

GLOSSARY OF TERMS SPECIFIC TO SIGNALLING SYSTEM No. 7

Active Signalling Link

A signalling link which has successfully completed the initial alignment procedures and carries (or is ready to carry) signalling traffic.

Address

A name which indicates the source or destination of an intended instance of communication.

Adjacent Signalling Points

Two signalling points that are directly interconnected by (a) signalling link(s).

Alignment Error Rate Monitoring

A procedure by which the error rate of a signalling link is measured during the initial alignment.

Alternative Routing (of Signalling)

The routing of a given signalling traffic flow in case of failures affecting the signalling link(s), or routes, involved in the normal routing of that signalling traffic flow.

Analogue Signalling Data Link

The link that provides an interface to signalling terminals and is made up of voice-frequency analogue transmission channels and modems.

Application

The set of a user's requirements.

Application Layer

This layer is the highest layer (Layer 7) of the Open Systems Interconnection (OSI) protocol model and specifies the nature of the communication required to satisfy the user's needs.

Application Service Part

This part includes the presentation level, session level and transport level of the Signalling System No.7 protocol.

Associated Mode (of Signalling)

The mode where messages for a signalling relation involving two adjacent signalling points are conveyed over a directly interconnecting signalling link.

Backward Indicator Bit

A bit in a signal unit requesting, by its status change, retransmission at the remote end when a signal unit is received out of sequence.

Backward Sequence Number

A field in a signal unit sent which contains the forward sequence number of a correctly received signal unit being acknowledged.

A '**' indicates a change from the CCITT Red Book Vol. VI.

Basic (Error Correction) Method

A non-compelled, positive/negative acknowledgement, retransmission error control system, used on terrestrial links.

Changeback

The procedure of transferring signalling traffic from one or more alternative signalling links back to a signalling link which has become available. (See Changeover)

Changeback Code

A field in the signalling network management messages used in the changeback procedure; it is used to discriminate messages relating to different changeback procedures performed at the same time towards the same signalling link.

Changeover

The procedure of transferring signalling traffic from one signalling link to one or more different signalling links, when the link in use fails or is required to be cleared of traffic.

Check Bit

A bit associated with a character or block for the purpose of checking the absence of error within the character or block.

Check Loop

A device which is attached to interconnect the Go and Return paths of a circuit at the incoming end of a circuit to permit the outgoing end to make a continuity check on a loop basis.

Circuit Identification Code

Information identifying a circuit between a pair of exchanges, for which signalling is being performed. (14 bits in the ISDN User Part)

Class of Service

A set of services provided by the SCCP and offered to the user of the SCCP.

Cluster

A set of signalling points which are identifiable as a group within the signalling point code address space.

Combined (Signalling) Link Set

A collection of signalling link sets from a signalling point sharing a common routing priority towards a specific destination.

Common Channel Signalling

A signalling method in which a single channel conveys, by means of labeled messages, signalling information relating to a multiplicity of circuits or calls and other information, such as that used for network management.

Glossary

Component

The portion of the TCAP message that identifies the Component type, provides correlation between Components, specifies operations to be performed and contains the parameters relevant to that operation.

Connection Identity

A number which identifies unambiguously a certain connection at the interface between the SCCP and a user function.

Connection Section

A section of an SCCP connection between the endpoint and such type of intermediate point where a coupling has to be provided between two adjacent sections.

Connection-Oriented Network Service

A network that establishes logical connections between end users before transferring information.

Connectionless Network Service

A network that transfers information between end users without establishing a logical connection or virtual circuit.

Continuity Check

A check made to a circuit or circuits in a connection to verify that an acceptable path (for transmission of data, speech, etc.) exists.

Continuity Check Transponder

A device which is used to interconnect the Go and Return paths of a circuit at the incoming end which on detection of a check tone transmits another check tone to permit a continuity checking of a 2-wire circuit.

Controlled Rerouting

A procedure of transferring in a controlled way, signalling traffic from an alternative signalling route to the normal signalling route, when this has become available.

Cross-Office Check

A check made across the exchange to verify that an acceptable speech path exists.

Data Link Layer

The layer that allows errors in transmission on the signalling link to be detected and recovered.
(Layer 2)

Digital Signalling Data Link

The link that provides an interface to signalling terminals and is made up of digital transmission channels and digital switches or their terminating equipment.

Dual Seizure

The condition which occurs when in bothway operation two exchanges attempt to seize the same circuit at approximately the same time.

Glossary

Emergency Changeover

A modified changeover procedure to be used whenever the normal one cannot be accomplished, i.e. in case of some failures in the signalling terminal equipment or in case of inaccessibility between the two involved signalling points.

End-to-End Signalling

The capability to transfer signalling information directly between end points of a built-up circuit switched connection or between signalling points that are not interconnected by a circuit switched connection.

Error Burst

A group of bits in which two successive erroneous bits are always separated by less than a given number (x) of correct bits. The number of x should be specified when describing an error burst.

Note - The last erroneous bit in a burst and the first erroneous bit in the following burst are accordingly separated by x correct bits or more.

Fill-in Signal Unit

A signal unit containing only error control and delimitation information, which is transmitted when there are no message signal units or link status units to be transmitted.

Flag

The unique pattern (01111110) on the signalling data link used to delimit a signal unit.

Forced Rerouting

A procedure of transferring signalling traffic from one signalling route to another, when the signalling route in use fails or is required to be cleared of traffic.

Forward Indicator Bit

A bit in a signal unit which indicates the start of a retransmission cycle.

Forward Sequence Number

A field in a signal unit used to identify the transmitted message signal units.

Function

A logical object which accepts one or more inputs (arguments) and produces a single output (value) uniquely determined by the combination of the inputs and the formal specification of the function.

Global Title

An address such as customer dialed digits which does not explicitly contain information that would allow routing in the signalling network, i.e., the SCCP translation function is required.

Handover

The transfer (permanent or temporary) of a Component or series of Components to another application process.

Glossary

Inactive Signalling Link

A signalling link which has been deactivated and cannot therefore carry signalling traffic.

Initial Alignment

A procedure by which a signalling link becomes able to carry signalling traffic either for the first time or after a failure has occurred.

Initial Signal Unit Alignment

Signal unit alignment applicable to activation and to restoration of the link.

Integrated Digital Network

A network in which connections established by digital switching are used for the transmission of digital signals.

Integrated Services Digital Network

An integrated digital network in which the same digital switches and digital paths are used to establish connections for different services, for example, telephony, data.

Interruption Control

A system which monitors a pilot for interruptions on FDM systems and which transmits an indication to the switching equipment.

Invoke Component

A type of TCAP component that requests that an operation be performed at the receiving node.

Label

Information within a signalling message used to identify the particular circuit, call or management transaction to which the message is related.

Layer Service

A capability of the (N) layer and the layers beneath it, which is provided to (N+1) layer entities, at the boundary between the (N) layer and the (N+1) layer.

Layer Service Elements

An indivisible component of the layer service made visible to the service user via layer service primitives.

Layer Service Primitives

Layer service primitives are a means for specifying in detail the adjacent layer interactions.

Length Indicator

A six bit field which differentiates between message signal units, link status signal units and fill-in signal units and in the case that its binary value is less than 63 indicates the length of a signal unit.

Glossary

Link State Control *

Coordinates functions of the signalling link including signal unit delimitation, signal unit alignment, error detection, error correction, initial alignment, signalling link error monitoring and flow control. *

Link Status Signal Unit

A signal unit which contains status information about the signalling link in which it is transmitted.

Load Sharing (General)

A process by which signalling traffic is distributed over two or more signalling or message routes, in view of traffic equalization or security.

Local Reference *

A local number, unambiguously identifying an SCCP connection within one SCCP entity. *

Long-Term Bit Error Rate

Bit error rate measured over a sufficiently long period of time, e.g. one month.

Management Inhibit *

A procedure included in signalling traffic management used to keep a signalling link unavailable to User Part generated signalling traffic, except for test and maintenance traffic. *

Mandatory Fixed Part *

Part of a message that contains those parameters that are mandatory and of fixed length for a particular message type. *

Mandatory Variable Part *

Part of a message that contains mandatory parameters of variable length. *

Medium-Term Bit Error Rate

Bit error rate that can be encountered for relatively short time periods, e.g. some minutes, due to temporary malfunctions of, for example, transmission equipment.

Message Signal Unit

A signal unit containing a service information octet and a signalling information field.

Message Transfer Part

The functional part of a common channel signalling system which transfers signalling messages as required by all the users, and which performs the necessary subsidiary functions, for example error control and signalling security. (Levels 1, 2, and 3 of Signalling System No. 7) *

Message Type Code *

The mandatory one octet field that uniquely defines the function and format of each ISDN user part message. *

Network Address

The signalling point code, containing for U.S. national networks, the network identification, network cluster and network cluster member fields. (24 bits)

Network Cluster

The Field in the U. S. signalling point code structure that identifies groups of signalling points and individual STPs of a signalling network.

Network Cluster Member

The Field in the U. S. signalling point code structure that identifies individual signalling points within a cluster.

Network Identification

The field in the U. S. signalling point code structure that identifies signalling networks.

Network Indicator

The part of the subservice field within the service information octet that may be used to discriminate between national and international signalling messages.

Network Layer

The layer that transfers data transparently by performing routing and relaying of data between end users. (Layer 3)

Network Service Part

The combination of the Message Transfer Part and the Signalling Connection Control Part.

No. 7 Exchange

An exchange utilizing Signalling System No. 7.

Nonassociated Mode (of Signalling)

The mode where messages for a signalling relation involving two (nonadjacent) signalling points are conveyed, between those signalling points, over two or more signalling links in tandem passing through one or more signalling transfer points.

Normal Routing (of Signalling)

The routing of a given signalling traffic flow in normal conditions (i.e. in the absence of failures).

Optional Part

Part of a message that contains parameters that may or may not occur in any particular message type.

Peer Entities

Entities in the same layer but in different systems (nodes) which must exchange information to achieve a common objective.

Peer Protocol

A formal language used by peer entities to exchange user data.

Glossary

Physical Layer *

The layer that provides transparent transmission of a bit stream over a circuit built from some physical communications medium. (Layer 1) *

Pointers *

A single octet indicating the beginning of each mandatory variable parameter and optional part. *

Presentation Layer *

The layer that transforms the syntax of the data to be transferred into a form recognizable by the communication application processes. (Layer 6). *

Preventive Cyclic Retransmission (Error Control) Method

A noncompelled, positive acknowledgement, cyclic retransmission forward error correction system.

Primitives *

Consist of commands and their respective responses associated with the services requested between adjacent levels. *

Processor Outage

A situation in which a signalling link becomes unavailable, due to factors at a functional level higher than level 2. This may be because of, for example, a central processor failure. It may also be due to a manually initiated blocking of an individual signalling link.

Quasi-Associated Mode (of Signalling)

A nonassociated mode (of signalling) in which the (signalling) message route is determined basically, for each signalling message, by information contained in this message (namely in its routing label) and is fixed in normal operation.

Random Errors

Errors distributed over the digital signal so that they can be considered statistically independent from each other.

Retransmission Buffer

Storage in the signalling link control for signal units transmitted but not positively acknowledged.

Retrieval

The process of transferring all those messages in the retransmission buffer of a signalling link (A), which have not yet been positively acknowledged, to the transmission of alternative signalling links.

Routing Label

The part of the message label that is used for message routing in the signalling network. It includes the destination point code, the originating point code and the signalling link selection field.

Service Indicator

Information within a signalling message identifying the user to which the message belongs.

Service Information (Octet)

Eight bits, contained in a message signal unit, comprising the service indicator and the sub-service field.

Session Layer

The layer that coordinates the interaction with each association between communicating application processes. (Layer 5)

Signal Unit

A group of bits forming a separately transferable entity used to convey information on a signalling link.

Signal Unit Alignment

Signal unit alignment exists when flags are received at intervals which correspond to integral numbers of octets and which fall within certain upper and lower limits.

Signal Unit Error Rate Monitoring

A procedure by which the error rate of an active signalling link is measured on the basis of a count of correctly checking and erroneous signal units.

Signal Unit Sequence Control

Procedures used at Level 2 to ensure that message signal units are transported in sequence, without loss or duplication, over a particular signalling link.

Signalling Connection Control Part

SCCP provides additional functions to the MTP to cater for both connectionless as well as connection-oriented network services and to achieve an OSI compatible network service.

Signalling End Point

A signalling point with the ability to source or sink Network Service Part user data and considered exclusively from the viewpoint of the source or sink.

Signalling Information

All information transferred over Signalling System No. 7 using its protocol.

Signalling Information (Field)

The bits of a message signal unit which carry information particular to a certain user transaction and always contain a label.

Signalling Link

A transmission means which consists of a signalling data link and its transfer control functions, used for reliable transfer of a signalling message.

Signalling Link Activation

The process of making a signalling link ready to carry signalling traffic.

Glossary

Signalling Link Blocking

An event causing the unavailability of a signalling link typically consisting in a "processor outage" condition at one end of that signalling link.

Signalling Link Code

A field with certain signalling network management messages, which indicates the particular signalling link to which the message refers among those interconnecting the two involved signalling points.

Signalling Link Deactivation

The procedure by which a link set or single signalling link is taken out of service.

Signalling Link Error Monitoring

This comprises two functions: initial alignment error rate monitoring and signal unit error rate monitoring.

Signalling Link Failure

An event causing the unavailability of a signalling link, typically consisting in a failure in signalling terminal equipment or in the signalling data link.

(Signalling) Link Group

A set of signalling links directly connecting two signalling points and having the same physical characteristics (bit rate, propagation delay, etc.).

Signalling Link Management Functions

Functions that control and take actions, when required, to preserve integrity of locally connected signalling links, e.g. by reconfiguration of the signalling link sets.

Signalling Link Restoration

An event consisting in the completion of the initial alignment procedure on a signalling link following the removal of the previous causes of failure; if no other causes of unavailability exist (i.e. a signalling link blocked condition) then the signalling link becomes available.

Signalling Link Selection Field

A field of the routing label which is typically used by the message routing function to perform load sharing among different signalling links/link sets.

(Signalling) Link Set

A set of signalling link(s) directly connecting two signalling points.

Signalling Link Unblocking

An event consisting in the removal of the previous causes of signalling link blocking; if no other causes of unavailable exist (i.e. a signalling link failed condition), then the signalling link becomes available.

Signalling Message

An assembly of signalling information pertaining to a call, management transaction, etc. that is transferred as an entity.

(Signalling) Message Discrimination

The process which decides, for each incoming message, whether the signalling point is destination point or if it should act as signalling transfer point for that message and accordingly, whether the message should be handled to (signalling) message distribution or to (signalling) message routing functions.

(Signalling) Message Distribution

The process of determining, upon receipt of a signalling message at its destination point, to which User Part the signalling message is to be delivered.

(Signalling) Message Handling Functions

Functions that, at the actual transfer of a message, direct the message to the proper signalling link or User Part.

(Signalling) Message Route

The signalling link or consecutive links connected in tandem that are used to convey a signalling message from an originating point to its destination point.

(Signalling) Message Routing

The process for selecting, for each signalling message to be sent, the signalling link to be used.

Signalling Network

A network used for signalling by one or more users and consisting of signalling points and connecting signalling links.

Signalling Network Functions

The functions which are performed by the Message Transfer Part at level 3 and are common to, and independent of, the operation of individual signalling links. They include the signalling message handling functions and the signalling network management functions.

Signalling Network Management Functions

Functions that, on the basis of predetermined data and information about the status of the signalling network, control the current message routing and configuration of signalling network facilities.

Signalling Point

A node in a signalling network which either originates and receives signalling messages, or transfers signalling messages from one signalling link to another, or both.

(Signalling) Point Code

A binary code uniquely identifying a signalling point in a signalling network. This code is used, according to its position in the label, either as destination point code or as originating point code.

Signalling Relation

A relation between two signalling points involving the possibility of information interchange between corresponding User Part functions.

Signalling Route

A predetermined path described by a succession of signalling points that may be traversed by signalling messages directed by a signalling point towards a specific destination point.

Signalling Route Management Functions

Functions that transfer information about changes in the availability of signalling routes in the signalling network.

Signalling Route Set *

A complete set of signalling routes from a signalling point towards a specific destination. *

Signalling Route-Set-Test Procedure

A procedure, included in the signalling route management which is used to test the availability of a given signalling route, previously declared unavailable.

(Signalling) Traffic Flow Control

Actions and procedures intended to limit signalling traffic as its source in the case when the signalling network is not capable of transferring all signalling traffic offered by the User Parts, because of network failures or overload situations.

Signalling Traffic Management Functions

Functions that control and, when required, modify routing information used by the Message routing function and control the transfer of signalling traffic in a manner that avoids irregularities in message flow.

Signalling Transfer Point

A signalling point with the function of transferring signalling messages from one signalling link to another and considered exclusively from the viewpoint of the transfer.

Status Field

The bits of a link status signal unit which indicate one of the major signalling link states.

Subservice Field *

The layer 3 field containing the network indicator and the message priority. *

Subsystem Number *

A number to identify a user of the SCCP, like the ISDN user part. *

Time Controlled Diversion

A procedure, included in the changeback procedure, which minimizes the probability of mis-sequenced messages when a changeback declaration is impossible.

Transaction Capabilities *

Functions which control non-circuit related information transfer between two or more nodes via a signalling network. *

Transaction Capabilities Application Part *

Transaction Capabilities Application Part is the application layer of the Transaction Capabilities protocol. *

Transaction Portion *

The portion of the TCAP message that identifies whether the transaction is expected to consist of single or multiple messages and provides a means to associate these messages with a specific transaction and to terminate a transaction. *

Transceiver *

Check-tone transmitter and receiver. *

Transfer-Allowed (Procedure)

A procedure, included in the signalling route management, which is used to inform a signalling point that a signalling route has become available.

Transfer-Controlled (Procedure), U. S. Networks *

A procedure, included in the signalling route management, which is used to inform an originating signalling point that a signalling route set is congested and that only traffic with a sufficient priority level should be sent. *

Transfer-Prohibited (Procedure)

A procedure, included in the signalling route management, which is used to inform a signalling point of the unavailability of a signalling route.

Transfer-Restricted (Procedure) *

A procedure, included in the signalling route management, which is used to inform a signalling point that a signalling route is not optimal and should be avoided where possible. *

Transmission Buffer

Storage in the signalling link control for signal units not yet transmitted.

Transport Layer *

The layer that provides end user to end user transfer, optimizing the use of resources. (Layer 4) *

User Part

A functional part of the common channel signalling system which transfers signalling messages via the Message Transfer Part. Different types of User Parts exist (e.g. for telephone and data services), each of which is specified to a particular use of the signalling system.

User (of the Signalling System)

A functional entity, typically a telecommunication service, which uses a signalling network to transfer information.