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INTELLIGENT NETWORK

Q.1210-SERIES INTELLIGENT NETWORK RECOMMENDATION STRUCTURE

ITU-T Recommendation Q.1210

(Previously “CCITT Recommendation”)

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (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 (Helsinki, March 1-12, 1993).

ITU-T Recommendation Q.1210 was prepared by ITU-T Study Group 11 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 17th of October 1995.

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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SUMMARY

A block of one hundred numbers has been set aside in the Q-Series (Q.1200-Q.1299) for the development of Intelligent Network (IN) Recommendations. Q.1210 is a new Recommendation in the IN-Series that was developed in conjunction with the IN CS-1 refinements to better align the IN CS-1 Recommendations with the overall IN CS-n Recommendation structure.

This Recommendation, the first in the IN Capability Set-1 Series, has been developed to show the organization of the IN CS-1 Recommendations in a meaningful way and to assists users in locating topics of interest. It provides a structural overview of the Q.1200-Series, IN Recommendations, as well as the content of each of the Q.1210-Series, IN CS-1 Recommendations.

Associated standards work is contained in the Q.1200-Series as well as the Q.1210-Series of IN Recommendations.

Recommendation Q.1210

Q.1210-SERIES INTELLIGENT NETWORK RECOMMENDATION STRUCTURE

(Geneva, 1995)

General Q.1200-Series structure

Table 1 shows the overall Q.1200-Series Intelligent Network Recommendation structural distribution through the tens digits (1200, 1210, 1220, etc.) and the ones digits (i.e. 1201, 1202, 1203, etc.).

TABLE 1/Q.1210

Recommendation framework structure

00 – General	
10 – CS-1	1 – Principles introduction
20 – CS-2	2 – Service Plane (not included for CS-1)
30 – CS-3	3 – Global Functional Plane
40 – CS-4	4 – Distributed Functional Plane
50 – CS-5	5 – Physical Plane
60 – CS-6	6 – For future use
70 – CS-7	7 – For future use
80 – CS-8	8 – Interface Recommendations
90 – Glossary	9 – Intelligent Network user's guide
NOTES 1 Recommendation Q.1200 is assigned as for the IN Recommendation framework structure. 2 Q.1290-Series has been set aside for the glossary.	

Q.1210-SERIES INTELLIGENT NETWORK RECOMMENDATION STRUCTURE

1 Q.1210-Series Intelligent Network Recommendation overview

Q.1210 – Q-Series Intelligent Network Recommendation structure

1 Q.1210-Series Intelligent Network Recommendation overview

Q.1211 – Introduction to Intelligent Network capability set-1

1 Introduction

2 Phased standardization

3 General description and scope of CS-1
- 3.1 Criteria for CS-1
- 3.2 Evolution of CS-1

4 Overview of CS-1 Recommendations

5 Service aspects
- 5.1 Type A and B services
- 5.2 Target set of CS-1 service and service features
- 5.3 Network support of CS-1 services

6 Network aspects
- 6.1 Network functions
- 6.2 Control architecture principles
- 6.3 Feature interactions
- 6.4 Consistency among CS-1 supported service features

7 Functional relationships and interfaces
- 7.1 Reference points and identifiers for functional relationships
- 7.2 Control classes
- 7.3 Reference point identifiers of functional interfaces
- 7.4 CS-1 Non-IN connection and call control
- 7.5 CS-1 IN service control
- 7.6 Service management for CS-1
- 7.7 Network interworking in CS-1
- 7.8 Summary of CS-1 functional interfaces

Annex A – Examples of relationships and mappings between services and service features

Annex B – Short prose descriptions of targeted services and service features

Q.1213 – Global functional plane for Intelligent Network CS-1

1 General

2 Scope of IN global functional plane for capability set 1

3 References

4 IN CS-1 global functional plane
- 4.1 Role of SIBs in the global functional plane
- 4.2 Additional characteristics of a IN CS-1 SIBs
- 4.3 CS-1 global functional plane model
- 4.4 Terminology

5 IN CS-1 Service Independent Building Blocks (SIBs)
- 5.1 Data parameters for SIBs
- 5.2 Method to describe SIBs

5.3 ALGORITHM
5.4 AUTHENTICATE
5.5 CHARGE
5.6 COMPARE
5.7 DISTRIBUTION
5.8 LIMIT
5.9 LOG CALL INFORMATION
5.10 QUEUE
5.11 SCREEN
5.12 SERVICE DATA MANAGEMENT
5.13 STATUS NOTIFICATION
5.14 TRANSLATE
5.15 USER INTERACTION
5.16 VERIFY

6 Basic call process
6.1 General
6.2 Point of initiation and point of return
6.3 BCP stage 1 description

7 Global service logic
7.1 Relationship between GSL and BCP
7.2 Relationship between global service logic and SIBs

8 Mapping of the service plane to the global functional plane

Q.1214 – Distributed functional plane for Intelligent Network CS-1

1 General

2 Scope of IN distributed functional plane for capability set 1
2.1 End-user access
2.2 Service invocation and control
2.3 End-user interaction
2.4 Service management

3 Distributed functional plane model for CS-1
3.1 Explanation of diagram
3.2 IN functional model
3.3 Definition of Functional Entities related to IN service execution

4 Functional entity call/service processing models
4.1 Overview
4.2 SSF/CCF model
4.2.1 General
4.2.2 Basic Call Manager (BCM)
4.2.3 IN-Switching Manager (IN-SM)
4.2.4 Feature Interaction Manager (FIM)/Call Manager (CM)
4.2.5 Relationship of SSF/CCF model components
4.2.6 Relationship of SSF/CCF to SCF
4.3 Specialized Resource Function (SRF) model
4.3.1 General
4.3.2 SRF components
4.3.3 SRF and other entity relationships
4.3.4 Objects of SRF management
4.4 Service Control Function (SCF) model
4.4.1 General
4.4.2 SCF components
4.4.3 Functional routine categories

4.5 Service Data Function (SDF) model
4.5.1 General
4.5.2 SDF components
4.5.3 Data types handled by the SDF

5 Stage 2 description of Service Independent Building Blocks (SIBs)
5.1 Introduction
5.1.1 Functional model
5.1.2 Description of functional entities
5.1.3 Numbering of functional entity actions
5.1.4 Relationship with clause 6 (Information flow descriptions)
5.1.5 Organization of clause 5
5.1.6 Abbreviations used in clause 5
5.2 SIB stage 2 descriptions
5.2.1 ALGORITHM SIB
5.2.2 CHARGE SIB
5.2.3 COMPARE SIB
5.2.4 DISTRIBUTION SIB
5.2.5 LIMIT SIB
5.2.6 LOG CALL INFORMATION SIB
5.2.7 QUEUE SIB
5.2.8 SCREEN SIB
5.2.9 SERVICE DATA MANAGEMENT SIB
5.2.10 STATUS NOTIFICATION SIB
5.2.11 TRANSLATE SIB
5.2.12 USER INTERACTION SIB
5.2.13 VERIFY SIB
5.2.14 AUTHENTICATE SIB
5.3 BASIC CALL PROCESS SIB
5.3.1 Description
5.3.2 Information flows
5.3.3 SDLs
5.3.4 Functional entity actions
5.4 Stage 2 description of other distributed functionality
5.4.1 Activity test functionality
5.4.2 Call Gap capability
5.5 Mapping of the global functional plane to the distributed functional plane
5.5.1 Mapping of POIs and PORs to DPs and PICs
5.5.2 Relating the GFP to the DFP

6 Relationships between FEs
6.1 General
6.2 Relationships
6.3 Information flows between FEs
6.4 SCF-SSF relationship
6.4.1 General
6.4.2 Information flows between SCF and SSF
6.4.3 Call party handling information flows
6.4.4 IE rules for SSF/CCF to SCF information flows
6.5 SCF-SRF relationship
6.5.1 General
6.5.2 Information flows between the SCF and SRF
6.6 SCF-SDF relationship
6.6.1 General
6.6.2 Information flows between the SCF and SDF
6.7 Summary of information flows and related SIBs

Annex A – Communication between call segments

Annex B – BCSM SDL Diagrams

Appendix I – Aspects of the distributed functional plane identified as "for further study" (FFS) relative to CS-1

Appendix II – Charging scenarios examples

Q.1215 – Physical plane for Intelligent Network CS-1

1 General

2 Requirements and assumptions
- 2.1 Requirements
- 2.2 Assumptions

3 Physical Entities (PEs)

4 Mapping requirements

5 Mapping the distributed functional plane to the physical plane
- 5.1 Mapping of functional entities to physical entities
- 5.2 Mapping FE-FE relationships to PE-PE relationships
- 5.3 Selection of underlying protocol platforms
  - 5.3.1 SCP-SSP interface
  - 5.3.2 AD-SSP interface
  - 5.3.3 IP-SSP interface
  - 5.3.4 SN-SSP interface
  - 5.3.5 SCP-IP interface
  - 5.3.6 AD-IP interface
  - 5.3.7 SCP-SDP interface
  - 5.3.8 User interfaces

Q.1218 – Interface Recommendations for Intelligent Network CS-1

0 Introduction
- 0.1 Normative references
- 0.2 Definition methodology
- 0.3 Example physical scenarios
- 0.4 INAP protocol architecture
- 0.5 INAP addressing
- 0.6 Relationship between Recommendation Q.1214 and this Recommendation
- 0.7 Compatibility mechanisms used for INAP

1 SACF/MACF rules
- 1.1 Reflection of TCAP AC
- 1.2 Sequential/Parallel execution of operations

2 ASN.1 introduction
- 2.1 SSF/SCF, SCF/SRF, SSF/SRF interfaces
  - 2.1.1 Operation types IN CS-1 operations
  - 2.1.2 Error types IN CS-1 error
  - 2.1.3 Data types IN CS-1 data types
  - 2.1.4 Operation and error codes IN CS-1 codes
  - 2.1.5 Application context
- 2.2 SCF/SDF Interface
  - 2.2.1 Introduction to IN X.500 DAP subset
  - 2.2.2 The IN X.500 DAP subset
    - 2.2.2.1 Review of X.511 for use in the IN
    - 2.2.2.2 Directory Access Protocol Subset
    - 2.2.2.3 X.501 profile

2.2.2.4 Enhancements to X.500 for the support of the IN CS-1
2.2.2.5 ASN.1 Profile of the Directory Abstract Service for the IN CS-1

3 Semantics
3.1 Definition of procedures and entities
3.1.1 SSF Application Entity procedures
3.1.2 SCF Application Entity procedures
3.1.3 SRF Application Entity procedures
3.1.4 SDF Application Entity procedures
3.2 Error procedures
3.3 Detailed Operation procedures
3.4 Services assumed from TCAP

Annex A – INAP SDL diagrams

Annex B – SCSM/SDSM SDLs

Appendix I – Aspects of the Intelligent Network interface identified as "for further study" (FFS) relative to CS-1

Appendix II – Expanded ASN.1 Coding

Q.1219 – Intelligent Network users guide for capability set-1

1 Scope
1.1 Target audience
1.2 Intended use
1.3 Framework outline of Q.1200-Series
1.4 Initial set of capabilities
1.5 State of Maturity of the CS-1 Recommendations
1.6 Service Decomposition for CS-1

2 Intelligent Network objectives

3 Capabilities provided by Capability Set-1
3.1 Service implementation independence
3.2 Multi-Vendor capability
3.3 Multi-Network capability
3.4 Rapid service delivery
3.5 Service deployment

4 Service aspects for CS-1
4.1 Basic Service Capabilities
4.2 Type A service category
4.3 Type B service category
4.4 Phases of deployed services

5 CS-1 Architecture
5.1 Functions
5.2 IN CS-1 plane relationships
5.2.1 IN CS-1 Service Plane
5.2.2 IN CS-1 Global Functional
5.2.3 IN CS-1 Distributed Functional Plane
5.2.4 IN CS-1 Physical Plane
5.3 Interfaces and relationships

6 Infrastructure in CS-1
6.1 Service Independent Building Blocks (SIBs)
6.2 Service logic

6.3 Functional Entity Call/Service Logic Processing Models
6.3.1 Call Modelling for IN CS-1
6.3.2 Modelling of Service Logic Processing for IN CS-1
6.3.3 General considerations
6.4 Information flows
6.4.1 Requirement for an information flow from SCF to SSF to Initiate “Call Follow-On”
6.5 Intelligent Network Applications Protocol (INAP)
6.5.1 General ASE discussion
6.5.2 General Application Context discussion
6.5.3 Service Filtering
6.5.4 Optional Parameters
6.5.5 Considerations for the use and understanding of various operations and procedures in Recommendation Q.1218
6.6 Requirement on Inter-Exchange and User-Network Signalling
6.6.1 General
6.6.2 Interworking INAP and Network or Access Signalling
6.6.3 Terminal Type and Access Type of User
6.6.4 Optional Parameters in DP operations
6.6.5 Miscellaneous
7 Service example
7.1 Utilizing CS-1 capabilities
7.2 Guidelines for service scenarios
7.3 Format for service scenarios
8 Physical deployment scenarios
8.1 Mapping FEs to PEs
8.2 Mapping of FE-FE relationships to PE-PE relationships
9 Future IN Capability Sets
9.1 Generic plans
9.2 “Stretch forward/ease back”
9.3 Evolvable capabilities
9.4 Evolvability concepts
Annex A – IN CS-1 Service Scenario Examples
Annex B – BCSM SDLs