



ATIS-1000619.a.1994(R2012)

**Integrated Services Digital Network (ISDN) – Multi-Level  
Precedence and Preemption (MLPP) Service Capability  
(MLPP Service Domain and Cause Value Changes)**

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## **ATIS-1000619.a.1994(R2012), Integrated Services Digital Network (ISDN) – Multi-Level Precedence (MLPP) Service Capability (MLPP Service Domain and Cause Value Changes)**

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# American National Standard

for telecommunications –

integrated services digital network (ISDN) –  
multi-level precedence and preemption (MLPP) service  
capability (MLPP service domain and cause value changes)

Approved July 12, 1994

Secretariat: Alliance for Telecommunications Industry Solutions

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## Introduction

This supplement to *American National Standard for Telecommunications – Integrated services digital network (ISDN) – Multi-level precedence and preemption (MLPP) service capability*, ANSI T1.619-1992, revises the standard so that the exchange-to-exchange signaling is consistent with ITU-T Recommendations Q.955.3 (1993) and Q.735.3 (1993), which were approved after the publication of ANSI T1.619-1992. The significant changes are in the following areas:

- The use of Cause value #45 with a location code of other than 0110 to indicate preemption without circuit reservation is changed to Cause value #8;
- The use of Cause value #45 with a location code of 0110 to indicate preemption with circuit reservation for reuse is changed to Cause value #9;
- Cause value #46 is in codeset 0 instead of codeset 5;
- The MLPP Service Domain code format is changed from a 7-bit field in the Precedence level information element (for DSS1) and in the Precedence parameter (for SS7) to a 3-octet parameter for both DSS1 and SS7;
- The MLPP Service Domain is prefixed with a 2-octet Network Identity (NI) in the Precedence level information element (for DSS1) and in the Precedence parameter (for SS7).

Some other minor errors are also corrected.

These changes result in a protocol that is incompatible with that which was described in ANSI T1.619-1992. Implementors of the protocol described in the original ANSI T1.619-1992 or of that

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described in this supplement should be aware of this incompatibility and are cautioned to determine the compatibility of interconnecting equipment.

Specifically, the following changes should be made to ANSI T1.619-1992:

*In clause 2, change references to the new editions as follows and delete footnote 1:*

*ANSI T1.113-1992, Telecommunications – Signaling system no. 7 (SS7) – Integrated services digital network (ISDN) user part*

*ANSI T1.114-1992, Telecommunications – Signaling system no. 7 (SS7) – Transaction capability application part (TCAP) user part*

*Add the following reference to clause 2:*

*ITU-T Recommendation Q.850 (1993), Usage of cause and location in the DSS1 and the SS7 ISDN user part*

Replace figure 1 with the following figure:

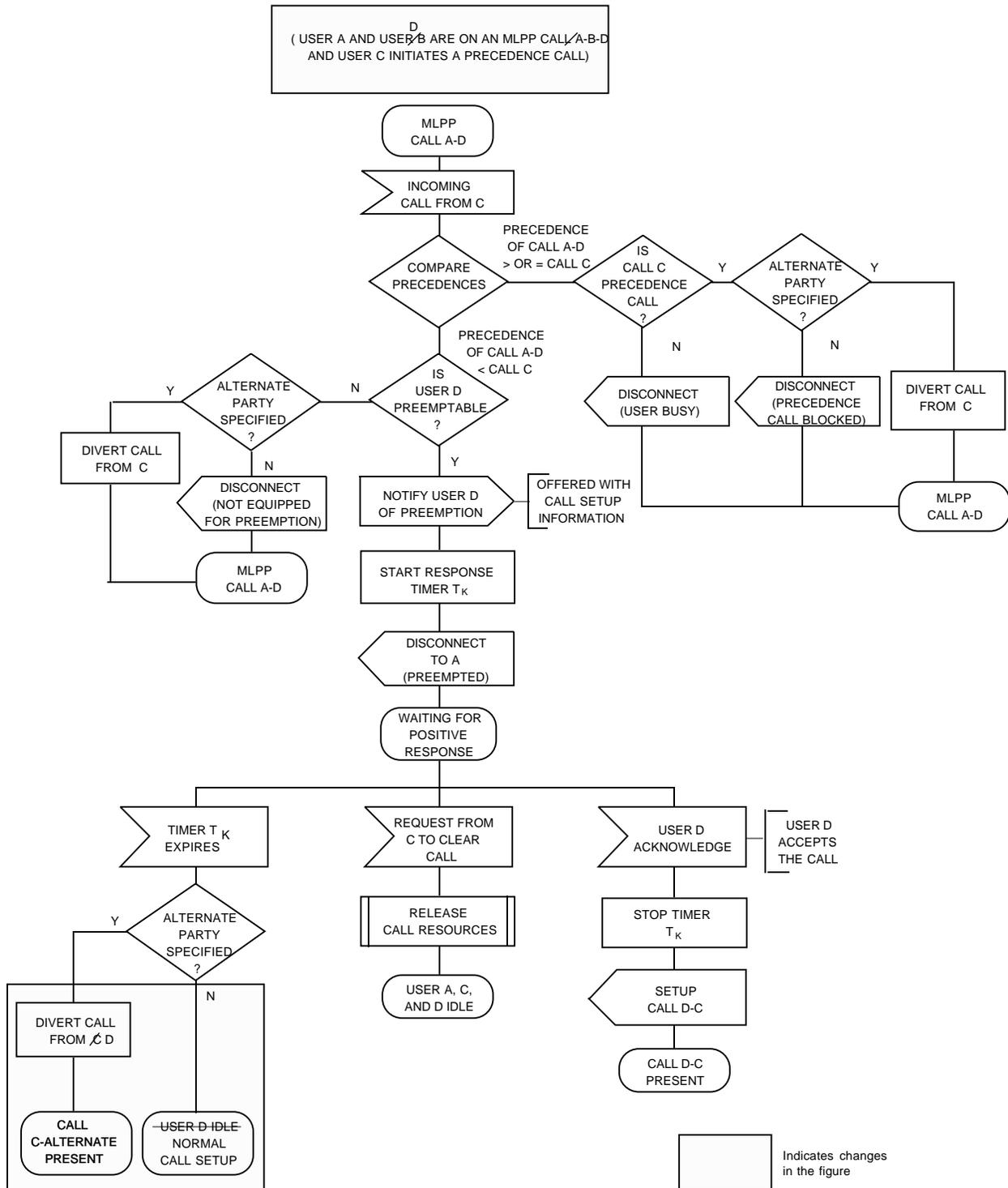


Figure 1 – SDL diagram of MLPP (preemption at the called user's interface)

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In figure 6, change all references to “B” to “D” (three places) and change the label “FE7” to “FE8”.

Replace subclause 6.1.2 with the following and delete footnote 2:

All information elements (IE), except the Precedence level IE, are in codeset 0. The Precedence level IE is in codeset 5. Signal value 66, contained in the Signal IE, is defined in ANSI T1.607. An additional meaning for this signal value 66, besides the one given in ANSI T1.607, is provided in informative annex D of this standard.

In the figure in subclause 6.1.3.1, replace the last octet currently labeled “4a,b,...” with the following octets and replace the statement immediately after the figure as given below:

1st NI digit	2nd NI digit	5
3rd NI digit	4th NI digit	6
Most significant bit		7
MLPP service domain		8
Least significant bit		9

The Precedence level IE identifier shall be in codeset 5.

At the end of subclause 6.1.3.1, replace the definition of octets 4a and 4b with the following:

Octets 5–6 (Network identity, NI)

Each digit is coded in a binary coded decimal representation from 0 to 9.

The first digit is coded 0. The Telephony Country Code (TCC) follows in the 2nd to the 4th NI digits (the most significant TCC digit is in the 2nd NI digit). If the TCC is one or two digits long, the excess digit(s) is inserted with the code for RPOA or network identification, if necessary. If octet 6 is not required, it is coded all zeros.

Octets 7–9 (MLPP Service Domain)

A code expressing in pure binary the number allocated to a national MLPP Service Domain to uniquely identify a customer domain across multiple ISDN networks. Bit 8 of octet 7 is the most significant bit and bit 1 of octet 9 is the least significant bit.

Replace subclause 6.1.3.3 with the following:

For indicating the preemption of the call in the network and in the access or the failure to preempt, the Cause IE, as described in 4.5.11 of ANSI T1.607, shall be used with the following ITU-T codepoints described in Q.850:

<u>Number</u>	<u>Cause</u>	<u>Meaning</u>
8	Preemption	Call is being preempted, circuit is not reserved for reuse
9	Preemption – circuit reserved for reuse	Call is being preempted, circuit is reserved for reuse
46	Precedence call blocked	No preemptable circuit or called user is busy with a call of equal or higher precedence level

*In subclause 6.1.3.7 (ASN.1), replace the last parameter “Notsubscribed” by “userNotSubscribed”.*

*In the first paragraph of subclause 6.2.1.1, replace:*

cause values: 45, “preemption” and...

*by:*

cause values 8, “preemption” and 9, “preemption – circuit reserved for reuse” and...

*In the second paragraph of subclause 6.2.1.1, replace:*

cause values: 45, “preemption” and...

*by:*

cause values 8, “preemption” and...

*and delete two occurrences of “US national” associated with cause values.*

*In subclause 6.2.5, change the reference to:*

cause 45 and 46

*to read:*

causes 8, 9, and 46.

*Change:*

Cause #45, Location =0 1 1 0

*used with the HOLD message in figures 10 and 11 to:*

Cause 8

*to align with the text.*

*Change the beginning of the last sentence in 6.2.6.1.1 c) 2) ii) C) from:*

An announcement 48 of...

*to:*

An announcement of...

*Change all occurrences of the text:*

cause 45, “preemption” (with location coded “0 1 1 0” to indicate that circuit is reserved for reuse or with location coded as “0 1 1 0”)

*to:*

cause 9, “preemption – circuit reserved for reuse”

*in the following places:*

6.2.6.1.1 c) 2) ii) C)

Figure 10 (two places)

6.2.6.1.2 b) 3)

6.2.6.1.3 b) 2) ii)

Figure 11 (two places)

6.3.2.4, 2nd paragraph

6.3.2.4.b)

*Change all occurrences of the text:*

cause 45, "preemption" (with location coded other than "0 1 1 0" to indicate that circuit is not reserved for reuse or with location coded as other than "0 1 1 0")

*to:*

cause 8, "preemption"

*in the following places:*

6.2.6.1.1 c) 2) ii) C)  
Figure 10 (four places)  
6.2.6.1.2 b) 3)  
6.2.6.1.3 b) 2) ii)  
Figure 11 (four places)  
6.3.2.4 b)

*Change all occurrences of:*

cause 45

*to:*

cause 8

*in the following places:*

6.2.6.1.1 f) 2nd sentence  
6.3.2.4 1st paragraph, last sentence  
Annex A, Figure A.3 (continued) (b) Procedures without DSS1 LFB query (in HOLD message)  
6.3.2.4 2nd paragraph, last sentence  
7.2.4 a)

*Replace text in subclause 6.2.6.1.3 b) 3) ii) A) I) with:*

I) If preemptable access resources exist, the existing MLPP call shall be cleared to the remote (to be preempted) user with a cause 8, the circuit to the called user shall be reserved with a HOLD message delivered to the called user with cause 8 (in order to notify the called user of intended preemption), and timer  $T_K$  is started. The HOLD message shall also contain the Call identity IE and Signal IE with signal value 9 so that a "preemption tone" may be applied to the called user. An announcement of "intended preemption" may also be provided to the called user. Then:

If the timer  $T_K$  expires before a HOLD ACK message, containing the Call identity IE, is received and an alternate party is subscribed to, the incoming (preempting) call shall be diverted to alternate party, using call forwarding procedures and the circuit reservation to the called user shall be canceled.

If the timer  $T_K$  expires before a HOLD ACK message is received and no alternate party is subscribed to, the setup shall be continued for the incoming (preempting) call, using a SETUP message and by employing the reserved circuit to the called user.

If the HOLD ACK message is received before the expiry of timer  $T_K$  (indicating acceptance of intended preemption), the setup shall be continued for the incoming (preempting) call, using a SETUP message and by employing the reserved circuit to the called user.

If a STATUS message is received in response to the HOLD message sent by the network indicating that the called user does not support the HOLD family of messages, the setup shall be continued for the incoming (preempting) call, using a SETUP message and by employing the reserved circuit to the called user (see 6.2.7).

In all cases above, the SETUP message shall contain the Call identity IE and Signal IE with signal value 66 so that a "precedence call alerting" may be provided to the called user;

Replace text in subclause 6.2.7 with:

a) If the called user does not support the HOLD family of messages, the user may return a STATUS message with cause 88, "message not compatible with call state or message type non-existent or not implemented," or cause 97, "message type non-existent or not implemented," in response to the HOLD message sent by the destination exchange. In this case, the setup shall be continued for the incoming (preempting) call, using a SETUP message and by employing the reserved circuit to the called user [see 6.2.6.1.3 b) 3) ii) A) I)].

b) If the incoming call is a precedence call, and if the called user is busy with a call of lower precedence, has preemptable access resources, and responds with a HOLD REJ message within response timer  $T_K$  to the HOLD message sent by the network, then the setup shall be continued for the incoming (preempting) call, using a SETUP message and by employing the reserved circuit to the called user [see 6.2.6.1.3 b) 3) ii) A) I)].

Change all occurrences of:

cause #45, "Preemption" indicating Circuit Reserved for Reuse

to:

cause 9, "Preemption – Circuit Reserved for Reuse

in the following places in annex A:

- Annex A, Figure A.1 (continued) (b) Procedures without DSS1 LFB query
- Annex A, Figure A.2 (continued) (b) Procedures without DSS1 LFB query
- Annex A, Figure A.3 (continued) (b) Procedures without DSS1 LFB query

Change all occurrences of:

cause #45, "Preemption" indicating Circuit Not Reserved for Reuse

to:

cause 8, "Preemption"

in the following places in annex A:

- Annex A, Figure A.1 (continued) (b) Procedures without DSS1 LFB query
- Annex A, Figure A.2 (continued) (b) Procedures without DSS1 LFB query
- Annex A, Figure A.3 (continued) (b) Procedures without DSS1 LFB query

Replace subclause 7.1.1.2.1 with the following:

The format of the precedence parameter is shown below. The subfields in the precedence parameter identify the precedence level, the network identification and domain, and whether a path has been reserved or path reservation is allowed.

	8	7	6	5	4	3	2	1
octet	spare	LFB		spare	Precedence Level			
1	1st NI digit		2nd NI digit					
2	3rd NI digit				4th NI digit			
3	Most significant bit							
4	MLPP Service Domain							
5	Least significant bit							
6								

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The following codes are used in the Precedence parameter subfields:

Octet 1

LFB

Bits	meaning
<u>7 6</u>	
0 0	LFB Allowed
1 0	LFB Not Allowed
0 1	Path reserved
1 1	spare

Precedence Level

Bits	meaning
<u>4 3 2 1</u>	
0 0 0 0	FLASH OVERRIDE (0)
0 0 0 1	FLASH (1)
0 0 1 0	IMMEDIATE (2)
0 0 1 1	PRIORITY (3)
0 1 0 0	ROUTINE (4)
0 1 0 1}	
to }	Spare
1 1 1 1}	

Octets 2–3 contain a code for Network identity (NI). Each digit is coded in binary coded decimal representation from 0 to 9. The first digit of this field is coded 0. The TCC (Telephony Country Code) follows in the second to fourth NI digits (the most significant TCC digit is in the 2nd NI digit). If the TCC is one or two digits long, the excess digit(s) is inserted with the code for RPOA or network identification, if necessary. If octet 3 is not required, it is coded all zeros.

Octets 4–6 contain a code expressing in pure binary representation the number allocated to an MLPP Service domain. These numbers are allocated from the set of National Business Group Identifier codes in accordance with the procedures in Annex B, in chapter T1.113.3 of ANSI T1.113.

Replace subclause 7.1.1.2.2 with the following:

The format of the cause indicator parameter field is shown in chapter T1.113.3 of ANSI T1.113. The following CCITT standard codes shall be used for the MLPP service:

Cause value bits	value	meaning
<u>7 6 5 4 3 2 1</u>		
0 0 0 1 0 0 0	(8)	preemption
0 0 0 1 0 0 1	(9)	preemption – circuit reserved for reuse
0 1 0 1 1 1 0	(46)	precedence call blocked

In subclause 7.1.2.1.1, specify the identifier values for the following parameters:

LookAheadForBusyResponse	::=[25] IMPLICIT OCTET STRING
CircuitIdentificationCode	::=[26] IMPLICIT OCTET STRING
Precedence	::=[27] IMPLICIT OCTET STRING
CallReference	::=[28] IMPLICIT OCTET STRING

In the first figure in subclause 7.1.2.2.1, add the values of bits H through A as follows:

H	G	F	E	D	C	B	A
1	0	0	1	1	0	0	1

**Look-ahead for busy response identifier**

After the first figure in subclause 7.1.2.2.1, replace:

The contents are coded as follows:

with the following:

The parameter is 1 octet in length and the contents are coded as follows:

octet 1	H	G	F	E	D	C	B	A
	Ack type		spare		Location			

In the figure showing the location codes in subclause 7.1.2.2.1, delete:

Local Interface controlled by this signaling link

and associated code:

“0 1 1 0.”

In subclause 7.1.2.2.2, delete footnote 3.

In the figure in subclause 7.1.2.2.5, add the values of bits H through A as follows:

H	G	F	E	D	C	B	A
1	0	0	1	1	0	1	0

**Circuit identification code identifier**

Replace subclause 7.1.2.2.6, with the following:

The precedence parameter is used to identify the MLPP call in terms of priority treatment and MLPP service domain.

H	G	F	E	D	C	B	A
1	0	0	1	1	0	1	1

**Precedence identifier**

The parameter is six octets in length and is of type OCTET STRING. The contents are coded as follows:

	H	G	F	E	D	C	B	A
Octet 1	spare				Precedence Level			
2	1st NI digit				2nd NI digit			
3	3rd NI digit				4th NI digit			
4	Most significant bit							
5	MLPP Service Domain							
6	Least significant bit							

Octet 1

Bits DCBA indicate the precedence level as given in 7.1.1.2.1

Octets 2 and 3

Contain the Network Identifier as defined in 7.1.1.2.1.

Octets 4–6

Contain the MLPP service domain as defined in 7.1.1.2.1.

*In the first figure in subclause 7.1.2.2.7, add the values of bits H through A as follows:*

H	G	F	E	D	C	B	A
1	0	0	1	1	1	0	0

**Call reference identifier**

*Change all occurrences of:*

standard cause 45 – “preemption”

*to:*

standard cause 9 – “preemption-circuit reserved for reuse”

*in the following places:*

7.2.3.3.1.1 a) 1) i)

7.2.3.3.1.1 b) 1) i)

7.2.3.3.1.1 c) 1) i)

*Change all occurrences of:*

cause 45

*to:*

cause 8

*in the following places:*

- 7.2.3.3.1 1 a) 2) i)
- 7.2.3.3.1.1 b) 1) second paragraph item ii) A)
- 7.2.3.3.1.1 b) 2) i)
- 7.2.3.3.1.1 b) 2) second paragraph item ii) A)
- 7.2.3.3.1.1 c) 2) i)
- 7.2.4 a)
- 8.1

*In subclause 7.2.3.3.1.1, delete all references to the use of the location subfield (item ii or B in each case).*

*In subclause 7.5, change the definition of "REL(R)" to:*

ISDN-UP REL with the standard cause value "Preemption-circuit reserved for reuse (9)."

*Change:*

CAUSE 45

*to:*

CAUSE 9

*and delete any reference to:*

Location 0 1 1 0

*in the following places in annex E:*

- Figure E.1 (b) release of resources, 1st block
- Figure E.2 (b) Release procedures, 1st sheet, 3rd block
- Figure E.2 (b) Release procedures, 2nd sheet, 1st block
- Figure E.3 (b) Release procedures, 1st sheet, 3rd block
- Figure E.3 (b) Release procedures, 2nd sheet, 2nd block

*In annex E, figure E.3 (b) Release Procedures, 2nd sheet, 4th block, change:*

CAUSE 45

*to:*

CAUSE 8