INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.1290

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(03/93)

GENERAL RECOMMENDATIONS ON TELEPHONE SWITCHING AND SIGNALLING

INTELLIGENT NETWORK

GLOSSARY OF TERMS USED IN THE DEFINITION OF INTELLIGENT NETWORKS

ITU-T Recommendation Q.1290

(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 Q.1290 was prepared by the ITU-T Study Group XI (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 Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.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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SUMMARY

This Recommendation provides a glossary of terms and definitions which have been studied for application in the documentation of intelligent networks. These terms will also be incorporated in Recommendation Q.9, Vocabulary of Switching and Signalling Terms.

The text in this Recommendation is considered to be stable. Companion Recommendations include the Q.120x- and Q.121x-Series of Recommendations.

Recommendation Q.1290

GLOSSARY OF TERMS USED IN THE DEFINITION OF INTELLIGENT NETWORKS

(Helsinki, 1993)

1 General

This Recommendation provides a glossary of terms and definitions which have been studied for application in the documentation of intelligent networks. These terms will also be incorporated in Recommendation Q.9, Vocabulary of Switching and Signalling Terms.

To the extent practicable, terms that have been defined previously are used unchanged and reference to the source of the definition is shown next to the term in parenthesis. The definitions that have been changed to make them appropriate for this application are considered to be new definitions; however, reference to the source definition is also shown in parenthesis.

2 Terms and definitions (listed alphabetically)

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

access: A means of interaction between a user and a network.

access channel (Q.9 – 0008, I.112 – 414): A designated part of the information transfer capability having specified characteristics, provided at the user-network interface.

access function: A set of processes in a network that provide for interaction between the user and a network.

adjunct (AD): An entity in the intelligent network that is functionally equivalent to a service control point but is directly connected to a service switching point.

application entity (Q.9 – 2156 modified): A set of application service elements which together perform all or part of the communications aspects of an application process.

application program: Logic residing in the service control and service management realms that directs and/or controls the performance of actions in the network to provide and/or manage the provision of IN service features.

application programming interfaces (APIs): Interfaces that support the process of creating, installing, testing, modifying, etc. IN application programs.

application service element (ASE) (Q.9 – 2158 modified): A coherent set of integrated functions within an application entity.

architecture: Any ordered arrangement of the parts of a system.

association: A logical relationship between entities exercised in performing a function.

attribute: An intrinsic property of an object.

basic call: A call between two users that does not include additional features (e.g. a plain telephone call).

basic call process (BCP): The sequence of activities used in processing a basic call attempt.

basic call state model (BCSM): A high-level finite state machine model of call processing for basic call control (i.e. a two party non-IN call). The model might only cover a portion of a call attempt, e.g. an originating BCSM or terminating BCSM, or the whole attempted call connection, originating user to terminating user.

call (Q.9 – 0009-2 Revised by omitting note): The use, or possible use, of one or more connections set up between two or more users and/or service(s).

call control: The set of functions used to process a call (e.g. provide service features and establish, supervise, maintain and release connections).

call control agent functional entity (CCAF): A functional entity that provides network access functions for users, interacting with call control functional entities in providing services.

call control functional entity (CCF): Functional entities which cooperate with each other to provide network call processing functions.

call instance data (CID): An identifier that defines subscriber specific details (i.e. value will change with each call instance) for service independent building blocks in the global functional plane.

call model (CM): A representation of functions involved in processing a call.

call/service processing: The execution of logic by a switching or control function to advance a call attempt or a service request.

call segment: A specific portion of the processing of a call.

call segment model (CSM): A representation of the processing of a call in terms of call segments.

capability set (CS): A set of intelligent network capabilities that are to be the subjects of standardization activities and for which the availability of standards Recommendations will be targeted for a particular time frame.

connection (Q.9 – 0011): An association of transmission channels or circuits, switching and other functional units set up to provide a means for a transfer of information between two or more points in a telecommunications network.

connection control: The set of functions used for setting up, maintaining and releasing a communication path between two or more users or a user and a network entity, e.g. a dual tone multifrequency receiver.

control: To exercise a directing influence.

control window: An interval during which an entity involved in call/service processing is subject to the control of the service control function.

core feature: A service feature that is fundamental to a service, i.e. in the absence of the feature, the service is not a viable service offering.

data: User and/or network information stored in the network used in connection with call/service processing. An instance of a data object.

data base: An entity that stores information.

data management: Establishing, updating and administering data bases in the network.

data object: An individually addressable unit of information specified in a data template.

data template: A specified logical structure for a collection of data objects, including allowable ranges for their values and other data consistency specifications.

detection point (DP): A point in basic call processing at which a processing event may be reported to the service control function and transfer of processing control can occur.

dialog(ue): A conversation or an exchange of information.

directory: A listing of objects in a specific sequence.

distributed functional plane (DFP): The plane in the intelligent network conceptual model containing functional entities and their relationships.

distributed service logic (DSL): Logic in the distributed functional plane that is used to realize service independent building blocks.

dynamic arming/disarming: Enabling/disabling of a detection point by a service control function in the course of service control execution for a particular call/service attempt.

dynamic data: Information subject to change as a result of call/service processing.

element: An identifiable physical unit.

elementary function: A primary or basic function that cannot be further decomposed.

entity (Q.9 – 7110): A part, device, sub-system, functional unit, equipment or system that can be individually considered. In ISDN the term is used to refer to a particular system or sub-system such as a user terminal or a digital exchange. It is also used to refer to a set of functions of a particular system at a location, e.g. the layer 2 functions of a signalling system at a user terminal.

event: A specific input to and/or output from a given state in a finite state machine model that causes a transition from one state to another.

event detection point: A detection point that is dynamically armed.

executive process: A process that controls the execution of other processes.

feature: A reusable capability provided to a user by one or more services in a network.

feature interaction: A situation that occurs when an action of one feature affects an action or capability of another.

finite state machine (FSM): A system having a finite number of states and specified transitions between states.

finite state machine model: An operational model of an entity that is described by the finite set of states the entity can be in and the finite set of transitions possible from one state to another.

function (I.112 – 403): A set of processes defined for the purpose of achieving a specified objective.

functional entity (Q.9 – 7113) (In telecommunications service provision applications): A grouping of service providing functions in a single location and a subset of the total set of functions required to provide the service.

functional entity (Q.9 – 7112): An entity that comprises a specific set of functions at a given location.

functional entity action (FEA): An action performed by a functional entity as a result of a specific stimulus while the functional entity is in a specific state.

functional routine: Logic that controls the performance of a set of actions to accomplish "routine" tasks, e.g. retrieve information, pass information, etc.

global control: Control of a process whose functions are distributed among several entities.

global functional plane (GFP): The plane in the intelligent network conceptual model which defines service independent building blocks (SIBs) used in providing service features.

global service logic (GSL): Logic in the global functional plane that is used to realize features.

independent or independence: Not necessarily specific to one aspect.

information flow (Q.9 – 7120): An interaction between a communicating pair of functional entities.

intelligent network (IN): A telecommunications network architecture that provides flexibility for facilitating the introduction of new capabilities and services, including those under customer control.

intelligent network application protocol (INAP): A protocol for intelligent network applications contained in layer 7 (application of the OSI model).

IN conceptual model (INCM): A planning model used for defining the intelligent network architecture.

IN data base (INDB): A physical entity used for information storage in the intelligent network.

IN data base management system (INDBMS): A system used for establishing and/or administering information storage in the intelligent network.

IN supported service: A service provided using the capabilities of the intelligent network.

intelligent peripheral (IP): A physical entity that implements the intelligent network specialized resource function.

interface (Q.9 – 4001): A shared boundary, for example, the boundary between two sub-systems or two devices.

layer (Q.9 – 2160): A conceptual region that embodies one or more functions between an upper and a lower logical boundary within a hierarchy of functions.

leg: A representation within a call processing state model representing a telecommunication path towards some addressable entity (e.g. a path toward a user, intelligent peripheral unit etc.).

library: An assembly of objects, routines, programs, etc. that may be drawn upon for use in the performance of functions.

manager: A function that directs and/or controls operations of a function or an assembly of functions to allow a functional entity to perform all or a part of the expected functional entity actions.

management: The function of directing, maintaining and/or administering.

management function: A set of processes used for the management of an entity (e.g. data base management).

management building block: A reusable set of functional entity actions and information flows used to provide service management functions in the network.

monitor window: An interval during which an entity performs the monitoring function at the direction of a service control function.

network access point (NAP): A physical entity that provides network access for users. It contains the call control agent function and may include the call control function.

network implementation independence: Not dependent on a specific network configuration.

network interworking: A process in which different networks cooperate to provide a service.

object: An intrinsic component of an entity that is described at an appropriate level of abstraction in terms of its attributes and functions.

optional feature: A service feature added to core features to optionally enhance a service offering.

persistent data: Information that endures beyond a single instance of use, e.g. longer than one call attempt.

physical plane: The plane in the intelligent network conceptual model containing elements and their interfaces that implement functional entities.

plane: A part of the intelligent network conceptual model.

point in call (PIC): A state in a basic call state model.

point of initiation (POI): A functional interface between basic call processing and service logic over which service control is initiated.

point of return (POR): A functional interface between service logic and basic call processing over which call processing control is returned to basic call processing.

protocol layer (based on Q.9 – 2160 – definition of "layer"): A group of one or more functions within an upper and lower logical boundary within a protocol reference model. [Layer (N) has boundaries to layer (N + 1) and to layer (N – 1).]

relationship (Q.65): The complete set of information flows, where they exist, between two functional entities.

resource: In telecommunications, any network element that can be drawn upon in providing service, e.g. a circuit, a receiver, etc.

service (Q.9 – 7011, modified): That which is offered by an administration or ROA to its customers in order to satisfy a telecommunication requirement.

service control: Direction of the functions or processes used to provide a specific telecommunications service.

service control function (SCF): The application of service logic to control functional entities in providing intelligent network services.

service control point (SCP): An entity in the intelligent network that implements a service control function.

service creation: An activity whereby the capability to provide a supplementary service is brought into being from specification to development and verification.

service creation environment function (SCEF): The set of functions that support the service creation process, the output of which includes both service logic programs and service data.

service creation environment point (SCEP): A physical entity that implements the service creation environment function.

service creation platform: A set of service independent objects or functions which allow the creation of services in an intelligent network.

service creation process: The conception, design and implementation of a capability to provide a service.

service data: Customer and/or network information required for the proper functioning of a service.

service data function (SDF): The set of functions that provides for the management of service data in accordance with a service data template.

service data point (SDP): A physical entity that implements a service data function.

service data template: A data template related to a specific service logic program.

service feature (SF): A reusable part of one or more service capabilities forming all or part of a service.

service independence: Not necessarily specific to one service.

service independent:

1) not dependent on the availability of other services; or

2) having freedom to create any service desired.

service independent building block (SIB): A reusable set of functional entity actions and information flows used to provide a service feature or a part of a service feature in an intelligent network.

service logic: A sequence of processes/functions used to provide a specific service.

service logic processing program (SLP): A software program containing service logic.

service logic processing program (use) instance (SLPI): The invocation and application of a particular service logic program in providing a service or a service feature for a specific call/service attempt.

service management: Management of user and/or network information required for the proper operation of a service.

service management access function (SMAF): A functional interface between network operators and/or subscribers and network service management functional entities.

service management function (SMF): The set of processes that support the management of user and/or network information, including service data and service logic programs that are required for the proper operation of a service.

service management point (SMP): A physical entity that implements a service management function.

service node (SN): A physical entity that contains the service control function, service data function, specialized resource function and service switching/call control functions. The SSF/CCF is closely coupled to the SCF within the SN and is not accessible by other SCFs.

service plane: The plane in the intelligent network conceptual model that contains services, service entities and their relationships.

service processing: The execution of service control and basic call processing functions to provide a service.

service provider: An organization that commercially manages services offered to service subscribers.

service subscriber: An entity that contracts for services offered by service providers.

service support data (SSD): An identifier that defines data parameters of specific service feature descriptions for service independent building blocks in the global functional plane.

service switching and control point (SSCP): A physical entity that contains the service control function, service data function and the service switching/call control functions.

service switching function (SSF): The set of processes that provide for interaction between a call control function and a service control function.

service switching point (SSP): A physical entity that implements a service switching function.

single-ended service feature: A feature, e.g. call/service attempt manipulation, that applies to only one of the parties that may be involved on a call/service attempt.

single point of control: A control relationship where the same phase or aspect of a call/service attempt is influenced by one and only one service control function.

specialized resource function (SRF): The set of functions that provide for the control and access to resources used in providing services in the intelligent network.

state (in FSM): A description of an entity defined by the values of its object attributes at a given point in time.

state (in SDL) (Q.9 – 6942): A condition in which the action of a process is suspended awaiting an input.

static arming/disarming: Enabling/disabling of a detection point, as directed by a service management function, to cause a specified action by call/service processing whenever a specific point in call/service processing is encountered.

static data: Information that remains unchanged for the duration of a call or incident of use of a service. (Usually controlled by a source external to the network.)

supplemented call: A basic call with added service features or capabilities.

transition: In a finite state machine model, a change in the state of an entity resulting from a change in the values of its object attributes.

trigger: A stimulus for initiating an action.

trigger detection point (TDP): A detection point in basic call processing that is statically armed.

user: An entity external to the network that uses its service(s).

vendor or implementation independent: The characteristic that products from different vendors are able to work together in the same environment, and/or, physical units serving as the same functional entity(ies) produced by different vendors can be used interchangeably.

work station: A physical entity that implements the work station function.