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OF ITU

Q.812

Amendment 1
(03/99)

SERIES Q: SWITCHING AND SIGNALLING

Specifications of Signalling System No. 7 – Q3 interface

Upper layer protocol profiles for the Q3 and X interfaces

Amendment 1: Additional X interface protocols for the service management layer (SML)

ITU-T Recommendation Q.812 – Amendment 1

(Previously CCITT Recommendation)

ITU-T Q-SERIES RECOMMENDATIONS

SWITCHING AND SIGNALLING

SIGNALLING IN THE INTERNATIONAL MANUAL SERVICE	Q.1–Q.3
INTERNATIONAL AUTOMATIC AND SEMI-AUTOMATIC WORKING	Q.4–Q.59
FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN	Q.60–Q.99
CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS	Q.100–Q.119
SPECIFICATIONS OF SIGNALLING SYSTEMS No. 4 AND No. 5	Q.120–Q.249
SPECIFICATIONS OF SIGNALLING SYSTEM No. 6	Q.250–Q.309
SPECIFICATIONS OF SIGNALLING SYSTEM R1	Q.310–Q.399
SPECIFICATIONS OF SIGNALLING SYSTEM R2	Q.400–Q.499
DIGITAL EXCHANGES	Q.500–Q.599
INTERWORKING OF SIGNALLING SYSTEMS	Q.600–Q.699
SPECIFICATIONS OF SIGNALLING SYSTEM No. 7	Q.700–Q.849
General	Q.700
Message transfer part (MTP)	Q.701–Q.709
Signalling connection control part (SCCP)	Q.711–Q.719
Telephone user part (TUP)	Q.720–Q.729
ISDN supplementary services	Q.730–Q.739
Data user part	Q.740–Q.749
Signalling System No. 7 management	Q.750–Q.759
ISDN user part	Q.760–Q.769
Transaction capabilities application part	Q.770–Q.779
Test specification	Q.780–Q.799
Q3 interface	**Q.800–Q.849**
DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1	Q.850–Q.999
PUBLIC LAND MOBILE NETWORK	Q.1000–Q.1099
INTERWORKING WITH SATELLITE MOBILE SYSTEMS	Q.1100–Q.1199
INTELLIGENT NETWORK	Q.1200–Q.1999
BROADBAND ISDN	Q.2000–Q.2999

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

ITU-T RECOMMENDATION Q.812

UPPER LAYER PROTOCOL PROFILES FOR THE Q3 AND X INTERFACES

AMENDMENT 1

Additional X interface protocols for the service management layer (SML)

Source

Amendment 1 to ITU-T Recommendation Q.812, was prepared by ITU-T Study Group 4 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 26th of March 1999.

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 term *recognized operating agency (ROA)* includes any individual, company, corporation or governmental organization that operates a public correspondence service. The terms *Administration, ROA* and *public correspondence* are defined in the *Constitution of the ITU (Geneva, 1992)*.

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 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.

Recommendation Q.812

UPPER LAYER PROTOCOL PROFILES FOR THE Q3 AND X INTERFACES

AMENDMENT 1

Additional X interface protocols for the service management layer (SML)

(Geneva, 1999)

1) Add the following subclause to the formal references clause:

1.2.1 Publicly available specification references

All references in this subclause were correct at the time of approval of this Recommendation. The provisions of the referenced specifications, as identified in this subclause, are valid within the context of this Recommendation. The reference to a specification within this Recommendation does not give it any further status within ITU-T; in particular, it does not give the referenced specification the status of a Recommendation.

– CORBA GIOP Specification, Chapter 15 of *The Common Object Request Broker: Architecture and Specification*, Revision 2.3, Object Management Group (OMG Doc. Number: Formal/98-12-01).

– CORBA Security Service Specification, Chapter 15 of *CORBAservices: Common Object Services Specification*, Object Management Group (OMG Doc. Number: Formal/98-12-17).

2) Add the following new clause 7:

7 Protocol profile for CORBA-based services

7.1 Scope of CORBA protocol profile

TMN applications that have X interface definitions for use at the service management layer, specified using ODP IDL (Recommendation X.920), shall interoperate according to the provisions of this CORBA protocol profile.

Other uses of this profile are for further study.

7.2 Overview of profile for CORBA-based services

Figure 4 illustrates the protocol stack for the profile for CORBA-based services.

TMN services which have object-oriented interfaces specified using ODP IDL (Recommendation X.920) may be accessed through use of this profile.

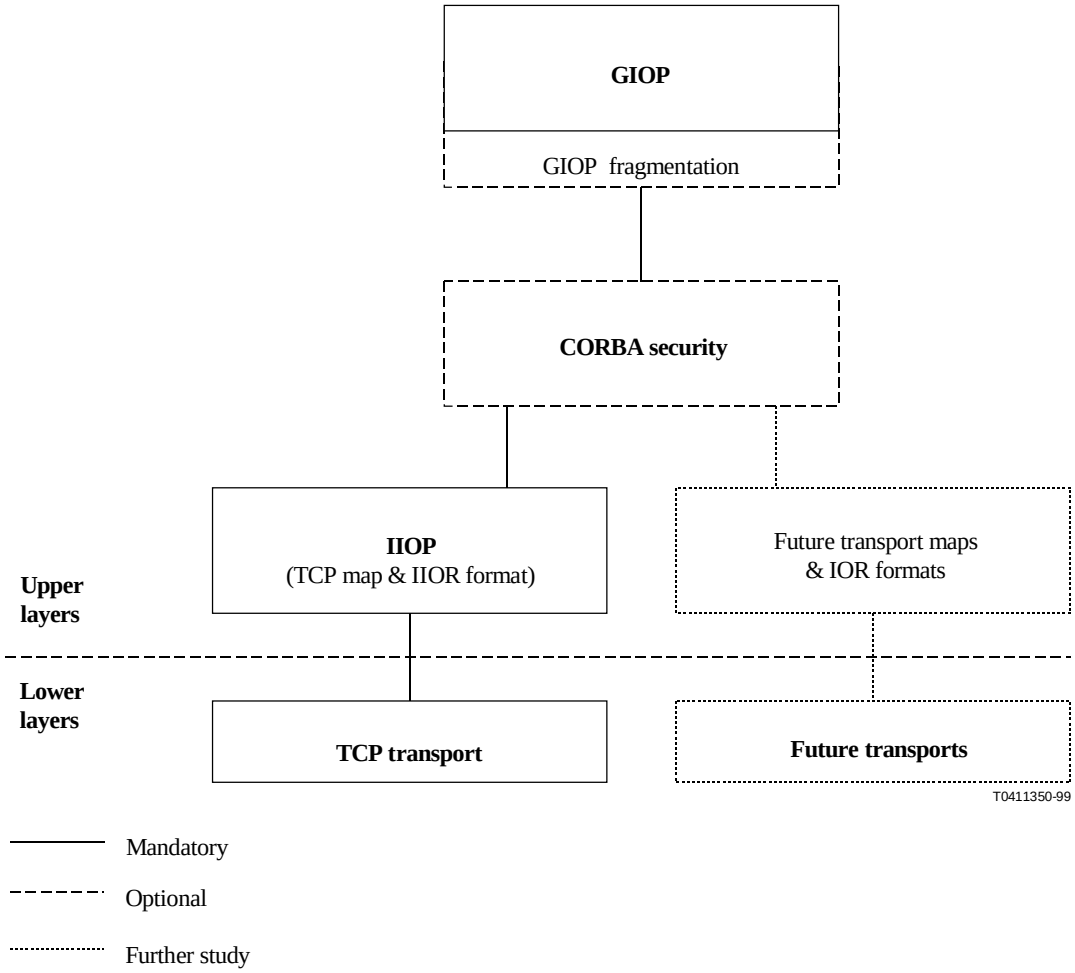

Figure 4/Q.812 – GIOP upper layer CORBA-based services protocol stack

To support CSI level 1 and above, the SECIOP protocol must be used within this profile. For support of CSI level 0, CORBA Security SSL Interoperability may be used as an alternative to SECIOP within this profile. Systems which support CORBA security must also support the IIOR profile version 1.1 format.

If application fragmentation is required, then GIOP version 1.1 or later must be used within this profile.

Mappings of GIOP onto transports other than TCP is for further study.

NOTE – GIOP mappings to transport profiles require the specification of an Interoperable Object Reference (IOR) profile format, associated with that transport profile, as well as the specification of how binding services of the transport profile are used.

7.3 Service definition

Services which use CORBA must have object-oriented interfaces specified using OMG IDL (Recommendation X.920).

NOTE – CORBA-based systems may use standard programming language bindings to access CORBA objects.

7.4 GIOP protocol specification

GIOP versions 1.0, 1.1 and 1.2 are to be implemented as specified in [CORBA GIOP Specification]. All systems which act as CORBA servers must support at least GIOP 1.0.

Servers which support GIOP versions 1.1 or 1.2 must also support processing messages with all previous GIOP versions.

7.5 Secure IOP protocol specification

All systems which require use of CORBA security services must support GIOP version 1.1 or later.

All systems which require use of CORBA security must support either the "Secure IOP protocol", or "CORBASecurity SSL Interoperability", as defined in [CORBA Security Service Specification].

7.6 IIOP protocol specification

For interoperability, all CORBA systems shall support the IIOP mapping protocol of GIOP onto TCP/IP lower layer services, as specified in [CORBA GIOP Specification].

Servers shall indicate their support of GIOP through publishing Interoperable Object References (IOR) which include an Internet IOR (IIOR) profile with IIOP profile version set to the highest level of GIOP protocol version supported by the system acting as server. The IIOR profile format is as specified in [CORBA GIOP Specification].

7.7 TCP/IP protocol profile for use with IIOP

IIOP is designed to be used with TCP/IP-based lower layer protocols.

This subclause defines a protocol profile for use as TMN lower layer protocols for CORBA-based systems using IIOP. This profile is based on the use of Internet protocols defined by the Internet Architecture Board (IAB). The way these documents can be referenced in this Recommendation is for further study. The protocol stack uses the following:

- For Layer 4 – STD0007 "Transmission Control Protocol", Postel [J.] September 1981. (Includes RFC0793.)
- For Layer 3 – STD0005 "Internet Protocol", Postel [J.] September 1981. (Includes RFC0791, RFC0950, RFC0919, RFC0922, RFC792, RFC1112.) In addition, when larger addresses are required, RFC1752 (reference RFC1752 "The Recommendation for the IP Next Generation Protocol", January 1995) and RFC1883 (reference RFC1883 "IPV6 Specification") may be used.
- The lower layers are not specified.

This lower layer protocol stack cannot support general OSI upper layer protocol profiles, since it does not have mapping to OSI transport service.

Other lower layer protocol mappings for GIOP are for further study.

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Series D	General tariff principles
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