/Amd.4:-<sup>1)</sup>, *Information processing systems - Open Systems Interconnection - Basic connection oriented session services definition, Amendment 4: Additional Resynchronization Functionality.*

ISO/IEC 9804:1990/Amd.2:-<sup>1)</sup>, *Information technology - Open Systems Interconnection - Service specification for the Commitment, Concurrency and Recovery service element, Amendment 2: Session Mapping Changes.*

### 3 Definitions

{NO CHANGE}

### 4 Symbols and abbreviations

#### 4.1 Data units

{NO CHANGE}

#### 4.2 Types of application-protocol-data-units

{ADD THE FOLLOWING TO THE LIST}

C-INITIALIZE-RI (when using CCR Protocol Version 2)  
C-INITIALIZE-RC (when using CCR Protocol Version 2)

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<sup>1)</sup> To be published.

#### **4.3 Other abbreviations**

*{NO CHANGE}*

#### **5 Conventions**

*{NO CHANGE}*

### **6 Overview of the CCR protocol**

#### **6.1 Service Support**

*{NO CHANGE}*

#### **6.2 Constraints on ACSE services**

*{CHANGE PARAGRAPH 6.2.2 TO READ AS FOLLOWS.}*

**6.2.2** When establishing the association, the following Presentation and Session Requirements must be specified on the A-ASSOCIATE service:

presentation kernel functional unit

session kernel functional unit

session typed data functional unit

session major synchronize functional unit (when using CCR Protocol Version 1)

session minor synchronize functional unit

session resynchronize functional unit

session data separation functional unit

*{ADD A NEW CLAUSE 6.2.4, AS FOLLOWS}*

**6.2.4** If CCR Protocol Version 2 is being used, the ACSE User information on an A-ASSOCIATE request shall contain the C-INITIALIZE-RI APDU. In addition, the ACSE User information on an A-ASSOCIATE response must contain the C-INITIALIZE-RC APDU.

#### **6.3 Use of the presentation service**

*{CHANGE PARAGRAPH 6.3.1 TO READ AS FOLLOWS.}*

**6.3.1** CCR uses the following presentation (ISO 8822) services:

P-DATA

P-TYPED-DATA

P-SYNC-MAJOR (when using CCR Protocol Version 1)

P-SYNC-MINOR

P-RESYNCHRONIZE(restart) (when using CCR Protocol Version 1)

P-RESYNCHRONIZE(abandon) (when using CCR Protocol Version 2)

**6.4 Relationship to the session-service and the transport-service**  
{CHANGE THE FIRST SENTENCE OF CLAUSE 6.4.3 TO READ.}

"If CCR Protocol Version 1 is being used and the Transport-expedited service is used by the session layer, the CCR service-user:"

{CHANGE THE NOTE UNDER CLAUSE 6.4.3 TO READ AS FOLLOWS}

NOTE - With CCR Protocol Version 1, the use of the session resynchronization service for C-ROLLBACK is liable to cause purging of user data outside the atomic action. If the Transport-expedited service is used by session and the above restrictions are not followed, the C-BEGIN can be purged and user-data preceding it. This will not occur if CCR Protocol Version 2 is used.

**6.5 Operation of the CCRPM**  
{NO CHANGE}

{ADD A NEW CLAUSE 6.6, AS FOLLOWS}

**6.6 Rules of Extensibility for CCR Protocol Version 2**

For the C-INITIALIZE-RI APDU, a receiving CCRPM shall

- a) ignore any undefined element;
- b) where named bits are used, treat any bit as insignificant when no name is assigned to it.

**7 Elements of procedures**  
{ADD "i" TO THE PROCEDURE LIST AS FOLLOWS}

- i) initialization, if CCR Protocol Version 2 is being used

**7.1 Begin branch procedure**

**7.1.1 Purpose**  
{NO CHANGE}

**7.1.2 APDUs used**  
{NO CHANGE}

**7.1.3 Prerequisite requirements**  
{NO CHANGE}

**7.1.4 Procedure operation**  
{NO CHANGE}

**7.1.5 Use of the C-BEGIN-RI APDU fields**  
{ADD THE FOLLOWING TEXT BETWEEN THE FIRST AND SECOND PARAGRAPH}

If CCR Protocol Version 2 is being used, then the CCRPM shall represent the "Atomic Action Identifier - Master's Name" parameter of the C-BEGIN request in the abstract syntax by using either the "name" form or the "sender" value of the "side" form of the

"masters-name" field. The latter form may only be used if the Master's Name is the AE-title of the requestor, as passed on the A-ASSOCIATE service used to establish the supporting association.

*{ADD THE FOLLOWING TEXT BETWEEN THE THIRD AND FOURTH PARAGRAPHS}*

If CCR Protocol Version 2 is being used and if the "masters-name" field in the "atomic-action-identifier" field is the "sender" value of the "side" form, the "Atomic Action Identifier - Master's Name" parameter of the C-BEGIN indication shall be the requestor's AE-title that was passed in the A-ASSOCIATE service used to establish the supporting association.

**7.1.6 Use of the C-BEGIN-RC APDU field**  
*{NO CHANGE}*

**7.1.7 Collisions**  
*{CHANGE THE PARENTHETICAL PHRASE IN THE NOTE TO READ AS FOLLOWS.}*

(except when issued with C-ROLLBACK or, when using CCR Protocol Version 1, when issued with C-COMMIT)

**7.2 Prepare subordinate procedure**  
*{NO CHANGE}*

**7.3 Offer commitment procedure**  
*{NO CHANGE}*

**7.4 Order commitment**

**7.4.1 Purpose**  
*{NO CHANGE}*

**7.4.2 APDUs used**  
*{NO CHANGE}*

**7.4.3 Prerequisite requirements**  
*{CHANGE THE SECOND SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}*

The requestor shall also either be the owner of the session major/activity token, if using CCR Protocol Version 1, or the synchronize-minor token, if using CCR Protocol Version 2.

**7.4.4 Order commitment procedure**  
*{NO CHANGE}*

**7.4.4.1 C-COMMIT request primitive**  
*{REPLACE THE SECOND SENTENCE BY THE FOLLOWING TEXT}*

If CCR Protocol Version 1 is being used, it issues a P-SYNC-MAJOR request primitive with the APDU as a data value of the primitive's User Data parameter. If CCR Protocol Version 2 is being used, it issues a P-SYNC-MINOR request primitive with the APDU as a data value of the primitive's User Data parameter.

**7.4.4.2 C-COMMIT-RI APDU***{REPLACE THE FIRST SENTENCE BY THE FOLLOWING TEXT}*

If CCR Protocol Version 1 is being used, the accepting CCRPM receives a C-COMMIT-RI APDU from its peer as user data on a P-SYNC-MAJOR indication primitive. If CCR Protocol Version 2 is being used, the accepting CCRPM receives a C-COMMIT-RI APDU from its peer as user data on a P-SYNC-MINOR indication primitive.

**7.4.4.3 C-COMMIT response primitive***{REPLACE THE SECOND SENTENCE BY THE FOLLOWING TEXT}*

If CCR Protocol Version 1 is being used, it issues a P-SYNC-MAJOR response primitive with the APDU as a data value of the primitive's User Data parameter. If CCR Protocol Version 2 is being used, it issues a P-SYNC-MINOR response primitive with the APDU as a data value of the primitive's User Data parameter.

**7.4.4.4 C-COMMIT-RC APDU***{REPLACE THE FIRST SENTENCE BY THE FOLLOWING TEXT}*

If CCR Protocol Version 1 is being used, the requesting CCRPM forms a C-COMMIT-RC APDU from its peer as user data on a P-SYNC-MAJOR indication primitive. If CCR Protocol Version 2 is being used, the requesting CCRPM receives a C-COMMIT-RC APDU from its peer as user data on a P-SYNC-MINOR indication primitive.

**7.4.5 Use of the C-COMMIT-RI APDU fields***{NO CHANGE}***7.4.6 Use of the C-COMMIT-RC APDU field***{NO CHANGE}***7.4.7 Collision***{NO CHANGE}***7.5 Rollback****7.5.1 Purpose***{NO CHANGE}***7.5.2 APDUs used***{NO CHANGE}***7.5.3 Prerequisite requirements***{NO CHANGE}***7.5.4 Rollback procedure***{NO CHANGE TO THE INTRODUCTORY TEXT UNDER 7.5.4}}***7.5.4.1 C-ROLLBACK request primitive***{CHANGE SECOND SENTENCE OF FIRST PARAGRAPH TO READ AS FOLLOWS.}*

If CCR Protocol Version 1 is being used, it issues a P-RESYNCHRONIZE(restart) request primitive with the APDU as a data value of the primitive's User Data parameter. If CCR Protocol Version 2 is being used, it issues a P-RESYNCHRONIZE(abandon)

request primitive with the APDU as a data value of the primitive's User Data parameter.

#### **7.5.4.2 C-ROLLBACK-RI APDU**

*{CHANGE FIRST SENTENCE OF FIRST PARAGRAPH TO READ AS FOLLOWS.}*

If CCR Protocol Version 1 is being used, the accepting CCRPM receives a C-ROLLBACK-RI APDU from its peer as user data on a P-RESYNCHRONIZE(restart) indication primitive. If CCR Protocol Version 2 is being used, the accepting CCRPM receives a C-ROLLBACK-RI APDU from its peer as user data on a P-RESYNCHRONIZE(abandon) indication primitive.

#### **7.5.4.3 C-ROLLBACK response primitive**

*{CHANGE SECOND SENTENCE OF FIRST PARAGRAPH TO READ AS FOLLOWS.}*

If CCR Protocol Version 1 is being used, it issues a P-RESYNCHRONIZE(restart) response primitive with the APDU as a data value of the primitive's User Data parameter. If CCR Protocol Version 2 is being used, it issues a P-RESYNCHRONIZE(abandon) response primitive with the APDU as a data value of the primitive's User Data parameter.

#### **7.5.4.4 C-ROLLBACK-RC APDU**

*{CHANGE FIRST SENTENCE OF FIRST PARAGRAPH TO READ AS FOLLOWS.}*

If CCR Protocol Version 1 is being used, the requesting CCRPM receives a C-ROLLBACK-RC APDU from its peer as user data on a P-RESYNCHRONIZE(restart) confirm primitive. If CCR Protocol Version 2 is being used, the requesting CCRPM receives a C-ROLLBACK-RC APDU from its peer as user data on a P-RESYNCHRONIZE(abandon) confirm primitive.

#### **7.5.5 Use of the C-ROLLBACK-RI APDU fields**

*{NO CHANGE}*

#### **7.5.6 Use of the C-ROLLBACK-RC APDU fields**

*{NO CHANGE}*

#### **7.5.7 Disruptive effect**

*{CHANGE THE FIRST SENTENCE TO READ AS FOLLOWS.}*

Because the C-ROLLBACK service is mapped on the P-RESYNCHRONIZE service, CCR APDUs other than a C-ROLLBACK-RI from the association-initiator are discarded (by the underlying session service-provider).

#### **7.5.8 Collision with a C-ROLLBACK-RI APDU**

*{NO CHANGE}*

### **7.6 Branch recovery procedure**

#### **7.6.1 Purpose**

*{NO CHANGE}*

#### **7.6.2 APDUs used**

*{NO CHANGE}*

#### **7.6.3 Prerequisite requirements**

*{NO CHANGE}*



#### **7.6.4 Branch recovery procedure** {NO CHANGE}

#### **7.6.5 Use of the C-RECOVER-RI APDU fields** {ADD THE FOLLOWING TWO PARAGRAPHS AT THE END OF THE CLAUSE}

**For the requesting CCRPM (Version 2 only):** If the Atomic Action Identifier or Branch Identifier parameters of the C-RECOVER request contain the AE-title of the requestor, as passed on the A-ASSOCIATE service used to establish the supporting association, the CCRPM shall represent this in the abstract syntax by using either the "name" form or the "sender" value of the "side" form of the corresponding APDU field. Similarly, if the parameters contain the AE-title of the acceptor passed on the A-ASSOCIATE service used to establish the supporting association, the CCRPM shall represent this in the abstract syntax by using either the "name" form or the "receiver" value of the "side" form of the corresponding APDU field.

**For the accepting CCRPM (Version 2 only):** If the "masters-name" field in the "atomic-action-identifier" or the "superiors-name" field in the "branch-identifier" is the "sender" value of the "side" form, the corresponding parameter value shall be the C-RECOVER requestor's AE-title passed on the A-ASSOCIATE service used to establish the supporting association. Similarly, if the "receiver" value of the "side" form is used, the corresponding parameter shall be the C-RECOVER acceptor's AE-title passed in the A-ASSOCIATE service used to establish the supporting association.

#### **7.6.6 Use of the C-RECOVER-RC APDU fields** {ADD THE FOLLOWING TWO PARAGRAPHS AND NOTE AT THE END OF THE CLAUSE}

**For the accepting CCRPM (Version 2 only):** If the Atomic Action Identifier or Branch Identifier parameters of the C-RECOVER response contain the AE-title of the acceptor, as passed on the A-ASSOCIATE service used to establish the supporting association, the CCRPM shall represent this in the abstract syntax by using either the "name" form or the "sender" value of the "side" form of the corresponding APDU field. Similarly, if the parameters contain the AE-title of the requestor, as passed on the A-ASSOCIATE service used to establish the supporting association, the CCRPM shall represent this in the abstract syntax by using either the "name" form or the "receiver" value of the "side" form of the corresponding APDU field.

**For the requesting CCRPM (Version 2 only):** If the "masters-name" field in the "atomic-action-identifier" or the "superiors-name" field in the "branch-identifier" is the "sender" value of the "side" form, the corresponding parameter value shall be the C-RECOVER acceptor's AE-title passed on the A-ASSOCIATE service used to establish the supporting association. Similarly, if the "receiver" value of the "side" form is used, the corresponding parameter shall be the C-RECOVER requestor's AE-title passed in the A-ASSOCIATE service used to establish the supporting association.

Note -- The "sender" and "receiver" values identify the peer's by their roles in the transmission of a particular APDU, not the procedure. Thus, a value of "sender" on a C-RECOVER-RI corresponds to a value of "receiver" on the replying C-RECOVER-RC.

## **7.7 Order commitment and begin branch procedure**

### **7.7.1 Purpose** {NO CHANGE}

### **7.7.2 APDUs used** {NO CHANGE}

### **7.7.3 Prerequisite requirements** {NO CHANGE}

### **7.7.4 Procedure operation** {NO CHANGE TO THE INTRODUCTORY TEXT UNDER 7.7.4}

#### **7.7.4.1 C-COMMIT request primitive + C-BEGIN request primitive** {CHANGE THE SECOND SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}

If CCR Protocol Version 1 is being used, it issues a P-SYNC-MAJOR request primitive with the APDUs as data values of the primitive's User Data parameter. If CCR Protocol Version 2 is being used, it issues a P-SYNC-MINOR request primitive with the APDUs as data values of the primitive's User Data parameter.

#### **7.7.4.2 C-COMMIT-RI APDU + C-BEGIN-RI APDU** {CHANGE THE FIRST SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}

If CCR Protocol Version 1 is being used, the accepting CCRPM receives a C-COMMIT-RI and a C-BEGIN-RI APDU from its peer as user data on a P-SYNC-MAJOR indication primitive. If CCR Protocol Version 2 is being used, the accepting CCRPM receives a C-COMMIT-RI and a C-BEGIN-RI APDU from its peer as user data on a P-SYNC-MINOR indication primitive.

#### **7.7.4.3 C-COMMIT response primitive** {CHANGE THE SECOND SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}

If CCR Protocol Version 1 is being used, it issues a P-SYNC-MAJOR response primitive with the APDU as a data value of the primitive's User Data parameter. If CCR Protocol Version 2 is being used, it issues a P-SYNC-MINOR response primitive with the APDU as a data value of the primitive's User Data parameter.

#### **7.7.4.4 C-COMMIT-RC APDU** {CHANGE THE FIRST SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}

If CCR Protocol Version 1 is being used, the accepting CCRPM receives a C-COMMIT-RC APDU from its peer as user data on a P-SYNC-MAJOR confirm primitive. If CCR Protocol Version 2 is being used, the accepting CCRPM receives a C-COMMIT-RC APDU from its peer as user data on a P-SYNC-MINOR confirm primitive.

### **7.7.5 Use of the C-COMMIT-RI APDU and C-BEGIN-RI APDU fields** {NO CHANGE}

**7.7.6 Use of the C-COMMIT-RC APDU field**  
*{NO CHANGE}*

**7.7.7 Collisions**  
*{NO CHANGE}*

**7.8 Rollback and begin branch procedure**

**7.8.1 Purpose**  
*{NO CHANGE}*

**7.8.2 APDUs used**  
*{NO CHANGE}*

**7.8.3 Prerequisite requirements**  
*{NO CHANGE}*

**7.8.4 Procedure operation**  
*{NO CHANGE TO THE INTRODUCTORY TEXT UNDER 7.8.4}*

**7.8.4.1 C-ROLLBACK request primitive + C-BEGIN request primitive**  
*{CHANGE THE SECOND SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}*

If CCR Protocol Version 1 is being used, it issues a P-RESYNCHRONIZE (restart) request primitive with the APDUs as data values of the primitive's User Data parameter. If CCR Protocol Version 2 is being used, it issues a P-RESYNCHRONIZE (abandon) request primitive with the APDUs as data values of the primitive's User Data parameter.

**7.8.4.2 C-ROLLBACK-RI APDU + C-BEGIN-RI APDU**  
*{CHANGE THE FIRST SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}*

If CCR Protocol Version 1 is being used, the accepting CCRPM receives a C-ROLLBACK-RI and a C-BEGIN-RI APDU from its peer as user data on a P-RESYNCHRONIZE(restart) indication primitive. If CCR Protocol Version 2 is being used, the accepting CCRPM receives a C-ROLLBACK-RI and a C-BEGIN-RI APDU from its peer as user data on a P-RESYNCHRONIZE(abandon) indication primitive.

**7.8.4.3 C-ROLLBACK response primitive**  
*{CHANGE THE SECOND SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}*

If CCR Protocol Version 1 is being used, it issues a P-RESYNCHRONIZE (restart) response primitive with the APDU as a data value of the primitive's User Data parameter. If CCR Protocol Version 2 is being used, it issues a P-RESYNCHRONIZE (abandon) response primitive with the APDU as a data value of the primitive's User Data parameter.

**7.8.4.4 C-ROLLBACK-RC APDU**  
*{CHANGE THE FIRST SENTENCE OF THE FIRST PARAGRAPH TO READ AS FOLLOWS.}*

If CCR Protocol Version 1 is being used, the accepting CCRPM receives a C-ROLLBACK-RC APDU from its peer as user data on a P-RESYNCHRONIZE(restart)