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**SERIES I: INTEGRATED SERVICES DIGITAL
NETWORK**

Overall network aspects and functions – Reference
models

SERIES Q: SWITCHING AND SIGNALLING

Intelligent Network

Intelligent Network – Service plane architecture

ITU-T Recommendation I.328/Q.1202

(Previously CCITT Recommendation)

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For further details, please refer to ITU-T List of Recommendations.

ITU-T RECOMMENDATION I.328/Q.1202

INTELLIGENT NETWORK – SERVICE PLANE ARCHITECTURE

Summary

This Recommendation has been updated to include new capabilities and functionalities included in the IN CS-2 series (Q.122x) of Recommendations. It provides a general architecture of the IN service plane in a way that specific functionalities and their interactions can be identified and described in other Recommendations which make reference to the service plane. The service plane illustrates that IN-supported services can be described to the end user or subscriber by means of a set of generic building blocks called "service features". This Recommendation describes this process of supporting services in an IN-structured network and the service plane's relationship to the other planes in the IN Conceptual Model.

Source

ITU-T Recommendation I.328/Q.1202 was revised by ITU-T Study Group 11 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 12th of September 1997.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. 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, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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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As of the date of approval of this Recommendation, the ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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Recommendation I.328/Q.1202**INTELLIGENT NETWORK – SERVICE PLANE ARCHITECTURE***(revised in 1997)***1 General**

Recommendation I.312/Q.1201 "Principles of intelligent network architecture" presents the Intelligent Network Conceptual Model (INCM), as based on a four-plane structure.

The objective of this Recommendation is to provide a general architecture of the IN service plane in a way that specific functionalities and their interactions can be identified and described in other Recommendations making reference to the IN service plane architecture contained in this Recommendation.

2 Service plane architecture**2.0 General**

The service plane illustrates that IN-supported services can be described to the end user or subscriber by means of a set of generic blocks called "service features".

A service is a stand-alone commercial offering, characterized by one or more core service features, and can be optionally enhanced by other service features.

A service feature is a specific aspect of a service that can also be used in conjunction with other services/service features as part of commercial offering. It is either a core part of a service or an optional part offered as an enhancement to a service.

The service plane represents an exclusively service-oriented view. This view contains no information whatsoever regarding the implementation of the services in the network (for instance, an IN type of implementation is invisible). All that is perceived is the network's service-related behaviour as seen, for example, by a service user.

Furthermore, management services are contained in the service plane; they can be described to the end user by means of service management features.

2.1 Characterization of services and service capability requirements

Characterization of services and service features is to identify service independent capabilities that are required to construct and/or customize services by the users or network operators. Examples of service capabilities required from the user point of view are call queueing, customized announcement, etc.

There is a need for a structured approach with which to classify service characteristics and identify service capabilities. The structured approach shown in Figure 1 below demonstrates a high level approach for analyzing services and decomposing services into Service Independent Building Blocks (SIBs) These reusable service independent building blocks (such as TRANSLATE, USER INTERACTION or CHARGE) will form the basis for input to global functional plane modelling and distributed functional plane modelling.

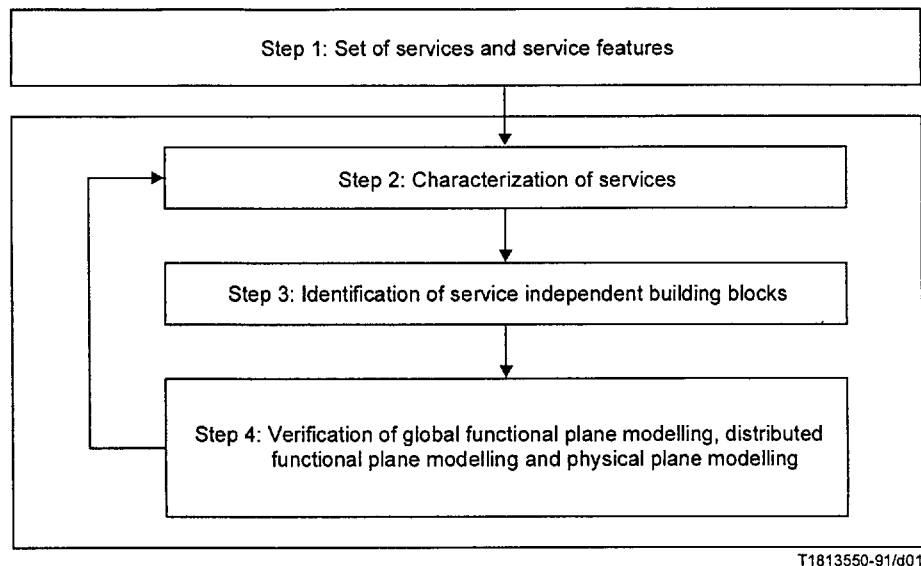
It is recommended that activities involving functional modelling make use of the results of such service analysis, based on the characterization of services for verification of their models, and to ensure a unified model for service processing.

2.2 Service plane modelling

Services are comprised of one or more Service Features (SF). A service feature is the smallest part of a service that can be perceived by the service user. These SFs can also be used as building blocks in the specification and design of new, more complex services. SFs are comprised of one or more SIBs which are described in Recommendation I.329/Q.1203.

**Documents**

Document Sharing Hub



- Step 1** Existing service descriptions (Stage 1, Service description) as well as emerging service descriptions are selected as candidates for analysis.
- Step 2** These services are characterized based on the principle of decomposition of services into functions.
- Step 3** The analysis in step 2 results in requirements in the form of service independent building blocks as the input to global functional plane modelling, distributed functional plane modelling and physical plane modelling.
- Step 4** Verification of the global functional plane modelling, distributed functional plane modelling and physical plane modelling results in improved SIBs through feedback to step 2.

Figure 1/Q.1202 – An approach for analyzing services

All individual telecommunication services identified in the service plane should be described as seen from the user's viewpoint without reference to how the services are implemented in the network.

In the service plane architecture, it is stressed that all capabilities experienced by a service user of the network represent telecommunication services (basic or supplementary). The service user may make use of the service for his own communication needs or may combine a number of services together and with perhaps additional capabilities, use the combination as a means of providing communications to other (third) parties.

2.3 Service and service feature interaction

This subclause focuses on the interaction between IN supported services and other supplementary services and not between basic services. The service interactions are described from the customer and user point of view.

There are often many ways to deal with an interaction between two or more services. In an IN-structured network, service interactions may be customized.

Example of service interactions are given below:

- Abbreviated Dialling and Number Screening;
- Freephone and Call Forwarding Unconditional;
- CLIR (Calling Line Identification Restriction) and CLIP (Calling Line Identification Presentation);
- Call Forwarding and Premium Rate Service;
- Call Waiting and Call Forwarding Busy;
- Conference Call and CUG (Closed User Group);
- Meet-me Conference and CUG.