INTERNATIONAL TELECOMMUNICATION UNION

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TELEGRAPH SERVICES

PROVISIONS APPLYING TO THE OPERATION OF AN INTERNATIONAL PUBLIC AUTOMATIC MESSAGE SWITCHING SERVICE FOR EQUIPMENTS UTILIZING THE INTERNATIONAL TELEGRAPH ALPHABET No. 2

ITU-T Recommendation F.35

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation F.35 was published in Fascicle II.4 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 F.35 [1)]

PROVISIONS APPLYING TO THE OPERATION OF AN INTERNATIONAL PUBLIC AUTOMATIC MESSAGE SWITCHING SERVICE FOR EQUIPMENTS UTILIZING THE INTERNATIONAL TELEGRAPH ALPHABET No. 2

The existence of message switching systems in various countries creates the need for international agreement on operational rules. This service, hereafter described, can be offered by the Administration, on an international basis, following a preliminary agreement by the Administrations concerned.

The CCITT,

considering

(a) that message switching services are based on a technique of providing storage, routing and retransmission of messages;

(b) that the existence of present terminals and systems utilizing the International Telegraph Alphabet No. 2 justifies the provision of a Recommendation for an automatic message switching service;

(c) that terminals and systems in use conform to the relevant CCITT Recommendations;

(d) that the application of operational rules in this kind of environment does not preclude the development of messaging services, unanimous declares

unanimously declares

that the following provisions should be applied when a public message switching service is being provided internationally for equipment utilizing the International Telegraph Alphabet No. 2.

1 General

1.1 The *format* to be used shall comprise a layout with the following basic components:

- the identification line,
- the routing line,
- the origin line.
- the text.

1.2 *Length of messages*

As a general rule, the length of messages should not exceed 10 000 printed characters, spaces or separators. Nevertheless, Administrations may establish a different limit by bilateral agreement.

1.3 *Sequence of signs*

The uninterrupted repetition of any sign shall be tolerated up to a number of characters corresponding to a printed line varying in length according to the mode of operation used. Beyond this limit, the message shall be refused; subsequent signs forming part of the repetition shall be ignored.

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1) Formerly numbered F.150 in the Red Book.

1.4 *Routing*

Messages shall be routed on circuits and systems in accordance with arrangements and modalities agreed between the Administrations concerned.

As a rule, each system shall only receive messages for direct retransmission to national users.

When difficulties arise in this routing, only the standby circuits and systems previously designated as such shall be brought into use. If, however, the standby equipments previously agreed upon prove to be inadequate owing to the special nature of the difficulty, the traffic may be routed on other circuits or systems with the prior agreement of the Administrations concerned or of instances appointed by them for the purpose.

To avoid critical obstruction of the system or systems used for emergency routing, traffic cannot be deviated until the agreement of the Administrations concerned has been obtained; any restrictions placed on the deviation must be observed.

1.5 *Service traffic*

Service traffic exchanged through a system must conform with the example given in § 5.2. In all cases, the reference data relating to the original message must appear at the beginning of the text of the service correspondence. These data must in no case be preceded by other information.

In cases directly concerned with interworking between systems, the service traffic must be addressed to the system itself.

1.6 *Effects of one system on another*

Traffic between two directly interconnected systems may be affected by the following commands:

– an order to the partner to stop and then to resume his transmission;

– a request to repeat messages;

– a request for a load position notice.

These commands shall follow the format shown in § 5.2 and shall be addressed to the corresponding system. The first word of the text indicates the action to be taken.

According to the degree of development of the system, the reaction may be automatic or set off by the operator.

1.7 *Overloading of systems*

Precautions must be taken against overloading.

The system shall signal the moment when a critical load threshold is reached, so that appropriate measures can be taken before the situation deteriorates further.

As far as possible, the system shall complete reception of messages in progress before taking action.

1.8 *Procedure to be applied in the event of total interruption of the system*

When the interruption is planned (maintenance), the partners shall be notified as far as possible in advance.

When it is formally established that a sudden interruption will last longer than 2 hours, all the partners concerned shall be notified without delay and informed of the measures to be taken or, where applicable, of the application of measures planned for the provisional remedy of such system failures.

As soon as normal operation of the system is restored, the correspondents shall be informed without delay.

1.9 *Period of preservation of archives*

1.9.1 *For automatic access*

An automatic message retransmission system should, as far as possible, be so designed as to allow direct access, for purposes of repetition or settlement of disputes, to messages transmitted by the system for at least the past 24 hours.

1.9.2 *For deferred access*

Archives relating to the deposit and transmission of messages shall be kept for at least 2 weeks as from the day following the deposit of the message.

1.10 *Terminals directly connected to the centre of another Administration*

When connection to a national centre cannot be effected, a terminal may exceptionally be connected to the centre of another Administration, with the consent of the Administrations concerned.

1.11 *Tolerances*

1.11.1 At *reception*, a system must be capable of admitting tolerances whereby recourse to human interpretation is reduced to a minimum.

For maximum efficiency, these tolerances shall, as far as possible, be adapted to the errors most commonly encountered in operation. Nevertheless, errors liable to interfere with the routing or correct treatment of the message shall be excluded.

Unless otherwise agreed, messages which cannot be processed, automatically or manually, and character sequences not recognized as messages shall be notified to the transmitting station by an appropriate message. This message shall be set out in the format described in § 5.2 and shall contain in the text the references of the original message (identification line) and the reason for refusal.

1.11.2 At *transmission*, the system must strictly observe the criteria of the agreed format, irrespective of the tolerance admitted at reception.

1.11.3 Departures from these rules may be permitted only with the consent of the Administrations concerned.

2 Message

The format to be used to prepare a message for transmission is as follows:

2.1 *Identification line*

The heading of the message is formed by the identification line which comprises:

2.1.1. *Start-of-message signal* (SOM)

This signal, normally composed of the sequence of Combinations Nos. 26, 3, 26, 3 of International Telegraph Alphabet No. 2 (ZCZC or + : + :), may vary according to the mode of operation used. It is followed by the channel serial number.

2.1.2 *Channel serial number*

Transmission numbering shall be applied serially to each point-to-point circuit and each terminal using the switched network. The channel serial number consists of three letters characterizing the circuit (circuit indicator) or terminal used, followed by the order number of the message carried on the circuit, exchanged with the terminal. The channel serial numbers shall be followed by 001 to 999, with automatic transfer from 999 to 001 at the end of the numbering cycle.

At each retransmission, a new channel serial number shall be inserted immediately after the start-of-message signal. The channel serial numbers shall appear in the identification line of the message in the opposite order to the one in which the message was transmitted.

The length of the identification line must not exceed 69 printed characters. Where necessary, the penultimate channel serial number of the identification line shall be erased and replaced by a new one; the last channel serial number of the identification line shall always be retained, because it also serves as the identification group of the message.

The identification line shall be followed by the routing line.

2.2 *Routing line*

The routing line comprises:

2.2.1 *Priority indicator*

The priority indicator, preceded by at least one “line change” order, consists of two letters and indicates the following four priorities:

– QS means that the message is very urgent

– QU means that the message is urgent

– QN means that the message is normal

– QD means that the message can wait.

Systems should be capable of identifying these four priorities at reception, but can deal with only two priorities at transmission, confusing QS with QU and QN with QD. A message containing no mention of priority or containing a mention other than the ones listed above shall be regarded as a normal message and shall be marked with the code QN at output.

The priority indicator shall be followed by the routing indicator.

2.2.2 *Routing indicator*

The routing indicator shall be composed of an alphanumerical group of three to seven characters agreed upon by the Administrations concerned. The signs “–” (dash) and “/” (oblique) are also admitted.

A message may comprise up to 32 routing indicators distributed over one or more lines, each of which can designate one or more addressees. The message delivered to the addressee shall contain only the indicator which relates to him.

The routine line is followed by the origin line.

2.3 *Origin line*

The origin line is preceded by at least one "change of line" order, followed by the full stop sign (.). The origin line comprises:

2.3.1 *Origin indicator*

The origin indicator is composed in accordance with the criteria set out in the first paragraph of § 2.2.2. The space between the full stop and the origin indicator is optional.

The origin indicator may be followed by references.

2.3.2 *References*

These references are optional and may be provided either by the sender or by the system of origin. They shall have no effect on the processing of the message.

The length of the origin line must not exceed one printed line of 69 characters.

The origin line shall be followed by the text.

2.4 *Text*

Preceded by at least one “change of line” order.

The format of the text is subject to no special criteria. With regard to the content, the “start-of-message” (SOM) and “end-of-message” (EOM) signals and specific signs or combinations not authorized by a given mode of operation (cf. the relevant sections) shall not be used.

The text is followed by the end-of-message signal (EOM).

2.5 *End-of-message signal* (EOM)

This signal, preceded by at least one “change of line” order, is normally composed of the sequence of combinations No. 14, 14, 14, 14 of International Telegraph Alphabet No. 2 (NNNN or ,,,,). This signal may, however, vary according to the mode of operation used.

2.6 The format to be used to prepare a *service message* is the same as that stipulated for an ordinary message (see §§ 2.1 to 2.5).

Comments and orders may be expressed in the abbreviated form described below.

An example of such a message is given in § 5.2.

3 Mode of operation on asynchronous point-to-point circuits

3.1 *Start of message*

Group ZCZC or + : + : indicates the start of the message (SOM).

3.2 *End of message*

Group NNNN or ,,,, indicates the end of the message (EOM).

3.3 *Sequence of function signs*

The combination of function signs ($\rightarrow \prec \equiv \uparrow \downarrow$) does not affect the analysis and treatment of the message.

3.4 *Routing of traffic*

Messages are routed on circuits and systems in accordance with the arrangements and modalities agreed upon between the Administrations concerned.

When two systems are connected by several circuits, the traffic shall be distributed over each usable circuit, if possible.

3.5 *Repetition of messages*

Messages shall be repeated only at the request of the partner. There are two kinds of repetition:

3.5.1 *Repetitions in the form of service notices* (retrievals)

These are generally used to repeat messages already completely transmitted. The channel serial number of the original transmission must appear in the service notice.

3.5.2 *Repetitions in the same form as the first transmission* (rerun, put-back)

Messages shall be repeated in exactly the same form as the original transmission, i.e. in the same order, with the same identification and the serial number and via the same circuit.

3.6 *Specific rules for transmission*

3.6.1 *Interruption of transmission*

After restoration of the situation, the interrupted message should, as a rule, be repeated with the same serial number.

3.6.2 *Cancellation of a message in the course of transmission*

Any message that has begun may be cancelled by transmitting:

ANUL NNNN

The channel serial number shall be reassigned to the following message.

The cancelled message shall be neither processed nor transmitted, but shall be kept in the archives.

3.6.3 *Special signs*

Transmission of characters D, F, G and H in the form of figures and of combination No. 32 is subject to prior agreement.

3.6.4 *Tolerances*

No tolerance shall be admitted for the transmission of messages,

3.7 *Specific rules for reception*

3.7.1 *Irregularities at reception*

a) *Absence of start-of-message criterion*

The system memorizes the signs received until it recognizes an end-of-message (EOM) sequence or until an irregularity c), d) or e) below appears.

b) *Absence of end-of-message (EOM) criterion*

This causes the message to be rejected.

c) *Pause*

A pause may be defined as a period during the reception of a message in the course of which no data signal is received. If the pause lasts longer than 30 seconds, the system rejects the message.

d) *Repetition of signs*

Repetition of signs in excess of the tolerances given in § 1.3 causes the message to be rejected.

e) *Interruption of circuit*

An interruption is equivalent to a lapse of reception time of at least one character. Appropriate measures shall be taken to avoid loss of messages.

Note – Rejection of the message is held to mean the sending of a notice to the transmitting station or, where applicable, its routing to a forward transfer position (see § 1.11. 1).

3.7.2 *Special signs*

The presence of characters F, G and H in the form of figures and of combination No. 32 shall not affect reception availability.

As far as possible, the presence of characters D in figure case shall be admitted under the same conditions.

3.7.3 *Tolerances*

Any tolerances that might be admitted at reception must not be liable to cause the loss, mutilation or duplication of messages.

4 **Switched network mode of operation** (telex)

The rules applicable to the establishment of calls, transmission of messages and disconnection of calls shall be those set out in Recommendation F.60.

4.1 *Start of message*

Group ZCZC or + : + : indicates the start of the message (SOM).

4.2 *End of message*

Group NNNN or ,,,, indicates the end of the message.

4.3 *Cancellation of a message during transmission*

Any message that has begun may be cancelled by transmitting:

ANUL NNNN

The two answerback codes must then be released and the channel serial number must be reassigned to the following message.

The cancelled message shall not be processed or retransmitted, but shall be kept in the archives.

5 Examples of formats

5.1 *Format of ordinary message*

ZCZC PMS036 (Note 1)

QN STOUDHF (Note 2)

.MARSBRD 77/11 REF 132 (Note 3)

TEXT

NNNN

Note 1 – Identification line comprising the start-of-message (SOM) signal and one channel serial number.

Note 2 – Routing line comprising the priority and routing indicators.

Note 3 – Origin line comprising the indicator of origin and optional references.

5.2 *Format of service message*

ZCZC SWF226

QU CENTREB

.CENTREA

COMMENTAIRE/COMMANDE

NNNN