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TELEGRAPH AND MOBILE SERVICES

OPERATIONS AND QUALITY OF SERVICE

OPERATIONAL PROCEDURES FOR INTERWORKING BETWEEN THE INTERNATIONAL TELEX SERVICE AND THE SERVICE OFFERED BY THE INMARSAT-C SYSTEM

Recommendation F.127

Geneva, 1992

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation F.127 was revised by Study Group I and was approved under the Resolution No. 2 procedure on the 4th of August 1992.

CCITT NOTES

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

2) A list of abbreviations used in this Recommendation can be found in Annex A.

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Recommendation F.127

OPERATIONAL PROCEDURES FOR INTERWORKING BETWEEN THE INTERNATIONAL TELEX SERVICE AND THE SERVICE OFFERED BY THE INMARSAT-C SYSTEM

(revised 1992)

The CCITT,

considering

(a) that INMARSAT has introduced various mobile services based on the INMARSAT-A, INMARSAT-B and INMARSAT-C systems;

(b) that Recommendation F.120 specifies ship station identification for the maritime mobile-satellite service;

(c) that Recommendation F.125 specifies the numbering plan for the maritime mobile-satellite service of INMARSAT;

(d) that Recommendation F.126 specifies the selection procedures for INMARSAT mobile earth stations accessing the International telex service;

(e) that the provision of interworking with the international telex service is a standard requirement within the INMARSAT-C system,

unanimously recommends

that operational procedures of interworking between the international telex service and the service provided by the INMARSAT-C system be in accordance with this Recommendation.

1 Definitions

1.1 **ship earth station** is defined in Article 1, section 4.16 of the *Radio Regulations*, ITU Geneva, 1982. For the purpose of this Recommendation, the terms “ship earth station” and mobile earth station are interchangeable.

1.2 **coast earth station** is defined in Article 1, section 4.14 of the *Radio Regulations*, ITU Geneva, 1982. For the purpose of this Recommendation, the terms “coast earth station” and “land earth station” are interchangeable.

1.3 The **mobile satellite store-and-forward unit** is the functional interface between the mobile satellite message transmission system and the international telex service.

2 Scope

2.1 The purpose of this Recommendation is:

a) to standardize procedures for the subscribers of the international telex service calling mobile earth stations (MESs) in the INMARSAT-C system;

b) to standardize procedures for an MES calling subscribers of the international telex service;

c) to standardize procedures for MES-to-MES calls that transit the international telex network.

3 Introduction

3.1 The characteristics of the mobile satellite circuit provided by the INMARSAT-C system are such that only store-and-forward operation is supported when interworking with the international telex service.

3.2 A general description of the INMARSAT-C system and the services it may support is given in Supplement No. 3 to the F-Series Recommendations (*Blue Book*, Fascicle II.4, Melbourne, 1988).

3.3 In the interests of ensuring that the optimum use is made of the international telex service, Administrations may wish to advise their customers of any differences in messaging procedures between the service offered by the INMARSAT-C system and normal telex procedures as offered by other INMARSAT standard systems.

3.4 The provisions of this Recommendation should be applied to future implementation and, as far as practicable, to existing implementations of mobile satellite store-and-forward unit (MSSFU).

4 Principles of operation

4.1 Communication between subscribers of the international telex service and an MES is on a store-and-forward basis. Thus, conversational mode interworking between terminals is not provided.

4.2 Interworking between the international telex service and the INMARSAT-C system may employ either one-stage or two-stage selection procedures for the delivery of telex messages to an MES. Administrations may provide either or both modes of operation.

These services may be extended across international boundaries on a bilateral basis. Where no such bilateral agreement exists the administration operating the MSSFU may clear the call and return the service signal (**NA**).

4.3 In mobile to fixed direction subscribers to the mobile-satellite service provided by the INMARSAT-C system may send single messages to the subscribers of the international telex service and to the appropriate applications (from the list shown in Table A-1/F.126). The messages are forwarded by the MSSFU via the international telex service.

4.4 For calls from MES-to-MES, the procedures for handling calls between different satellite regions is not the subject for international standardization. Such calls which utilize the international telex service should follow normal telex procedures.

5 Operational procedures

5.1 *International telex service to INMARSAT-C system*

5.1.1 *One-stage selection by the telex customer*

5.1.1.1 A customer of the international telex service may place a call to a using normal telex procedures.

5.1.1.2 The originating telex subscriber, when calling an INMARSAT-C MES, should input the following selection information, plus any necessary prefix and end-of-selection signal:

$58S4X_1.....X_8$

where 58S is the telex destination code in accordance with Recommendation F.69 (S = 1, 2, 3 or 4), 4 is the T-digit in accordance with Recommendation F.125, and $X_1.....X_8$ are part of the MES identity in accordance with Recommendation F.125.

5.1.1.3 On receipt of this address the MSSFU should check that the addressed MES is logged into the satellite region and should, if the result is positive, return the call connect signal in accordance with the relevant U-Series Recommendations. If the check fails, the call attempt should be cleared by the MSSFU with the appropriate service signal in accordance with Recommendation F.131.

5.1.1.4 The MSSFU should return the MES answerback, formatted in accordance with Recommendation F.74.

5.1.1.5 The MSSFU should transmit a **WRU** signal following the MES answerback in order to capture the answerback of the originating telex subscriber.

5.1.1.6 The calling telex address shall be determined from the received telex answerback in accordance with the rules described in Recommendation U.74.

Where the calling telex address cannot be determined, the MSSFU should wait 3 seconds from the end of the received answerback to enable the originating telex customer to voluntarily input his telex address, in accordance with Recommendation U.208. At the end of this period the MSSFU shall return the prompt signal **ADD**. If the calling telex address is not received within 15 seconds of the **ADD** prompt, another **ADD** prompt signal shall be returned. If another 15 seconds elapse without the receipt of the calling telex address, the connection shall be cleared by the MSSFU.

Optionally, the call may be accepted by the MSSFU, and the **GA** prompt returned, where, in the event of non-delivery of an accepted message, alternative arrangements are in place to provide a non-delivery notification message to the originating telex subscriber, for example, spill out to an assistance position.

It should be noted that some MSSFU do not support the **ADD** procedure. In this case, the MSSFU should return the code expression **REJ** and clear the call.

5.1.1.7 Input of the message may now be commenced by the orignating telex customer.

5.1.1.8 The preferred method of clearing to be applied by the originating telex customer is by the use of the end-of-transmission (EOT) signal, four times combination 26 in figures case (++++) which need not be passed to the intended recipient. This method enables the provision of a message reference number by the MSSFU which could be useful to the message originator should a non-delivery notification (NDN) be subsequently received. However, it should be recognized that the originating telex customer could clear the connection in one of the following ways:

a) The customer may close his message with the end-of-message (EOM) signal **NNNN** which is followed by a period of idle condition of 30 seconds. This should be interpreted by the MSSFU as being equivalent to an EOT signal and return the input transaction accepted for delivery (ITD) sequence as specified in Recommendation U.208.

b) The customer may close his message with the end-of-message signal **NNNN** followed immediately by a clear, having optionally exchanged answerbacks, in which case the MSSFU should proceed as in c).

c) The call may be cleared without EOT or EOM, in which case all text received should be forwarded to the MES in the normal way, optionally including a statement which would advise the recipient that the message originator did not clear the connection using the EOT procedure and that consequently the message may be incomplete.

d) To facilitate clearing by telex automatic emitting device (TAEDs) which may interpret a clear initiated by the MSSFU as an abnormal condition, the **ITD** sequence should be followed by a period of idle condition to enable clearing by TAEDs in accordance with Recommendation S.20.

5.1.1.9 Following clearing of the connection across the international telex network, delivery of the message to the address MES should commence at the earliest opportunity.

5.1.1.10 The message should not be held in the MSSFU for more than 24 hours.

5.1.1.11 In the event of non-delivery of the message to the MES, an NDN should be returned to the originating telex customer in accordance with Recommendation U.208.

5.1.1.12 If message delivery has not commenced at the expiry of the 24-hour period, an NDN should be provided to the originating telex customer. However, any delivery procedure which has already been commenced by the MSSFU that would exceed the 24-hour period, should be completed.

5.1.2 *Two-stage selection*

5.1.2.1 Subscribers of the international telex service should use normal telex call establishment procedures to access the MSSFU, which is allocated a national number for this purpose, the general service principles and access procedures and protocols being in accordance with Recommendations F.72 and U.80 for two-stage access to a store-and-forward unit.

5.1.2.2 The MSSFU should accept both single and multi-addressed calls, the address line containing an optional attention information field in accordance with Recommendation F.72 to indicate the expected answerback of the recipient, attention information, class of delivery indicator, and a request for positive delivery notification. The list of addresses, either single or multiple, should be closed by the end-of-address (EOA) signal **BT**.

As a minimum, the address line should contain the selection information in accordance with § 5.1.1.2.

5.1.2.3 If the calling address cannot be determined from the calling subscriber's answerback for the purpose of delivering a non-delivery advice, the call should be cleared.

The call may be accepted where, in the event of non-delivery of a message, alternative arrangements for delivery are provided. The alternative arrangements, for example, may be the provision of an operator position.

5.1.2.4 The action to be taken when abnormal conditions are encountered during message input shall be in accordance with Recommendations F.72 and U.80.

5.2 *Calls from an MES to subscribers of the international telex service*

5.2.1 Subscribers to the Mobile Satellite service provided by the INMARSAT-C system may send messages to subscribers of the international telex service.

5.2.2 The messages should be forwarded by the MSSFU to the addressed telex subscriber via the international telex service. The answerback sent to the called telex subscriber should be that of the MES.

5.2.3 Upon delivery of the message to the destination telex subscriber, the MSSFU, if requested by the originating MES, should provide a positive delivery notification (PDN) to the MES. In the event of non-delivery of the message to the destination telex subscriber, it is an INMARSAT requirement of the MSSFU to provide a non-delivery notification (NDN) to the MES. The manner in which these notifications are provided to the MES is not the subject for international standardization.

5.3 *MES-to-MES calls utilizing the international telex service*

5.3.1 Subscribers to the Mobile Satellite service provided by the INMARSAT-C system may send messages to another MES.

5.3.2 Where the call is to an MES in another satellite region and the call is carried by the international telex service, the procedures to be followed should be in accordance with § 5.2.

The procedures to be adopted where the destination MSSFU does not support a one-stage selection method on calls from the international telex service are for further study.

5.3.3 The procedures for calls between MESs in the same satellite region or in satellite regions served by the same land earth station (LES), are not the subject for international standardization.

ANNEX A

(to Recommandation F.127)

Alphabetical list of abbreviations used in this Recommandation

EOA End-of-address

EOM End-of-message

EOT End-of-transmission

ITD Input transaction accepted for delivery

LES Land earth station

MES Mobile earth station

MSSFU Mobile satellite store-and-forward unit

NDN Non-delivery notification

PDN Positive delivery notification

TAED Telex automatic emitting device