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SERIES Q: SWITCHING AND SIGNALLING

Broadband ISDN – B-ISDN application protocols for
access signalling

**Digital subscriber Signalling System No. 2 –
Generic identifier transport**

ITU-T Recommendation Q.2941.1

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION Q.2941.1

DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 2 – GENERIC IDENTIFIER TRANSPORT

Summary

This Recommendation describes the DSS 2 generic identifier transport capability. This capability allows the transport through the B-ISDN of identifiers required and used by various distributed applications.

This Recommendation is applicable to equipment, supporting DSS 2 signalling capabilities as defined, in particular, in Recommendations Q.2931 [1] and Q.2971 [2], attached at either side of a T_B reference point or coincident S_B and T_B reference point when used as an access to the public B-ISDN.

This DSS 2 signalling capability allows to carry identifiers between a call originating entity (e.g. a calling user) and an addressed entity (e.g. a remote user, or an interworking unit or a high layer function node addressed by the calling user). The identifiers are transmitted unchanged through the network and they are used by various distributed applications.

This signalling capability is a means of end-to-end signalling using identifiers having a specific purpose which the network can optionally access but not change. In some cases the network may create an identifier on behalf of the user or at its request.

Source

ITU-T Recommendation Q.2941.1 was prepared 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

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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, 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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DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 2 – GENERIC IDENTIFIER TRANSPORT

(Geneva, 1997)

1 Scope

This Recommendation specifies the generic identifier transport signalling capability for the Broadband Integrated Services Digital Network (B-ISDN) by means of the Digital Subscriber Signalling System No. 2 (DSS 2) protocol. This capability allows to carry identifiers unchanged between a call originating entity (e.g. a calling user) and the addressed entity (e.g. a remote user, or an interworking unit or a high layer function node addressed by the calling user).

This Recommendation is part of the DSS 2 family of ITU-T Recommendations; it specifies extensions to Recommendations Q.2931 [1] and Q.2971 [2] and does not repeat states, information elements, messages and procedures contained therein, but only specifies extensions related to the use of the Generic identifier information element.

This Recommendation is applicable to equipment, supporting DSS 2 signalling capabilities as defined, in particular, in Recommendations Q.2931 [1] and Q.2971 [2], attached at either side of a T_B reference point or coincident S_B and T_B reference point when used as an access to the public B-ISDN.

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 revision; all 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 Recommendation Q.2931 (1995), *Digital subscriber Signalling System No. 2 – User-Network Interface (UNI) layer 3 specification for basic call/connection control.*
- [2] ITU-T Recommendation Q.2971 (1995), *Digital subscriber Signalling System No. 2 – User-network interface layer 3 specification for point-to-multipoint call/connection control.*
- [3] ITU-T Recommendation H.245 (1996), *Control protocol for multimedia communication.*
- [4] ISO/IEC DIS 13818-6, *Information technology – Generic coding of moving pictures and associated audio information – Part 6: Extensions for digital storage media command and control.*
- [5] ITU-T Recommendation H.310 (1996), *Broadband audiovisual communication systems and terminals.*

3 Definitions

No new definitions are required.

4 Abbreviations

This Recommendation uses the following abbreviations:

DSM-CC	Digital Storage Media – Command and Control
GIT	Generic Identifier Transport

5 Description

The Generic Identifier Transport (GIT) signalling capability allows the generation and transport across the B-ISDN identifiers used by different distributed applications. The generic identifier transport capability is a means of end-to-end signalling using identifiers having a specific purpose which the network can optionally access but not change.

6 Operation requirements

Some networks may provide this capability only by subscription to the calling and called users.

7 Primitives

No new primitives are required to support this capability.

8 Coding requirements

8.1 Messages

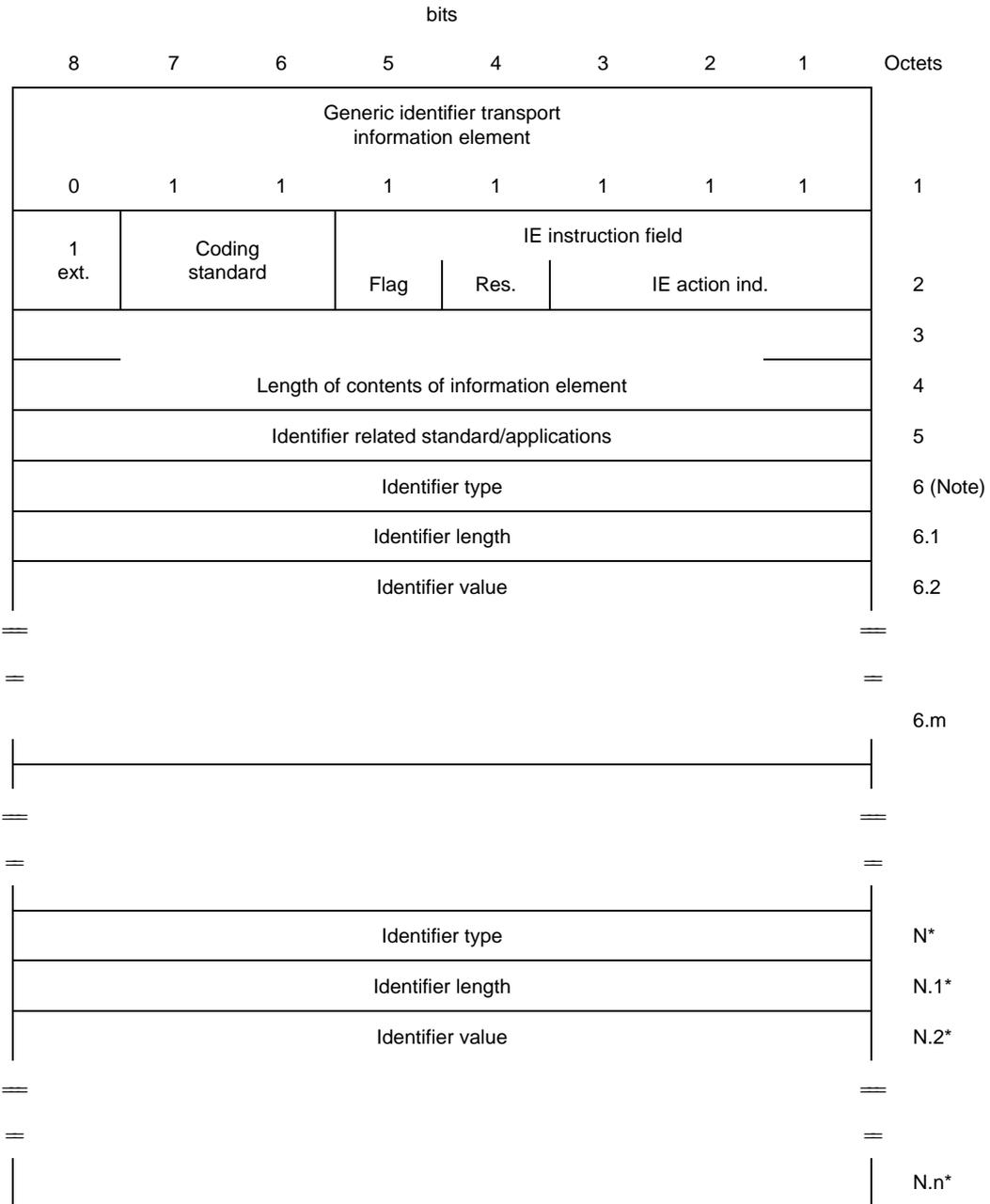
- The Generic identifier transport information element may be included in the following messages of global significance:
 - SETUP;
 - CONNECT;
 - ALERTING;
 - ADD PARTY;
 - PARTY ALERTING;
 - ADD PARTY ACK when the CONNECT message at the leaf interface is mapped into the ADD PARTY ACK message at the root interface;
 - ADD PARTY REJECT.
- It may be included in the RELEASE message and RELEASE COMPLETE if it is the first release message.
- It may be included in the DROP PARTY message and DROP PARTY ACK if it is the first message to drop a party.

8.2 Information element

The following additional DSS 2 information element is required to support the generic identifier transport capability.

8.2.1 Generic identifier transport information element

The Generic identifier transport information element is used to carry identifiers unchanged between a call originating entity (e.g. a calling user) and the addressed entity (e.g. a remote user, or an interworking unit or a high layer function node addressed by the calling user). The Generic identifier transport information element may be repeated in a message. The number of instances is limited to three and the maximum length is 33 octets. The Generic identifier transport information element is defined in Figure 1 and Table 1.



NOTE – Octet group 6 can be repeated to form new octet groups numbered sequentially octet group 7, 8, ..., N.

Figure 1/Q.2941.1 – Generic identifier transport information element

Table 1/Q.2941.1 – Generic identifier transport information element

<i>Identifier related standard/application (octet 5) (Note 1)</i>	
Bits	
<u>8 7 6 5 4 3 2 1</u>	
0 0 0 0 0 0 1	Digital Storage Media – Command and Control (DSM-CC) resourceId (ISO/IEC DIS 13818-6) (Note 2)
0 0 0 0 0 1 0	Recommendation H.310 (Note 3)
All other values are reserved.	
NOTE 1 – Each application requiring a different set/structure of identifiers (coded in octet group 6 and possibly in subsequent octet groups) should use the appropriate value in octet 5.	
NOTE 2 – When the identifier related standard/application field is coded as DSM-CC (ISO/IEC DIS 13818-6), an octet group specifies DSM-CC sessionId and another octet group specifies the resourceNum. The format is defined in ISO/IEC DIS 13818-6 [4].	
NOTE 3 – When the Identifier related standard/application field is coded as Recommendation H.310, octet group 6 contains H.310 CorrelationID as defined in Recommendation H.310 [5].	
<i>Identifier type, length and content (octet group 6 and possibly subsequent octet groups)</i>	
Octet group 6 is used to define an identifier or one part of an identifier composed of multiple parts. When an identifier is structured and consists of more than one part, octet group 6 contains one part of the identifier and each successive octet group starting with octet group 7 is used to code one additional part of the identifier.	
When an identifier consists of only one part, this part is coded integrally in octet group 6. When an identifier consists of multiple parts this Recommendation does not specify an order for usage of the octet groups starting with octet group 6. Some standards/applications using this Recommendation can specify an ordering of the octet groups, but this is not necessary because each octet group has its own identifier type coded in the first octet of the octet group.	
NOTE 4 – In the future additional parts may be added to an identifier defined for an existing application resulting in the addition of appropriate octet groups.	
<i>Identifier type (octet 6, 7, ..., N) (Note 5)</i>	
Bits	
<u>8 7 6 5 4 3 2 1</u>	
0 0 0 0 0 0 1	Session (Note 6)
0 0 0 0 0 1 0	Resource (Note 7)
All other values are reserved.	
NOTE 5 – The value coded in the identifier type field is independent of the identifier related standard/application field (octet 5). For example, when the identifier type field is coded as session "0000001", it refers to a session identifier regardless of the coding of octet 5. However, the format of the identifier value is dependent on the value specified in octet 5.	
NOTE 6 – When the identifier type is coded as session, a session identifier shall be coded in the identifier value field of the octet group. The maximum length is 20 octets.	
NOTE 7 – When the identifier type is coded as resource, a resource identifier shall be coded in the identifier value field of the octet group. The maximum length is 4 octets.	
<i>Identifier length:</i> A binary number indicating the length in octets of the identifier coded in the subsequent octets of the octet group.	
<i>Identifier value:</i> Value of an identifier coded according to the Recommendation or the Standard identified in octet 5.	

9 General procedures

This clause specifies general DSS 2 procedures for using the Generic identifier transport information element. These procedures are extensions to those specified in Recommendations Q.2931[1] and Q.2971 [2]. Depending on the identifier type coded in the Generic identifier transport information element, the user of this Recommendation may have to consult other relevant Recommendations or Standards specifying how to code an identifier in the Generic identifier transport information element.

9.1 Call/connection or add party establishment

In the call/connection or add party establishment message, the calling party may include one or more instances (up to the maximum) of the Generic identifier transport information element. The network shall deliver unchanged to the addressed entity the single or multiple instances of the Generic identifier transport information element received from the calling party.

In the first reply message listed in 8.1, the called party may include one or more instances of the Generic identifier transport information element. The network shall deliver unchanged to the calling party the single or multiple instances of the Generic identifier transport information element received from the called party.

9.2 Call/connection clearing party dropping or rejection

In the first call/connection clearing, party dropping or party rejection message listed in 8.1 and sent by a user, one or more instances (up to the maximum) of the Generic identifier transport information element may be included. The network shall deliver unchanged to the other user the single or multiple instances of the Generic identifier transport information element it has received.

9.3 Handling of exceptional conditions

This subclause specifies additional procedures to those defined in Recommendations Q.2931 [1] and Q.2971 [2] to handle exceptional conditions. The exceptional conditions address three cases:

- the use of the Generic identifier transport information element without prior subscription to the service;
- invalid contents of the Generic identifier transport information element;
- use of the Generic identifier transport information elements in an unexpected message.

Case 1: Use of the Generic identifier transport information element without prior subscription

If the following three conditions are met at the originating or destination UNI:

- 1) the network requires that its users subscribe to the generic identifier transport capability in order to process and deliver the Generic identifier transport information element to the other user;
- 2) the user has included a Generic identifier transport information element in a message listed in 8.1 and the message is valid in the current state of the call;
- 3) the user has not subscribed to the generic identifier transport capability,

the network shall treat the reception of the Generic identifier transport information element as an unexpected information element and shall apply the corresponding error handling procedures of Recommendation Q.2931 [1].

Case 2: Invalid contents of the Generic identifier transport information element

The network at both the originating and destination UNIs may optionally check the contents of the Generic identifier transport information element. If it is invalid (for example, unallocated code points are used), the network shall treat the Generic identifier information element as an information element with invalid contents and shall apply the corresponding error handling procedures of Recommendation Q.2931 [1].

Case 3: Use of the Generic identifier transport information elements in an unexpected message

If the user or the network includes the Generic identifier transport information element in a message not listed in 8.1, the entity receiving the message will treat the Generic identifier transport information element as an unexpected information element and shall apply the corresponding error handling procedures of Recommendation Q.2931 [1].

Appendix I

Examples of coding of the Generic identifier transport information element

I.1 Example of DSM-CC resourceId coding

When octet 5 of the Generic identifier transport information element is coded as DSM-CC (ISO/IEC DIS 13818-6) two octet groups follow. They include the sessionId value of DSM-CC in one octet group and the resourceNum value in another octet group. The details on DSM-CC resourceId can be found in ISO/IEC DIS 13818-6 [4]. Figure I.1 shows an example.

Identifier related standard/applications								5
0	0	0	0	0	0	0	1	
Session								6
0	0	0	0	0	0	0	1	
Identifier length								6.1
Identifier value								6.2
=====								
=====								
Resource								6.m
0	0	0	0	0	0	1	0	7*
Identifier length								7.1*
Identifier value								7.2*
=====								
=====								
								7.n*

Figure I.1/Q.2941.1 – Example of coding of the generic identifier transport information element for DSM-CC resourceId

I.2 Example of H.310 correlationID coding

When octet 5 of the Generic identifier transport information element is coded as Recommendation H.310, Recommendation H.245 ResourceId value is coded in one octet group. The details can be found in [3], [5]. Figure I.2 shows an example.

Identifier related standard/applications								
0	0	0	0	0	0	1	0	5
Resource								
0	0	0	0	0	0	1	0	6
Identifier length								6.1
Identifier value								6.2
=								
=								
								6.m

Figure I.2/Q.2941.1 – Example of coding of the portion of H.310 CorrelationID that contains H.245 ResourceId in the Generic identifier transport information element

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