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SERIES Q: SWITCHING AND SIGNALLING

Specifications of signalling related to Bearer Independent Call Control (BICC)

Bearer Independent Call Control protocol (Capability Set 2): Exceptions to the application transport mechanism in the context of BICC

ITU-T Recommendation Q.1902.5

(Formerly CCITT Recommendation)

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ITU-T Recommendation Q.1902.5

Bearer Independent Call Control protocol (Capability Set 2): Exceptions to the application transport mechanism in the context of BICC

Summary

This Recommendation describes exceptions to ITU-T Q.765, *Signalling System No. 7 – Application transport mechanism,* in the context of bearer independent call control, see ITU-T Q.1902.1, *Bearer Independent Call Control Protocol (Capability Set 2):Functional description.*

Source

ITU-T Recommendation Q.1902.5 was prepared by ITU-T Study Group 11 (2001-2004) and approved under the WTSA Resolution 1 procedure on 2 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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As of the date of approval of this Recommendation, 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.

CONTENTS

ITU-T Recommendation Q.1902.5

Bearer Independent Call Control protocol (Capability Set 2): Exceptions to the application transport mechanism in the context of BICC

1 Scope

This Recommendation describes exceptions to ITU-T Q.765, *Signalling System No. 7 – Application transport mechanism* [1], in the context of bearer independent call control, see Recommendation Q.1902.1, *Bearer Independent Call Control protocol (Capability Set 2): Functional description [2]*.

2 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 revisions; 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.765 (2000), *Signalling System No. 7 – Application transport mechanism.*

[2] ITU-T Q.1902.1 (2001), *Bearer Independent Call Control protocol (Capability Set 2): Functional description.*

[3] ITU-T Q.1902.3 (2001), *Bearer Independent Call Control protocol (Capability Set 2) and Signalling System No. 7 ISDN User Part: Formats and codes.*

[4] ITU-T Q.1902.4 (2001), *Bearer Independent Call Control protocol (Capability Set 2) Basic call procedures.*

[5] ITU-T Q.2150.0 (2001), *Generic Signalling Transport Service.*

[6] ITU-T Q.2150.1 (2001), *Signalling Transport Converter on MTP3 and MTP3b.*

[7] ITU-T Q.2150.2 (2001), *Signalling Transport Converter on SSCOP and SSCOPMCE.*

[8] ITU-T Q.2150.3 (2001), *Signalling Transport Converter on SCTP.*

3 Definitions

See ITU-T Q.765 [1] and ITU-T Q.1902.1 [2].

4 Abbreviations

This Recommendation uses the following abbreviations:

AEI Application Entity Invocation

APM Application Transport Mechanism

ASE Application Service Element

BAT Bearer Association Transport

BICC Bearer Independent Call Control

CSF Call Service Function

EH Errors Handling

ISUP ISDN User Part

MTP Message Transfer Part

NI Network Interface

SACF Single Association Control Function

SAO Single Association Object

STC Signalling Transport Converter

5 Conventions

See ITU-T Q.1902.1 [2], clause 5 Conventions.

6 Exceptions to ITU-T Q.765

ITU-T Q.765 [1] applies with the following exceptions.

The reference to Signalling System No. 7 in the title is not relevant. Where the text refers to ISUP this shall be interpreted to mean BICC.

The subsequent subclause numbers (after the dash) within this clause correspond to the numbering within ITU-T Q.765 [1].

6 – 6.2.2 General model

BICC is an adaptation of the narrow-band ISUP protocol for use in a bearer and message transport independent environment. It thus includes significantly different procedures for basic call control, compared to ISUP. It also includes an APM User for the transport of BICC specific information between peer BICC entities.

The generalized model for the ISUP Application Transport Mechanism Application Process is presented in Figure 2/Q.765 [1].

In this model, the application logic for the APM users are considered to be within the Nodal functions (Application Process).

ISUP basic call Recommendation (ITU-T Q.764) includes specification of ISUP signalling procedures and nodal functions (Application Process functions) in a monolithic way, i.e. the partitioning of functionality between the ISUP ASE and ISUP Nodal functions is not defined. ITU-T Q.765 [1] also does not define the functionality split for ISUP basic call.

The model from Figure 2/Q.765 [1] applied on the BICC basic call is shown in Figure 1.

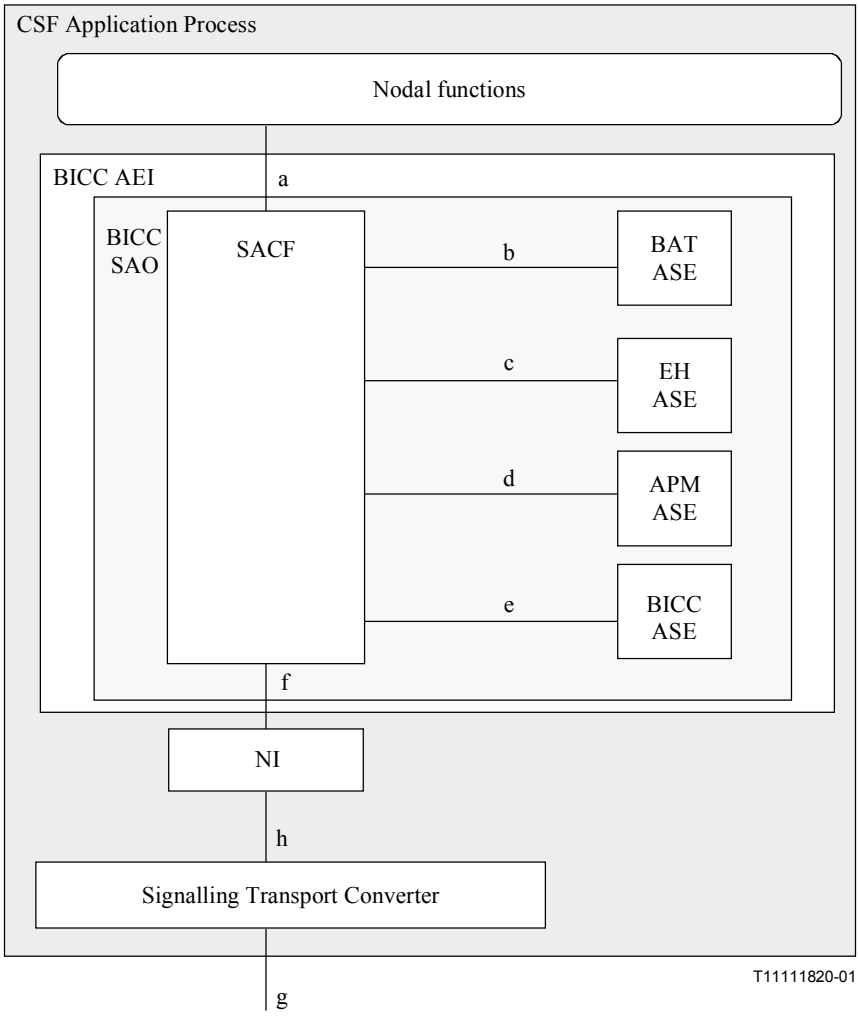

Figure 1/Q.1902.5 – BICC specification model

In this model the BAT ASE is introduced to provide the transport for the BICC data, and the ISUP ASE has been replaced by a BICC ASE. It should be noted that there is still no definition of the split of functionality between the BICC ASE and the Nodal functions. The replacement of the ISUP ASE by the BICC ASE just signifies that the BICC signalling is not the same as ISUP signalling. The BICC procedures, insofar as they are the user of the BAT ASE, should be considered as a part of the Nodal functions (in order to conform with the model expected in ITU-T Q.765 [1]). The BICC procedures thus access the service provided by the BAT ASE by using the BICC_Data primitive at interface a.

The BICC procedures indicated by the BICC procedures block in Figure 4/Q.1902.1 [2], and described in ITU-T Q.1902.4 [4], correspond to the composite of the BICC Nodal functions, (as a BAT ASE user), and the BICC ASE. No attempt is made to provide distinct descriptions of these two modelling entities.

The interface h is the BICC Signalling Transport Service primitive interface as specified in ITU-T Q.2150.0 [5] while interface g is the specific signalling transport service (see ITU-T Q.2150.X-series of Recommendations, e.g. [6], [7], [8]), and, in case of MTP-3 signalling transport, is the same as described in ITU-T Q.765 [1].

6 – 10.2.1 Normal procedures – Sending

Clause 10.2.1/Q.765 [1] states that the 272 octet limit of the MTP is the reason that would cause APM segmentation to be invoked. This statement is applicable to BICC if the START-INFO.indication primitive received from the STC, see ITU-T Q.2150.0 [5], indicates that the underlying message transport mechanism can transport only 272 octets. However, if the transport can support greater than 272 octets then APM segmentation is only applicable if the BICC application information exceeds the 255 octet limit imposed by the parameter formatting rules of ITU-T Q.1902.3 [3].

6 – 12 Network interface function

Clause 12/Q.765 [1] applies with the following exceptions:

1) When the text refers to MTP it shall be interpreted to mean the actual signalling transport.
2) When the text refers to CIC it shall be interpreted to mean Call Instance Code.
3) When the text refers to ITU-T Q.763, it shall be interpreted to be a reference to ITU-T Q.1902.3 [3].
4) When the text refers to ITU-T Q.764, it shall be interpreted to be a reference to ITU-T Q.1902.4 [4].
5) There is one instance of signalling transport converter per signalling route, and thus the distribution function performed by the NI acts only upon the CIC value. When the signalling transport is MTP the OPC, DPC, SIO and SLS are handled within the MTP3/MTP3b signalling transport converter as described in ITU-T Q.2150.1 [6].
6) Primitive interface g shall be replaced by the primitive interface as described in the Q.2150.x-series of Recommendations (e.g. [6], [7], [8]).

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