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CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS

STANDARD SENDING SEQUENCE OF FORWARD ADDRESS INFORMATION

ITU-T Recommendation Q.107

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.107 was published in Fascicle VI.1 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Recommendation Q.107

STANDARD SENDING SEQUENCE OF FORWARD ADDRESS INFORMATION

(Geneva, 1980; modified at Melbourne, 1988)

A distinction is made in this Recommendation between the information to be sent by the telephone user for different types of calls and the corresponding information to be sent by the international signalling equipment.

With regard to the latter, the sequence of forward address information signals is dealt with in detail. The detailed exchange of other signalling information is covered by the procedures described in the specifications of the CCITT signalling systems concerned.

1 Information to be sent by the telephone user

The normal sequence of address information required for the set-up of an international call and to be sent by the user, i.e. the calling subscriber or operator, is as shown in Table 1/Q.107. This sequence does not depend on the CCITT signalling system used in the international network. Here five different types of call, from *a)* to *e)* are covered.

TABLE 1/Q.107

Standard sequence of the address information to be sent by the telephone user

Type	Call to :	Address information sent by the user
a)	A subscriber (automatic)	1. International prefix [a)] 2. Country code [b)] 3. National (significant) number [c)]
b)	A subscriber (semi-automatic)	1. Country code [b),d)] 2. National (significant) number [c)] 3. Sending-finished
c)	Any incoming or delay operator's position (semi-automatic)	1. Country code [b),d)] 2. Extra digit designating the incoming international exchange [e)] 3. Code 11 or code 12 [f)] 4. Sending-finished
d)	An particular delay operator, or one of those operating a particular group of delay operator's positions (semi-automatic)	1. Country code [b), d)] 2. Extra digit designating the incoming international exchange [e)] 3. Code 12 [f)] 4. Number of a particular position or a group of positions 5. Sending-finished
e)	An information operator or a special service operator	1. Special numbers

a) The recommended international prefix is 00, see Recommendation Q. 11 *bis*, § 4.1.

b) The country code consists of one these digit combinations: I_1, I_1 I_2, I_1 I_2 I_3.

c) The national (significant) number consists of the subscriber number and the trunk code: N_1, N_2, N_3,... It does not contain the national (trunk) prefix (the preferred national prefix is 0 - see Recommendation Q.11 *bis* § 4.5.2). The subscriber using the

international automatic telephone network should be informed in an appropriate manner that the national prefix after the country code must not be sent.

d) If, in the case of semi-automatic calls, the language digit L = 1, 2, 3, . .. is not sent automatically by the outgoing signalling equipment, it has to be sent by the operator to the outgoing equipment. In this case, the operator must send the L digit immediately following the country code.

e) The extra digit (N_1) designating the incoming international exchange is used in cases where more than one incoming international exchange can be reached in the country of destination. (It is recognized that the existing design of some equipment does not permit the insertion of the extra digit.)

f) See Recommendation Q.101.

2 Sequence of forward address information to be sent by the outgoing international signalling equipment

The information to be sent in the forward direction by the outgoing international signalling equipment in order to set up telephone connections differs from the information to be sent by the telephone user. The content and the sequence of forward address information is furthermore dependent on the signalling systems used in the international network. In the following, a distinction is made between common channel and channel associated signalling systems.

2.1 *Common channel signalling systems*

In the case of common channel Signalling Systems No. 6 and No. 7, the first signal to be sent to an (international) signalling data link relating to the set up of a telephone connection is the initial address message. According to the definitions in Recommendations Q.254 [1], Q.722 [2] and Q.762 [7], the initial address message normally contains, among others, the following forward address information:

a) nature-of-address indicator indicating that the
   - international number,
   - national (significant) number, or
   - subscriber number is included;

b) nature-of-circuit indicator indicating that
   - a satellite circuit is included
   - no satellite circuit is included;

c) echo-suppressor indicator indicating that
   - an outgoing half-echo suppressor is included
   - no outgoing half-echo suppressor is included;

d) calling-party's-category indicator including, among others,
   - a language digit, L
   - the discriminating digit D;

e) address signals
   - country code
   - national (significant) numbers
   - code 11
   - code 12
   - end-of-pulsing (ST) signal or code 15.

As the initial address message of Signalling Systems No. 6 and No. 7 carries at least the information mentioned above, it is not necessary to describe here in detail the sequence of the forward address information to be sent by the outgoing international signalling equipment; reference is made to Recommendations Q.258 [3], Q.723 [6] and Q.763 [8], instead.

Nevertheless, the following additional comments are made:

a) In cases where the international call is routed

- from an originating international exchange (CT) to an international transit CT, or
- from one international transit CT to another international transit CT

(i.e. for international transit calls) the appropriate nature-of-address indicator (international number - Signalling System No. 7) or country code indicator (country code included - Signalling System No. 6) will be used together with the country code.

b) If a terminal international link is selected; i.e. in cases where the call is routed

- from an originating CT direct to a destination CT, or
- from a transit CT to a destination CT

the nature-of-address indicator [national (significant) number: Signalling System No. 7] or the country code indicator (country code not included: Signalling System No. 6) will be used. In this case, no country code has to be sent.

In both cases a) and b) described above, further routing information will be included in the initial address message. For further details, see Recommendations Q.258 [3], Q.723 [6] and Q.763 [8].

2.2 *Channel associated signalling systems*

For channel associated signalling systems, it is important to determine the first interregister signal and the sequence of forward address information. This matter is dealt with in the following, taking into account various types of calls and Signalling Systems No. 4, No. 5, R1 and R2.

With the exception of the seizing signals in Signalling System No. 4, no line signals are dealt with.

2.2.1 *The first signals to be sent on international links*

Table 2/Q.107 shows the first type of signal to be sent on four different types of international links in the case where channel associated signalling systems are used.

TABLE 2/Q.107

First signal to be sent on international links

Type	International link		First signal sent on the international link
	from	to	
a)	Originating country	Designation country	Terminal-call indicator or discriminating or language digit
b)	Originating country	Transit country	Transit-call indicator
c)	Transit country	Transit country	Transit-call indicator
d)	Transit country	Destination country	Terminal-call indicator or discriminating or language digit

The terminal-call indicator is a type of signal indicating that an international terminal link *a)* or *d)* is involved and that no country code has to be sent to the incoming CT. In the case of Signalling System No. 4, the terminal-call indicator is represented by the terminal seizing signal - a forward line signal. For the other channel associated signalling systems, interregister signals are used. The discriminating digit D and the language digit L (both are also called the characteristic digit Z) must be in accordance with Recommendation Q.104.

The transit-call indicator is a type of signal indicating that an international transit link *b)* or *c)* is involved and that the country code will be included in the signalling sequence. In the case of Signalling System No. 4, the transit-call indicator is represented by the transit seizing signal - a forward line signal. For the other channel associated signalling systems, interregister signals are used.

2.2.2 *Sequence of forward address information for automatic and semi-automatic calls to a subscriber*

The forward address information to be sent by the outgoing international signalling equipment differs from the information sent by the telephone user as described in § 1.

Details covering the different channel associated CCITT signalling systems are shown in Table 3/Q.107.

2.2.3 *Sequence of forward address information for calls to any incoming or delay operator's position*

Table 4/Q.107 shows in detail the standard sequence of forward address information for calls to any incoming or delay operator's position to be sent by the outgoing international signalling equipment. A distinction is made between international transit and terminal calls as well as between different channel associated CCITT signalling systems.

TABLE 3/Q.107

Sequence of forward address information for automatic and semi-automatic calls to a subscriber to be sent by the outgoing international signalling equipment

Sending sequence ↓

	Channel associated CCITT signalling system	No. 4	No. 5	R2	R1 [a]
International transit call	Transit-call indicator	Transit seizing [b]	KP 2	I-12 or I-14 or I-11 [c]	–
	Echo-suppressor indicator	– [d]	–		–
	Nature-of-circuit indicator	–	–	I-13 or I-14 [e]	–
	Country code	I_1, I_1 I_2, I_1 I_2 I_3 [f]			–
	Calling-party's-category indicator	D = 0 or L = 1, 2, 3, ...			–
	National (significant) number	N_1 N_2 N_3 ...			–
	Sending-finished	Code 15	ST	Code 15	–
International terminal call	Terminal-call indicator	Terminal seizing [b]	KP 1		KP [h]
	Calling-party's-category indicator	D = 0 or L = 1, 2, 3 ... [g]			–
	Echo-suppressor indicator	– [d]	–	1-14 [e]	–
	Nature-of-circuit indicator	–	–	1-13 or 1-14 [e]	–
	National (significant) number	N_1 N_2 N_3 ...			
	Sending-finished	Code 15	ST	Code 15	–

[a] Signalling system R1 is not used for international transit calls.

[b] For Signalling System No.4, the transit and the terminal-call indicators are represented by line signals. For the other signalling systems, no line signals are shown.

[c] The use of signal I-11 in international working is subject to bilateral agreements.

[d] Code 14 can be used for echo-suppressor control to bilateral or multilateral agreements.

[e] These signals are sent on request.

[f] See Recommendation Q.101.

[g] For Signalling System R2, the L digit is also used as terminal-call indicator.

[h] The KP signal is only used to prepare the incoming signalling equipment for the reception of the subsequent interregister signals; see also footnote a) above.

TABLE 4/Q.107

Sequence of forward address information for calls to any incoming or delay operators' position

Sending sequence ↓

	Channel associated CCITT signalling system	No. 4	No. 5	R2	R1 [a]
International transit call	Transit-call indicator	Transit seizing [b]	KP 2	I-12 or I-14 or I-11 [c]	–
	Echo-suppressor indicator	– [d]	–		–
	Nature-of-circuit indicator	–	–	I-13 or I-14 [e]	–
	Country code	I_1, I_1 I_2, I_1 I_2 I_3			–
	Language digit	L = 1, 2, 3, ...			–
	Extra digit designating the incoming exchange	N_1			–
	Access to operator's position	Code 11 or code 12 [f]			–
	Sending-finished	Code 15	ST	Code 15	–
International terminal call	Terminal-call indicator	Terminal seizing [b]	KP 1		KP [h]
	Language digit	L = 1, 2, 3, ... [g]			–
	Echo-suppressor indicator	– [d]	–	1-14 [e]	–
	Nature-of-circuit indicator	–	–	1-13 or 1-14 [e]	–
	Extra digit designating the incoming exchange	N_1			–
	Access to operator's position	Code 11 or code 12 [f]			e.g. 121 or 1150
	Sending-finished	Code 15	ST	Code 15	ST

[a] Signalling System R1 is not used for international transit calls.

[b] For Signalling System No.4, the transit and the terminal-call indicators are represented by line signals. For the other signalling systems, no line signals are shown.

[c] The use of signal I-11 in international working is subject to bilateral agreements.

[d] Code 14 can be used for echo-suppressor control subject to bilateral or multilateral agreements.

[e] These signals are sent on request.

[f] See Recommendation Q.101.

[g] For Signalling System R2, The L digit is also used as terminal-call indicator.

[h] The KP signal is only used to prepare the incoming signalling equipment for the reception of the subsequent interregister signals; see also Note a).

2.2.4 *Sequence of forward address information for calls to a particular delay operator*

The standard sequence of forward address information for calls to a particular delay operator or one of those operating a particular group of delay operator's position is shown in detail in Table 5/Q.107. Again a distinction is made between international transit and terminal calls as well as between different channel associated CCITT signalling systems.

The footnotes relating to Table 4/Q.107 are also valid for Table 5/Q.107.

3 Standard sending sequence of forward address information in the case of calls to testing and measuring devices

International calls to testing and measuring devices are terminal calls. Therefore, the outgoing signalling equipment will not send the country code. In Signalling System No. 4, the terminal-call indicator is a line signal.

Table 6/Q.107 contains the standard sending sequence and forward address information in the case of calls to testing and measuring devices to be sent by the outgoing signalling equipment for Signalling Systems No. 4, No. 5, No. 6, No. 7, R1 and R2.

Recommendation O.11 [4] contains the detailed specifications for CCITT manual maintenance access lines. Recommendation O.22 [5] contains the detailed specifications for the CCITT ATME No. 2. Further information with regard to calls to testing and measuring devices can be found in the detailed specifications of the relevant CCITT signalling systems.

In the case of the common channel Signalling Systems No. 6 and No.7, all information will be carried by means of an initial address message in which the message indicators will be set to their appropriate values as specified in Recommendations Q.258 [3], Q.723 [6] and Q.763 [8].

In Table 7/Q.107 the access codes required to reach the testing and measuring devices in the exchange of destination are given for CCITT Signalling Systems No. 4, No. 5, No. 6, No. 7 and R2.

TABLE 5/Q.107

Sequence of forward address for calls to a particular delay operator's position

Sending sequence ↓

	Channel associated CCITT signalling system	No. 4	No. 5	R2	R1 [a]
International transit call	Transit-call indicator	Transit seizing [b]	KP 2	I-12 or I-14 or I-11 [c]	–
	Echo-suppressor indicator	– [d]	–		–
	Nature-of-circuit indicator	–	–	I-13 or I-14 [e]	–
	Country code	I_1, I_1 I_2, I_1 I_2 I_3			–
	Language digit	L = 1, 2, 3, ...			–
	Extra digit designating the incoming CT	N_1			–
	Access to operator's position	Code 12			–
	Number of a particular position	x_1 (x_2 x_3 ...)			–
	Sending-finished	Code 15	ST	Code 15	–
International terminal call	Terminal-call indicator	Terminal seizing [b]	KP 1		KP [g]
	Language digit	L = 1, 2, 3, ... [f]			–
	Echo-suppressor indicator	– [d]	–	1-14 [e]	–
	Nature-of-circuit indicator	–	–	1-13 or 1-14 [e]	–
	Extra digit designating the incoming CT	N_1			–
	Access to operator's position	Code 12			e.g. 1150
	Number of a particular position	x_1 (x_2 x_3 ...)			e.g. 11x_1 x_2
	Sending-finished	Code 15	ST	Code 15	ST

[a] Signalling System R1 is not used for international transit calls.

[b] For Signlling System No.4, the transit and the terminal-call indicators are represented by line signals. For the other signalling systems, no line signals are shown.

[c] The use of signal I-11 in international working is subject to bilateral agreements.

[d] Code 14 can be used for echo-suppressor control subject to bilateral or multilateral agreements.

[e] These signals are sent on request.

[f] For Signalling System R2, the L digit is also used as terminal-call indicator.

[g] The KP signal is only used to prepare the incoming signalling equipment for the reception of the subsequent interregister signals; see also Note a).

TABLE 6/Q.107

Sending sequence of forward address information in the case of calls to testing and measuring devices

Sending sequence ↓

CCITT signalling system	No. 4	No. 5	No. 6	No. 7	R2	R1
Terminal-call indicator	Terminal seizing	KP 1	Together with other message indicators			KP
Calling party's category indicator	D = code 13	D = 7	Test call	Test call	D = code 13 [a]	–
Test-call indicator	Code 12	Code 12	–	–	Code 13	–
Access code for a particular testing or measuring device	Digit 0 plus 2 digits x, y	Digit 0 plus 2 digits x, y	16 combi-nations	2 digits x, y	2 digits x, y	Digits to be agreed upon (minimum three)
Sending-finished	Code 15	ST	ST	ST	Code 15	ST

[a] For signalling System R2, the D digit is also used as terminal-call indicator.

TABLE 7/Q.107

Access codes for a particular testing or measuring device

CCITT signalling system	Access codes				
	No. 4	No. 5	R2	No. 6	No. 7
Multiple address capability for transmission access test line	21-29	21-29	21-29	6 7 8	21-29
ATME 2 Type a ATME 2 Type b ATME 2 Type c	61 62 63	61 62 63	61 62 —	1 2 —	61 62 63
Quiet termination Echo suppressor test Loop around Echo canceller test Loop back test line	64 65 66 67 68	64 65 66 67 68	64 65 66 67 68	3 4 5 9 10	64 65 66 67 68
Simplified test Good/no good transmission Test	— 00	— —	90 00	—	—
Continuity check	—	—	—	0	00

References

[1] CCITT Recommendation *Telephone signals*, Vol. VI, Fascicle VI.3, Rec. Q.254.

[2] CCITT Recommendation *General function of telephone messages and signals*, Vol. VI, Fascicle VI.8, Rec. Q.722.

[3] CCITT Recommendation *Telephone signals*, Vol. VI, Fascicle VI.3, Rec. Q.258.

[4] CCITT Recommendation *Specifications for manual maintenance access lines*, Vol. IV, Fascicle IV.4, Rec. O.11.

[5] CCITT Recommendation *CCITT automatic transmission measuring and signalling testing equipment (ATME No. 2)*, Vol. IV, Fascicle IV.4, Rec. O.22.

[6] CCITT Recommendations, *Formats and codes*, Vol. VI, Fascicle VI.8, Rec. Q.723.

[7] CCITT Recommendations, *General function of messages and signals*, Vol VI, Fascicle VI.8, Rec. Q.762.

[8] CCITT Recommendations, *Formats and codes*, Vol. VI, Fascicle VI.8, Rec. Q.763.