## SECTION 3 - INTERWORKING BETWEEN DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1 AND SIGNALLING SYSTEM No. 7

#### Recommendation Q.699

# INTERWORKING BETWEEN THE DIGITAL SUBSCRIBER SIGNALLING SYSTEM LAYER 3 PROTOCOL AND THE SIGNALLING SYSTEM No. 7 ISDN USER PART

#### 1. General

#### 1.1 <u>Introduction</u>

This Recommendation defines the interworking relationship between the layer 3 functions and protocol of Digital Subscriber Signalling System No. 1 (DSS 1) and the ISDN User Part functions and protocol of Signalling System No. 7.

The interworking between the above two signalling protocols typically may occur in an ISDN local exchange and is specified in the context of a typical call in a pure ISDN or mixed ISDN/non-ISDN environment.

#### 1.2 <u>Purpose</u>

The purpose of the Recommendation is:

- a) to define how the layer 3 protocol of DSS 1 and Signalling System No. 7 ISDN User Part protocol should be used in combination with call control functions, to support the basic bearer service;
- b) to provide a logical bridge between the abstract signalling information flows, which are used in the description of ISDN services, and the corresponding messages and elements of procedure of the ISDN User-Network Interface User Part protocols.

#### 1.3 Scope

This Recommendation is aimed at defining the interworking relationship between the call control protocol of the Digital Subscriber Signalling

System No. 1 and the ISDN User Part of Signalling System No. 7.

The Recommendation defines in detail the relationship between signalling information conveyed via the Digital Subscriber Signalling System No. 1 protocol and similar signalling information conveyed via the ISDN User Part of Signalling System No. 7. The above relationship is described within the context of supporting the provision of basic bearer service for a call within an ISDN or mixed ISDN/non-ISDN environment.

#### 1.4 <u>Relationship to other Recommendations</u>

This Recommendation forms part of a set of interlocking ISDN service and signalling Recommendations. Other members of this set include the following:

- the operation of basic ISDN telephony teleservice and 64 kbit/s bearer service, which is supported in part via the interworking of the ISDN signalling systems described herein, is defined in detail in Recommendation Q. (basic service stage 2 description);
  - the signalling messages and elements of procedure of layer of the Digital Subscriber Signalling

System No. 1 and the ISDN User Part of Signalling System No. 7 are defined in Q.930/931 (I.450/451) and Recommendations Q.761- Q.764 and Q.766, respectively.

Recommendations

#### 2. <u>Methodology</u>

#### 2.1 General

This chapter describes the methodology used to model and define interworking between the ISDN User Part and layer 3 of Digital Subscriber Signalling System No. 1. The methodology is based on the layer service concepts prescribed by the Reference Model of Open System Interconnection (OSI) for CCITT Applications (Recommendation X.200) and uses the terms and conventions defined in Recommendation X.210 (OSI Layer Service Definition Conventions).

#### ANNEX B

(to Recommendation Q.699)

Usage of "Cause" in Recommendations Q.937, Q.763 and Q.730

#### B.1 Format

Format of Q.931 Cause information element or Q.763/Q.730 Cause indicators parameter <u>contents</u> is shown in Figure B-1/Q.699.

FIGURE B-1/Q.699

Format of "Cause"

- B.2 Codes used in the sub-field of the "Cause"
- B.2.1 Extension indicator (ext)

Bit

8

0 octet continues through the next octet (e.g. octet 1 to la)
1 last octet

#### B.2.2 Coding standard

Location B.2.3

Recommendation B.2.4

3	2 5	Cause	บลใ	ne

(2) The cause values are listed in Table B-1/Q.699 below.

## TABLE B-1/Q.699 (1 of 4)

### Cause values

Cause value   Cause   Cause   Recommendations   Class   Value   number	——————————————————————————————————————
765   4321	•
0 0 0   0 0 1 0   2.   No route to specified transit network   Q.931, Q.763   0 0 0   0 0 1 1   3.   No route to destination   Q.931, Q.763	
0 0 0   0 1 0 0   4.   Send special information tone   Q.763	
0 0 0   0 1 1 1   7.   Call awarded and being delivered in   Q.931   an established channel	<del> </del>
0 0 1   0 0 0 0   16.   Normal call clearing   Q.931, Q.763	
0 0 1   0 0 1 1   19.   No answer from user (user alerted)   Q.931, Q.763     0 0 1   0 1 0 1   21.   Call rejected   Q.931, Q.763	
0 0 1       0 1 1 0       22.       Number changed       Q.931, Q.763         0 0 1       1 0 1 0       26.       Non-selected user clearing       Q.931         0 0 1       1 0 1 1       27.       Destination out of order       Q.931, Q.763	
0 0 1   1 1 0 0   28.   Invalid number format     Q.931, Q.763	

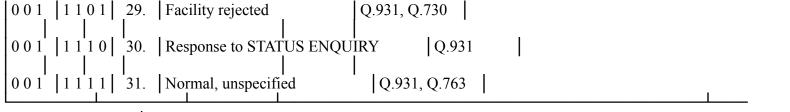
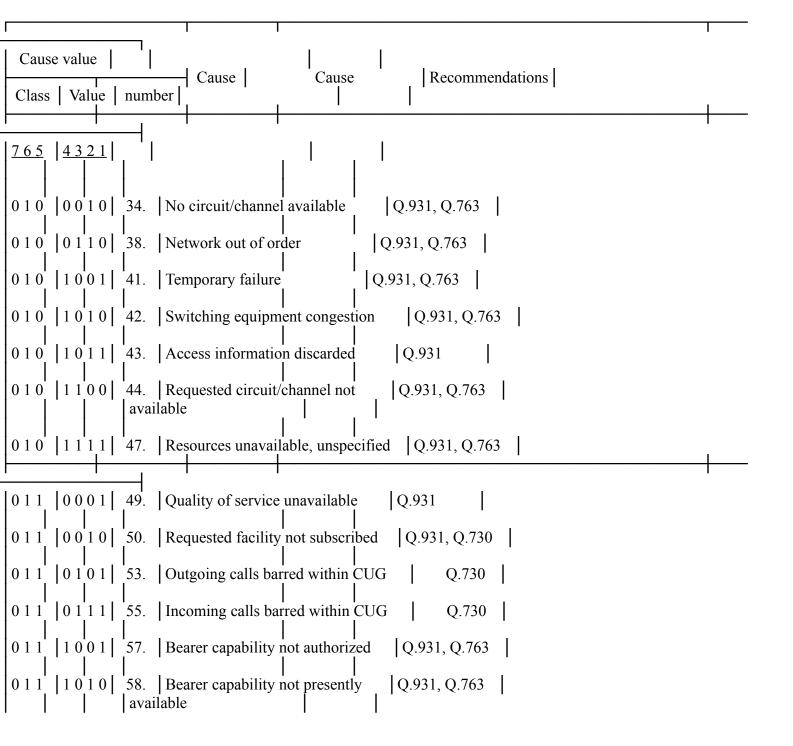


TABLE B-1/Q.699 (2 of 4)



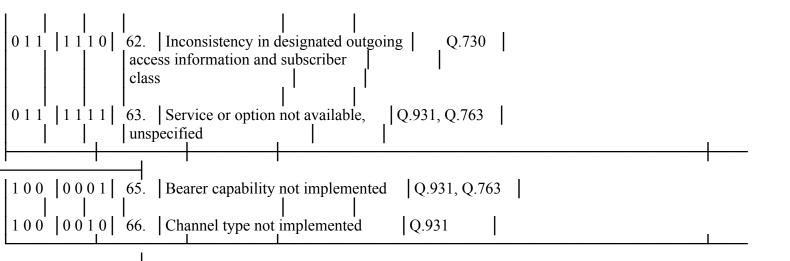
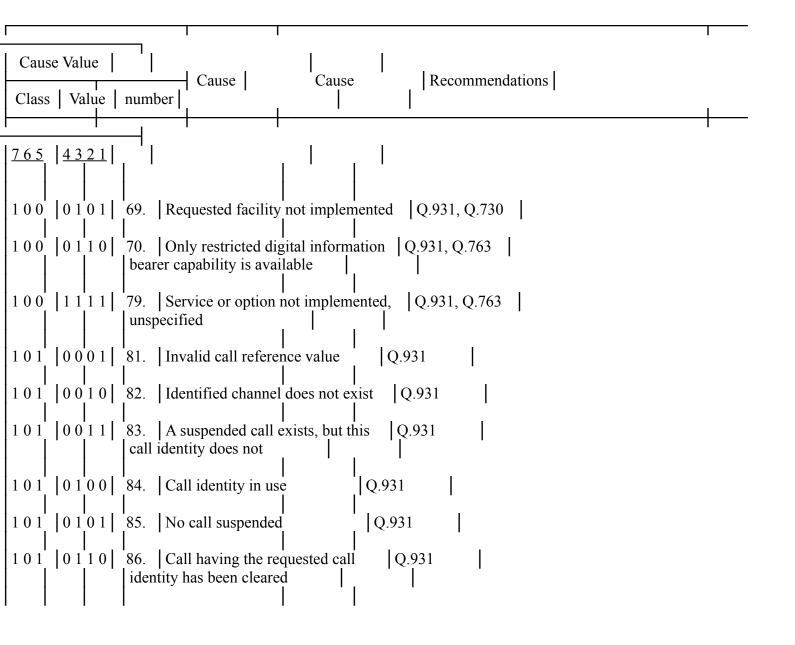
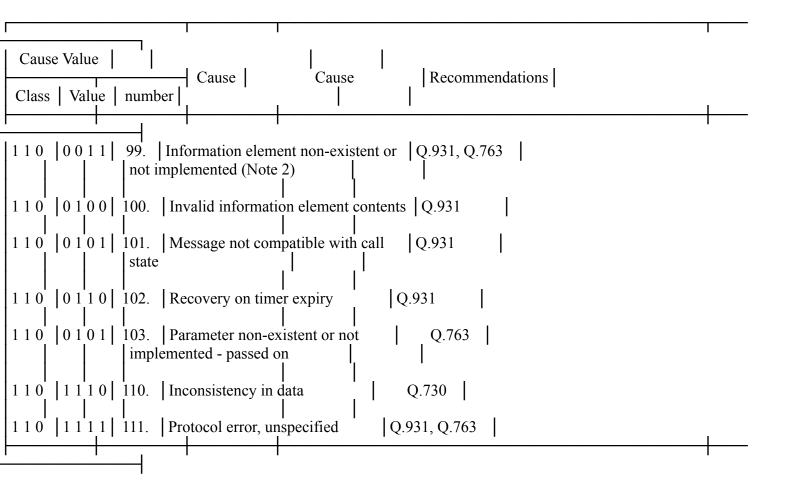


TABLE B-1/Q.699 (3 of 4)



1 0 1   0 1 1 1   87.   Called user not member of CUG   Q.730	
1 0 1   1 0 0 0   88.   Incompatible destination     Q.931, Q.763	
1 0 1   1 0 1 0   90.   Non-existent CUG   Q.730	
1 0 1   1 0 1 1   91.   Invalid transit network selection   Q.931, Q.763   (Note 1)	
1 0 1   1 1 1 1   95.   Invalid message, unspecified   Q.931, Q.763	ı
	I -
1 1 0   0 0 0 0   96.   Mandatory information element is   Q.931	
missing	
1 1 0   0 0 0 1   97.   Message type non-existent or not   Q.931, Q.763   implemented	
1 1 0 0 1 0 98.   Message not compatible with call   Q.931	
state or message type non-existent	
or not implemented	I

TABLE B-1/Q.699 (4 of 4)



	111   111	1   127.   I	nterworking, un	specified	Q.931, Q.763	I	I
ľ		i					

All other values are reserved.

Note 1 - In Recommendation Q.763, the words "(national use)" are added.

Note 2 - In Recommendation Q.763, the name of this cause value is "parameter non-existent or not implemented-discard". Further alignment of definition for this cause may be required.

#### Diagnostic(s)

2.6

Cause   Diagnostic(s)   Recommendations
2.   Transit Network identity   Q.931, Q.763
2.   Transit Network identity   Q.931, Q.763
2.   Transit Network identity   Q.931, Q.763
Condition (Note 1)
16. Condition (Note 1)       Q.931, Q.763           21. Condition (Note 1), User supplied diagnostics       Q.931, Q.763           22. New Destination [Q.931]/Called Party number (new)       Q.931, Q.763           [Q.763]                 29. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730                   [Q.763]                 43. Discarded information element identifier(s)       Q.931           49. Condition (Note 2)       Q.931           50. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730                   [Q.763]                 57. Attribute identity (Note 2)       Q.931, Q.763           58. Attribute identity (Note 2)       Q.931, Q.763           66. Channel type       Q.931           67. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730                   68. Channel identity       Q.931           88. Incompatible parameter [Q.931]         Q.931           96. Information element identifier       Q.931           97. Message Type       Q.931, Q.763
22.       New Destination [Q.931]/Called Party number (new)       Q.931, Q.763           [Q.763]                 29.       Facility identification [Q.931]/Rejected parameter   Q.931, Q.730             [Q.763]                 43.       Discarded information element identifier(s)   Q.931           49.       Condition (Note 2)   Q.931           50.       Facility identification [Q.931]/Rejected parameter   Q.931, Q.730             [Q.763]                     57.       Attribute identity (Note 2)   Q.931, Q.763           58.       Attribute identity (Note 2)   Q.931, Q.763           65.       Attribute identity (Note 2)   Q.931, Q.763           66.       Channel type   Q.931             [Q.763]                     82.       Channel identity   Q.931           86.       Clearing cause   Q.931           87.       Message Type   Q.931, Q.763
[Q.763]
29. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730     Q.763
Q.763
43. Discarded information element identifier(s)   Q.931   49. Condition (Note 2)   Q.931   50. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730     [Q.763]         57. Attribute identity (Note 2)   Q.931, Q.763   68. Attribute identity (Note 2)   Q.931, Q.763   69. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730     [Q.763]       82. Channel identity   Q.931   84. Clearing cause   Q.931   85. Incompatible parameter [Q.931]   Q.931, Q.763   86. Clearing cause   Q.931   87. Message Type   Q.931   Q.931   98. Information element identifier   Q.931   99. Message Type   Q.931, Q.763
49.   Condition (Note 2)   Q.931
50. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730   [Q.763]
[Q.763]
57. Attribute identity (Note 2)       Q.931, Q.763         58. Attribute identity (Note 2)       Q.931, Q.763         65. Attribute identity (Note 2)       Q.931, Q.763         66. Channel type       Q.931         69. Facility identification [Q.931]/Rejected parameter       Q.931, Q.730         [Q.763]                 82. Channel identity       Q.931         86. Clearing cause                 87. Incompatible parameter [Q.931]                 96. Information element identifier                 97. Message Type
58. Attribute identity (Note 2) 65. Attribute identity (Note 2) 66. Channel type 69. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730   [Q.763] 82. Channel identity 86. Clearing cause 87. Incompatible parameter [Q.931] 88. Incompatible parameter [Q.931] 89. Information element identifier 97. Message Type  Q.931, Q.763 Q.931, Q.763 Q.931, Q.763
65. Attribute identity (Note 2)  66. Channel type  69. Facility identification [Q.931]/Rejected parameter   Q.931, Q.730    [Q.763]  82. Channel identity  84. Clearing cause  85. Incompatible parameter [Q.931]  86. Information element identifier  97. Message Type  Q.931, Q.763    Q.931, Q.763    Q.931, Q.763    Q.931, Q.763    Q.931, Q.763
66.   Channel type
69. Facility identification [Q.931]/Rejected parameter Q.931, Q.730   [Q.763]
[Q.763]
82. Channel identity 86. Clearing cause 88. Incompatible parameter [Q.931] 96. Information element identifier 97. Message Type    Q.931     Q.931, Q.763
86.   Clearing cause   Q.931
88. Incompatible parameter [Q.931]   Q.931, Q.763   96. Information element identifier   Q.931   97. Message Type   Q.931, Q.763
96. Information element identifier   Q.931   97. Message Type   Q.931, Q.763
97. Message Type Q.931, Q.763
70.   Wessage Type   Q.751
99. Information element identifier(s) [Q.931]/Parameter   Q.931 Q.763
name(s) [Q.763]
100. Information element identifier(s) Q.931
101. Message type Q.931
102. Timer number Q.931
103.   Parameter name(s)   Q.763

## Note 1 - The following coding is used:

```
Bit 8: 1
Bit 7-3: 00000
Bit 2-1: Condition as follows:
00 - Unknown
01 - Permanent
10 - Transient.
```

Note 2 - The format of the diagnostic field for causes number 57, 58 and 65 is as shown in Figure B-2/Q.699 and

Table B-2a/Q.699 to B-2b/Q.699.

Note 3 - Description in [] indicates current difference in description among Recommendations Q.931 and Q.763. Further alignment may be required for those cause values, i.e., #22, #29, #50, #69 and #99.