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**Integrated Services Digital Network (ISDN);  
Synchronization and Co-ordination Function (SCF) for the  
provision of the OSI Connection-mode Network Service  
(OSI CONS) in an ISDN environment;  
Specification of SCF**

**[ITU-T Recommendation Q.923 (1995), modified]**

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS covers the Synchronization and Co-ordination Function which provides for the OSI Connection-mode Network Service (OSI CONS) according to CCITT Recommendation X.213 [2] in a Control- and User-plane, or Management- and User-plane, as appropriate, ISDN environment. The SCF specified in this ETS is to be implemented in end systems conforming to OSI principles for connection to the pan-European Narrowband or Broadband Integrated Services Digital Network (N-ISDN/B-ISDN) as provided by European Public Telecommunications Operators.

Since the function specified in this ETS only co-ordinates other protocol entities in an ISDN User- and Control-plane ISDN arrangement, or User- and Management-plane ISDN arrangement, as appropriate, it is not a self-contained protocol machine which implements Protocol Data Units (PDUs) and is accessible from outside of a system. Therefore, standardization of:

- Protocol Implementation Conformance Statement (PICS) proforma;
- Test Suite Structure (TSS) and Test Purposes (TP);
- Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma,

is not appropriate.

<b>Transposition dates</b>	
Date of adoption of this ETS:	16 August 1996
Date of latest announcement of this ETS (doa):	30 November 1996
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 May 1997
Date of withdrawal of any conflicting National Standard (dow):	31 May 1997

## Endorsement notice

The text of ITU-T Recommendation Q.923 (1995) was approved by ETSI as an ETS with agreed modifications as given below.

NOTE: New or modified text is indicated using sidebars. In addition, underlining and/or strike-out are used to highlight detailed modifications where necessary.

Add the following three clauses (Scope, Normative references, Definitions) at the start of the text:

## Scope

This European Telecommunication Standard (ETS) specifies the Synchronization and Co-ordination Function (SCF) which provides for the OSI Connection-mode Network Service according to CCITT Recommendation X.213 [2] in a Control- and User-plane, or Management- and User-plane, as appropriate, ISDN environment. The SCF specified in this ETS is to be implemented in endsystems conforming to OSI principles for connection to the pan-European Narrowband or Broadband Integrated Services Digital Network (N-ISDN/B-ISDN) as provided by European Public Telecommunications Operators.

The SCF is identified in the protocol reference model according to CCITT Recommendation I.320 [1].

The SCF for the provision of the OSI Connection-mode Network Service is specified in terms of the interrelationship between Network primitives at its upper and lower boundaries. The SCF performs the synchronization between C-plane, or M-plane if appropriate, and U-plane on a per network connection basis and is not concerned with any functionality which is required, if multiplexing within U-plane underlying layers is used.

This ETS is applicable to an ISDN customer access using an ISDN access signalling system such as the Digital Subscriber Signalling System No. one (DSS1) protocol within the C-plane for the provision of a Switched Virtual Circuit (SVC), and Permanent Virtual Circuit (PVC) arrangements. It does not require a particular protocol within the U-plane, but rather relies on Service Data Units (SDUs) to be exchanged between the SCF as service user and the U-plane as service provider.

This ETS is applicable to equipment conforming to OSI principles to be attached at the user side of N-ISDN, or B-ISDN, as appropriate, User-Network Interface (UNI).

## Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation I.320 (1988): "ISDN protocol reference model".
- [2] CCITT Recommendation X.213 (1992): "Network service definition for Open Systems Interconnection".

## Definitions

For the purposes of this ETS, the following definitions apply:

**Confirm (PRIMITIVE):** [X.210 § 3.2.7] A primitive issued by a service-provider to complete, at a particular service-access-point, some procedure previously invoked by a request at that service-access-point.

**confirmed service:** [X.210 § 3.2.12] A service which results in an explicit confirmation from the service-provider. There is not necessarily any relationship to a response from the peer service user.

**connection:** [X.200 § 5.3.1.2] An association established by the "service provider" layer between two or more "service user" entities for the transfer of data.

**connection-endpoint:** [X.200 § 5.3.1.3] A terminator at one end of a connection within a service-access-point.

**Connection Endpoint Identifier (CEI):** [X.200 § 5.4.1.5] An identifier of a connection-endpoint which can be used to identify the corresponding connection at a service-access-point.

**Connection Endpoint Suffix (CES):** [X.200 § 5.4.1.6] A part of a connection-endpoint-identifier which is unique within the scope of a service-access-point.

**function:** [X.200 § 5.2.1.7] A part of the activity of entities.

**indication (primitive):** [X.210 § 3.2.5] A primitive issued by a service-provider either:

- to invoke some procedure; or
- to indicate that a procedure has been invoked by the service-user at the peer service-access-point.

**interface-control-information:** [X.200] Information transferred between a "service user" entity and a "service provider" entity to co-ordinate their joint operation.

**interface-data:** [X.200] Information transferred from a "service user" entity to a "service provider" entity for transmission to a correspondent "service user" entity over a connection, or conversely, information transferred from a "service provider" entity to a "service user" entity after being received over a connection from a correspondent "service user" entity.

**Interface Data Unit (IDU):** [X.200] The unit of information transferred across a service-access-point between a "service user" entity and a "service provider" entity in a single interaction. Each interface-data-unit contains interface-control-information and may also contain the whole or part of a service-data-unit.

**Integrated Services Digital Network (ISDN):** [I.112 Nos. 307, 308] A network that provides or supports a range of different telecommunication services and provides digital connections between user-network interfaces.

**layer:** [X.200 § 5.2.1.2] A subdivision of the system architecture, constituted by subsystems of the same rank.

**(N)-entity:** [X.200 § 5.2.1.11] An active element within a (N)-subsystem.

**(N)-subsystem:** [X.200 § 5.2.1.1] An element in a hierarchical division of an open system which interacts directly only with elements in the next higher division or the next lower division of that open system.

**network side:** Location in relation to the user-network interface indicating that the context to which this term refers is at the network side of the user-network interface.

**point-to-point connection:** A connection with two connection-endpoints.

**protocol:** [X.200 § 5.2.1.9] A set of rules and formats (semantic and syntactic) which determines the communication behaviour of entities in the performance of functions.

**Protocol Data Unit (PDU):** [X.200 § 5.6.1.3] A unit of data specified in a protocol and consisting of protocol-control-information and possibly user-data.

**Protocol Control Information (PCI):** [X.200 § 5.6.1.1] Information exchanged between entities using a connection (provided by the next lower layer), to co-ordinate their joint operation.

**reference point:** [I.411 § 2.3] Conceptual point dividing set of functions which form functional groups. In a specific access arrangement, a reference point may correspond to a physical interface between pieces of equipment, or there may not be any physical interface corresponding to the reference point. Physical interfaces that do not correspond to a reference point (e.g. transmission link interfaces) will not be the subject of ISDN user-network interface Recommendations.

**request (primitive):** [X.210 § 3.2.4] A primitive issued by a service-user to invoke some procedure.

**response (primitive):** [X.210 § 3.2.6] A primitive issued by a service-user to complete, at a particular service-access-point, some procedure previously invoked by an indication at that service-access-point.

**service ("layer" service):** [X.200 § 5.2.1.5] A capability of the providing layer and the layers beneath it, which is provided to "service user" entities at the boundary between the "service provider" layer and the "service user" layer.

**Service Access Point (SAP):** [X.200 § 5.2.1.8] The point at which services are provided by a "service provider" entity to a "service user" entity.

**Service Data Unit (SDU):** [X.200 § 5.6.1.4] An amount of interface-data whose identity is preserved from one end of a connection to the other.

**service-primitive; primitive:** [X.210 § 3.2.3] An abstract, implementation independent interaction between a service-user and the service-provider.

**service-provider:** [X.210 § 3.2.2] An abstract machine which models the behaviour of the totality of the entities providing the service, as viewed by the user.

**service-user:** [X.210 § 3.2.1] An abstract representation of the totality of those entities in a single system that make use of a service through a single access point.

**Synchronization and Co-ordination Function (SCF):** The SCF performs a synchronization and co-ordination function between Control- and User-plane, or Management- and User-plane, as appropriate, in an ISDN environment, in order to provide the OSI Connection-mode Network Service according to CCITT Recommendation X.213 [2].

**unconfirmed service:** [X.210 § 3.2.11] A service which does not result in an explicit confirmation from the service-provider.

**user-data:** [X.200 § 5.6.1.2] The data transferred between "service provider" entities on behalf of the "service user" entities for whom "service provider" entities are providing services.

**user side:** Location in relation to the user-network interface indicating that the context to which this term refers is at the user side of the user-network interface.

## Appendix I

Appendix I has the status of an informative annex.

## History

Document history			
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May 1996	Vote	V 102:	1996-05-06 to 1996-08-09
August 1996	First Edition		