INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.1208

(09/97)

SERIES Q: SWITCHING AND SIGNALLING

Intelligent Network

General aspects of the Intelligent Network Application protocol

ITU-T Recommendation Q.1208

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION Q.1208

GENERAL ASPECTS OF THE INTELLIGENT NETWORK APPLICATION PROTOCOL

Summary

The objective of this Recommendation is to specify the definition methodology to be applied to the Intelligent Network application protocol Recommendations defined in specific capability sets. This Recommendation is not expected to change greatly in future versions with the possible exception of additional specification mechanisms.

Associated standardization work is contained in all of the Q.12xx IN Recommendations and more particularly in the Q.12x8 INAP Recommendations.

Source

ITU-T Recommendation Q.1208 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.

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

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 Q.1208

GENERAL ASPECTS OF THE INTELLIGENT NETWORK APPLICATION PROTOCOL

(revised in 1997)

1 Introduction

This Recommendation defines the general aspects of the interfaces and protocols. For the detailed protocols and interfaces supported in each capability set, refer to the Q.12x8 Recommendation for that capability set.

2 Background

All the work on interface specifications is based on the IN Functional Model (INFM). Each capability set will support a number of the interfaces defined in that model appropriate to the requirements placed upon that capability set.

3 Definition methodology

The definition of the protocol can be split into three sections:

– the definition of the service which the protocol provides (primitives etc.);

– the definition of the operations transferred between entities;

– the definition of the actions taken at each entity as a result of performing the operations.

The primitives are defined in a tabular notation and may be omitted. The operation definitions are in Abstract Syntax Notation 1 (ASN.1, see Recommendation X.680. The actions are defined in terms of state transition diagrams. Other definition techniques may be used in future capability sets to supplement or replace these if this seems appropriate.

The INAP is a ROSE user protocol (see Recommendation X.219/X.229). The ROSE protocol is contained within the component sublayer of TCAP (see Recommendations Q.771 to Q.775) and DSS 1 (Recommendation Q.932). At present the ROSE APDUs are conveyed in transaction sublayer messages in SS No. 7 and in the Q.931 REGISTER, FACILITY and call control messages in DSS 1. Other supporting protocols may be added at a later date.

The INAP (as a ROSE user) and the ROSE protocol have been specified using ASN.1. At present, the only standardized way to encode the resulting PDUs is the basic encoding rules (see Recommendation X.690). The protocols should be defined in such a way that the functional entities defined in the INFM may be mapped into physical entities in any way that operators and manufacturers desire.

4 Evolutionary requirements

The use of the application context negotiation mechanism (as defined in the Q.77x-Series Recommendations) allows the two communicating entities to identify exactly what their capabilities (and therefore the capabilities required on the interface) are. Where possible, this should be used to allow evolution through capability sets.

Capability sets should always be defined as supersets of previous capability sets to ensure successful interworking with previous capability sets is possible. This may not apply where errors are found in previous capability sets.

4.1 Rules for adding new parameters to INAP

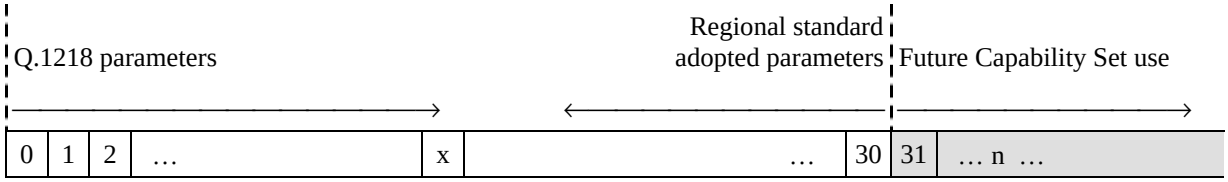
The objective of the rules is to achieve alignment and to avoid clashes between ITU-T CS-x and implementations based upon the regional standards that emanated from earlier versions of CS-x Recommendations. For network-specific parameters which are included in the Recommendations, context specific tags will be used. Rules for context specific tagging are:

1) Originally defined Q.12x8 tag values shall be maintained in subsequent capability sets.

2) In case parameters are removed from a defined Q.12x8, the corresponding tag values remain reserved.

3) In case a regional defined parameter is adopted by the ITU-T, the regional defined tag values are also considered.

4) The following structure for tag value allocation shall be used:



When a new data type is to be added to an existing sequence of data types with an extension marker (…) and the new data type can be ignored when the receiving system is an implementation of an older INAP version, the new data type shall be added at the end of the sequence, after the extension marker. When the new data type cannot be ignored, the new data type shall be positioned before the extension marker, before the last mandatory parameter. The ITU-T shall allocate tag values starting from 0 upwards (as shown above). Regional bodies may then use tag values from 30 downwards for their additions to the Q.12x8 Recommendation. If the ITU-T adopts a parameter for INAP from such a regional standard, the tag value will also be adopted, in order to ensure compatibility. When all tag values from 0 to 30 have been allocated between Q.12x8 and regional standards, tag allocation by the ITU-T will continue from 31 upwards.

4.2 Rules/guidelines for development of IN call party handling

The information used to synchronize the SSF and SCF with the Connection View State should be as generic as possible, to allow flexibility. Allowing different operators to support differing transitions and priorities for feature interactions, thereby enabling competition. The IFs and IEs should specify the modified use of Legs and Call Segments by LegID and Call Segment ID. This also applies to commands initiated by the SCF, both bidirectional (class 1) and unidirectional (class 2) messages.

These requirements also provide a flexible view to evolve to the IN/B-ISDN requirements being developed by the ITU-T, where the addition and removal of parties and bearers should be completely flexible.

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