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SERIES Q: SWITCHING AND SIGNALLING
Intelligent Network

Introduction to Intelligent Network Capability Set 4

ITU-T Recommendation Q.1241

(Formerly CCITT Recommendation)

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

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Introduction to Intelligent Network Capability Set 4

Summary

This Recommendation is the first of the ITU-T Q.124x series of Recommendations devoted to IN CS-4, which builds on the architectural principles of IN as described in the preceding IN CS-1 (ITU-T Q.121x), IN CS-2 (ITU-T Q.122x) and the IN CS-3 (ITU-T Q.123x) series of Recommendations. Intelligent Network Capability Set 4 (IN CS-4) is the fourth standardized stage of the Intelligent Network (IN) as an architectural concept for the creation and provision of services, including telecommunication services, service creation and management. This Recommendation gives an introduction to IN CS-4 and describes the main characteristics and overall capabilities of IN CS-4. It includes the CS-4 functional architecture relationships plus service and network aspects that form the basis of the IN CS-4 capabilities. CS-4 Service Features are listed and possible inter-networking scenarios between IN and non-IN structured networks are also described.

The IN CS-4 Recommendations form a detailed and stable basis for implementing IN CS-4 telecommunication services. They also provide high level guidelines for supporting:

- service management;
- service creation, and
- some partially supported telecommunication services.

The IN CS-4 Recommendations are intended to give the same degree of technical information as the IN CS-3 Recommendations.

Source

ITU-T Recommendation Q.1241 was prepared by ITU-T Study Group 11 (2001-2004) and approved under the WTSA Resolution 1 procedure on 13 July 2001.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. 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 Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 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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Introduction to Intelligent Network Capability Set 4

1 Introduction

This Recommendation contains an introduction to Intelligent Network Capability Set 4 (IN CS-4). It describes the main characteristics and overall capabilities of IN CS-4 and defines the service and network aspects with functional relationships that form the basis for IN CS-4 capabilities. IN CS-4, as successor to IN CS-3, becomes the fourth standardized stage of the Intelligent Network (IN) for the creation and provision of network services. Along with advances in call modelling, security, feature interaction and mobility management, IN CS-4 offers enhanced Number Portability, Mobility, Broadband, Broadband and inter-working with the services in the Internet Protocol (IP) Networks.

2 Phased Standardization

The phased approach of IN Capability Sets is described in ITU-T Q.1201. IN CS-4 extends the service aspects, network aspects and management aspects of IN CS-3 as specified in the ITU-T Q.123x series of Recommendations. Definition of IN CS-3 service features may be found in ITU-T Q.1231.

3 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- [1] ITU-T Q.1210 (1995), *Q.1210-series intelligent network Recommendation structure*.
- [2] ITU-T Q.1211 (1993), *Introduction to intelligent network capability set 1*.
- [3] ITU-T Q.1213 (1995), *Global functional plane for intelligent network CS-1*.
- [4] ITU-T Q.1214 (1995), *Distributed functional plane for intelligent network CS-1*.
- [5] ITU-T Q.1215 (1995), *Physical plane for intelligent network CS-1*.
- [6] ITU-T Q.1218 (1995), *Interface Recommendation for intelligent network CS-1*.
- [7] ITU-T Q.1220 (1997), *Q.1220-series Intelligent Network Capability Set 2 Recommendation structure*.
- [8] ITU-T Q.1221 (1997), *Introduction to Intelligent Network Capability Set 2*.
- [9] ITU-T Q.1222 (1997), *Service plane for Intelligent Network Capability Set 2*.
- [10] ITU-T Q.1223 (1997), *Global functional plane for Intelligent Network Capability Set 2*.
- [11] ITU-T Q.1224 (1997), *Distributed functional plane for Intelligent Network Capability Set 2*.
- [12] ITU-T Q.1225 (1997), *Physical plane for Intelligent Network Capability Set 2*.
- [13] ITU-T Q.1228 (1997), *Interface Recommendation for Intelligent Network Capability Set 2*.

- [14] ITU-T Q.1231 (1999), *Introduction to Intelligent Network Capability Set 3*.
- [15] ITU-T Q.1236 (1999), *Intelligent Network Capability Set 3 – Management Information Model Requirements and Methodology*.
- [16] ITU-T Q.1237 (2000), *Extensions to Intelligent Network Capability Set 3 in support of B-ISDN*.
- [17] ITU-T Q.1238.x (2000), *Interface Recommendation for Intelligent Network Capability Set 3*.
- [18] ITU-T Q.1290 (1998), *Glossary of terms used in the definition of Intelligent Networks*.

4 General Description and Scope of IN CS-4

4.1 Criteria for IN CS-4

IN CS-4 defines a set of IN capabilities that meet the following general criteria:

- IN CS-4 is a subset of the target Intelligent Networks architecture.
- IN CS-4 is a superset of IN CS-3, as defined in the IN CS-3 Recommendations (1999).
- IN CS-4 is a set of definitions of capabilities that is help to both manufacturers and network service providers/operators.
- IN CS-4 provides network capabilities defined to support the set of IN CS-4 benchmark services and service features. These capabilities can also be used to support other services that may, or may not, be standardized by ITU-T.

The following clauses outline the work items defined for IN CS-4.

4.2 Basic features

1) Evolution of IN CS-3

Enhancement of the existing CS-3 features

2) Multiple point of control

More than one-service logic's in one or more SCFs are allowed to act on the same (half) call, which implies retriggering in the same SSP. The involved service logic's act independently from each other (same behaviour as if the service logic's are triggered in different SSPs), i.e. each service logic has its own abstract view of its half call segment.

The interaction between the CCF and the several sub-SSFs is handled by an enhanced functional entity located between the CCF and the sub SSFs (Feature Interaction Manager).

4.3 IN Support for Voice over IP

4.3.1 Basic Services

INAP CS-4 to support Voice over IP customers, including some new INAP CS-4 network capabilities, such as "high quality audio" should support the following network voice services. Services that should be supported (as H.323 and SIP will support these services in the future) that may require INAP control are:

- *Speech*;
- Low bit rate data;
- Medium bit rate data;
- High bit rate data;
- High quality audio;
- Low bandwidth video;
- High bandwidth video.