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NUMBERING PLAN FOR ACCESS TO THE MOBILE-SATELLITE SERVICES OF INMARSAT FROM THE INTERNATIONAL TELEX SERVICE

ITU-T Recommendation F.125

(Previously "CCITT Recommendation")

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T 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 World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

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NOTE

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

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NUMBERING PLAN FOR ACCESS TO THE MOBILE-SATELLITE SERVICES OF INMARSAT FROM THE INTERNATIONAL TELEX SERVICE

(revised at Geneva, 1993)

1 Introduction

1.1 Purpose

The purpose of this Recommendation is to specify a telex numbering plan for mobile earth stations in systems operated by INMARSAT. Such systems may include maritime land and aeronautical satellite systems. In the future the range of mobile satellite systems may also include satellite systems for other applications.

1.2 Terminology

The telephone/ISDN numbering plan for INMARSAT is contained in Recommendation E.215. Recommendations E.215 and F.125 are designed to be as similar as possible.

For the purpose of this Recommendation, the following definitions apply:

1.2.1 **ship station identity**: As defined in the Radio Regulations, Appendix 43. See also Recommendation F.120.

1.2.2 **INMARSAT mobile international number**: The addressing information, excluding any prefix, comprising a telex destination code and INMARSAT mobile number, used to access a terminal equipment connected to an INMARSAT mobile earth station from the international telex service.

1.2.3 **INMARSAT mobile number**: The part of the INMARSAT mobile international number which follows the telex destination code allocated to an INMARSAT satellite region.

1.2.4 **INMARSAT mobile terminal number**: That part of the INMARSAT mobile number which identifies a specific terminal equipment connected to the mobile earth station.

1.2.5 **Other definitions**

For definition of terms such as maritime mobile-satellite service, aeronautical mobile-satellite service, ship earth station, etc., see the Radio Regulations.

1.3 Basic considerations

The considerations which form the basis for the numbering plan are:

1.3.1 It should be possible to identify a mobile earth station, uniquely from the INMARSAT mobile number.

1.3.2 The INMARSAT mobile number should have a format where the same number could be used for access from all types of public network.

1.3.3 The number of telex destination codes listed in Recommendation F.69 required for supporting future INMARSAT requirements should be as few as possible.

1.3.4 Different routings may be used for calls to mobile earth stations designed to different INMARSAT system standards.

1.3.5 Recognized operating agencies (ROA) and INMARSAT may apply different charging and accounting rates to different INMARSAT system standards.

1.3.6 The numbering plan should provide capacity for the identification of terminal equipment connected to a mobile earth station.

1.3.7 The numbering plan should support access to multichannel mobile earth stations.

1.3.8 Any new mobile earth station numbering plan should incorporate numbering plan(s) already in use for the INMARSAT-A system.

1.3.9 The length of the INMARSAT mobile international number should not exceed 12 digits to comply with Recommendations U.11 and U.12.

1.3.10 For maritime-satellite applications the ship station numbering plan should support access to several ship earth stations in the same ship within one ship station identity.

1.3.11 The Radio Regulations should make provision for the allocation of additional maritime identification digits (MIDs) for a specific country, when necessary.

2 Format of INMARSAT mobile international number

The format of the INMARSAT mobile international number is:

$$CCCT\ X_1 \ldots X_k$$

where CCC is the telex destination code, in accordance with Recommendation F.69, allocated to INMARSAT and $T\ X_1 \ldots X_k$ is the INMARSAT mobile number. The format of the INMARSAT mobile number is given in 4.

NOTE – The INMARSAT mobile international number will vary depending on the satellite region selected by the caller in which connection with the MES is to be attempted.

3 Telex destination codes for INMARSAT

The telex destination codes (see Recommendation F.69) allocated for INMARSAT are shown in Table 1.

TABLE 1/F.125

Telex destination codes for INMARSAT

Telex destination code	Geographical destination
581	Atlantic-east satellite region, INMARSAT
582	Pacific satellite region, INMARSAT
583	Indian satellite region, INMARSAT
584	Atlantic-west satellite region, INMARSAT

4 Format of INMARSAT mobile number

4.1 General format

4.1.1 The general format of the INMARSAT mobile number is:

$$T\ X_1X_2 \ldots X_k$$

where the digit T is used for discrimination between different INMARSAT systems.

The formats used for the various INMARSAT systems are defined below. The values of the T digits are summarized in Table 2.

The T digits represent a limited resource and a new T digit should therefore only be allocated when necessary for technical or operational reasons.

The TSB is responsible for coordinating the allocation of new T (or U) (see 4.6) digits with the competent Study Groups.

TABLE 2/F.125

Value of T digit for various applications

T digit	Applications
0	Group call in INMARSAT-A, see 4.2.2
1	Ordinary call in INMARSAT-A, see 4.2.1
2	Reserved for future use
3	Ordinary call in INMARSAT-B, see 4.3
4	Ordinary call in INMARSAT-C, see 4.4
5	Ordinary call in INMARSAT aeronautical system, see 4.5
6	INMARSAT-M (excluding telex)
7	Reserved for future use
8	Expedient access to special service terminations in INMARSAT-A, see Recommendation E.215
9	Reserved for future expansion, see 4.6

4.1.2 To meet the requirements of the international telex service, and, in particular, the signalling conditions specified in Recommendations U.11 and U.12, the INMARSAT mobile number should not contain more than 9 digits.

4.2 Formats of the INMARSAT mobile number for INMARSAT-A system

4.2.1 Ordinary calls

The format of the INMARSAT mobile number used for ordinary calls to mobile earth stations in INMARSAT-A system is as follows:

$$1\ X_1X_2X_3X_4X_5X_6 \text{ (7 digits)}$$

where 1 corresponds to the T digit and the digits $X_1X_2X_3X_4X_5X_6$ are allocated by INMARSAT.

4.2.2 Group calls

For group calls, the INMARSAT mobile number takes the following format:

$$0\ X_1X_2X_3X_4X_5X_6X_7X_8 \text{ (9 digits)}$$

where 0 corresponds to the T digit and X_1 through X_8 are allocated by INMARSAT.

The group call numbering scheme is shown in B.2.2.

4.3 Formats of the INMARSAT mobile number for INMARSAT-B system

4.3.1 Ordinary calls

The format of the INMARSAT mobile number used for ordinary calls to mobile earth stations in INMARSAT-B system, shall be as follows:

$$3\ M_1I_2D_3X_4X_5X_6X_7X_8 \text{ (9 digits)}$$

where 3 corresponds to the T digit and the $M_1I_2D_3X_4X_5X_6$ are the first 6 digits of the ship station identity MIDXXX000 (see Annex A). The INMARSAT mobile terminal number digits X_7X_8 may be used for identifying terminal equipment connected to a ship earth station, for discriminating between channels for multichannel ship earth stations and for discriminating between several ship earth stations on the same ship.

The number format is:

$$3\ X_1X_2X_3X_4X_5X_6X_7X_8 \text{ (9 digits)}$$

where the digit X_1 may take the values 8 or 9, which are reserved for future INMARSAT applications.

4.3.2 Group calls

For further study.

4.4 Format of the INMARSAT mobile number for INMARSAT-C system

4.4.1 Ordinary calls – Maritime mobile

The format of the INMARSAT mobile number used for ordinary calls to mobile earth stations in INMARSAT-C system, shall be as follows:

$$4\ M_1I_2D_3X_4X_5X_6X_7X_8 \text{ (9 digits)}$$

where 4 corresponds to the T digit and where at least the digits $M_1I_2D_3X_4X_5X_6$ are part of the ship station identity. The digits X_7X_8 may also be part of the ship station identity or be used for discrimination between several ship earth stations on the same ship.

The number format is:

$$4\ X_1X_2X_3X_4X_5X_6X_7X_8 \text{ (9 digits)}$$

4.4.2 Ordinary calls – Land mobile

The format of the INMARSAT mobile number used for ordinary calls to land-based mobile earth stations in the INMARSAT-C system, shall be as follows:

$$4\ 8\ M_2C_3C_4X_5X_6X_7X_8 \text{ (9 digits)}$$

where 4 corresponds to the T digit and the digit 8 signifies a land-based mobile earth station and the digits $M_2C_3C_4$ correspond with the mobile country codes listed in Annex A/E.212.

4.4.3 Group calls

Group call selection in the INMARSAT-C system is achieved using two stage access procedures which do not conform with the scheme outlined in Annex B.

4.5 Format of the INMARSAT mobile number for INMARSAT aeronautical system

The general format of INMARSAT mobile numbers in the INMARSAT aeronautical system is as follows:

$$5\ X_1X_2X_3X_4X_5X_6X_7X_8 \text{ (9 digits)}$$

where 5 corresponds to the T digit.

The format of the digits X_1 through X_8 is still to be determined.

4.6 Future INMARSAT systems

T digits will be allocated for each new INMARSAT system in the future. If an earlier system is taken out of service, T digits allocated for that system may be reallocated to new systems.

If the capacity provided by the T digits of Table 2 is not sufficient, further capacity may be made available by using T = 9 followed by an additional digit (U) as follows:

$$9\ U\ X_1X_2 \ldots X_k$$

where the digits $X_1 \ldots X_k$ identifies the mobile earth station and any extension connected to it. The digit U is used to identify new INMARSAT systems or for technical and operational reasons (see 6 below).

5 Digit analysis

If different routing and/or accounting arrangements are applied to different INMARSAT systems, the digits CCCT will need to be analysed at international exchanges.

If the routing capacity is increased by using T = 9 (see 4.6), the digits CCC9U need to be analysed and this is for further study.

6 Presentation of INMARSAT mobile numbers in directories

6.1 General

INMARSAT mobile numbers may be published in separate directories or in separate sections of general directories.

In directories, only the INMARSAT mobile numbers, as specified in 4.1, shall be listed. The telex destination code to be used and instruction for the subscribers should be contained in general parts of the directories.

The subject of directories for mobile-satellite services requires further studies.

Annex A

Use of ship station identification for maritime applications of systems operated by INMARSAT

(This annex forms an integral part of this Recommendation)

Note on Reservation on the use of this annex

The INMARSAT-B and C systems depend on analysis of blocks 2 and 3 unlike INMARSAT-A and the following text is therefore the subject of further study.

A.1 General

Appendix 43 of the Radio Regulations defines an international identification plan for ships participating in the maritime mobile services. The ship station identity consists of 9 digits and is composed as follows:

$$M_1I_2D_3X_4X_5X_6X_7X_8X_9$$

where the digits $M_1I_2D_3$ determine the ship's nationality.

For ships participating in systems operated by INMARSAT, the main part of this Recommendation specifies a format of the INMARSAT mobile number as follows:

$$T\ X_1X_2\ ...\ X_k$$

The purpose of the digit T is explained in 4.

For maritime applications, the number can be regarded as being composed of three blocks as follows:

T	X_1X_2 ... X_n	X_{n+1} ... X_k
Block 1	Block 2	Block 3

where the digit in block 1 is the digit T, the digits in block 2 are related to the ship station identity as explained below, and block 3 contains digits which are used for other purposes (e.g. INMARSAT mobile terminal number). In some INMARSAT systems, block 3 may be empty.

NOTES

1 For the INMARSAT-A system, INMARSAT applies a ship numbering plan which is not related to the ship station identification plan of the Radio Regulations. In this numbering plan the digit T takes the fixed value T = 1.

2 For INMARSAT-B and -C systems, the digit X_1 may take the values 8 or 9 for non-maritime applications. In this case, the digits in block 2 are not related to the ship station identification plan.

A.2 Constraints on ship station identification and numbering

A.2.1 To meet the requirements of the international telex service, and in particular the signalling conditions specified in Recommendations U.11 and U.12, the INMARSAT mobile number should not contain more than 9 digits.

A.2.2 The new numbering plan must cater for the following:

- identification for calls to ship-board terminal equipment connected to the ship earth station;
- the possibility of several ship earth stations on the same ship where all ship earth stations have a number associated with the unique ship station identity of the ship;
- the capability of supporting multichannel ship earth stations.

These capabilities may require digits in block 3 of the INMARSAT mobile number, thus reducing the available space for block 2.

A.3 Applications of ship station identity

A.3.1 Digit capacity in block 2

The INMARSAT-A system can only support 6 digits in block 2 because of the addressing capacity on the radio path.

The addressing capacity of INMARSAT-B and -C systems on the radio path can cater for up to 7 digits in block 2. However, the limited digit capacity of the terrestrial networks puts the following initial constraints to the number of digits in block 2:

- for the INMARSAT-B system, the initial digit capacity in block 2 is 6 digits in order to allow sufficient capacity in block 3 for supporting the capabilities listed in A.2.2 above;
- for the INMARSAT-C system, the initial digital capacity in block 2 is 6 digits to allow sufficient capacity in block 3 for supporting the possibility of identifying several terminal equipments connected to a ship earth station and of several ship earth stations on the same ship.

A.3.2 Mapping between ship station identity and digits in block 2

The mapping between ship station identity and digits in block 2 is shown in Table A.1.

TABLE A.1/F.125

Mapping between ship station identity and digits in block 2 of the INMARSAT mobile station number

Ship station identity			XXX XXX 000	XXX XXX 0X0	XXX XXX 0XX
Block 2 mapping	Size of block 2	6 digits	XXX XXX	Mapping not possible	Mapping not possible
X Any digit between zero (0) and nine (9) 0 Zero (0)					

For ship earth stations, the ship station identity is thus derived from the digits in block 2 by adding 0s at the end until the identity consists of 9 digits.

The digit T in block 1 determines the type of ship earth station and, implicitly, the number of digits in block 2. The relationship is shown in Table A.2. Further details of the number structure are given in the main part of the Recommendation.

TABLE A.2/F.125

Relationship between the digit T and the format of the ship station identity in 12 digit INMARSAT mobile international numbers

Value of digit T	INMARSAT standard system	Number of digits in block 2	Format of ship station identity
0	A	(Note 1)	(Note 1)
1	A	6	(Note 2)
2	Reserved	–	–
3	B	6	XXX XXX 000
4	C	6	XXX XXX 000
5	Aeronautical	(Note 3)	(Note 3)
6	Reserved (INMARSAT-M)	6	(Note 5)
7	Reserved	–	–
8	A	(Note 4)	(Note 4)
9	Future expansion	Further study	Further study

NOTES

1 Group call address (see Annex B for format of group call addresses).

2 The INMARSAT mobile number is not related to the ship station identification plan of Appendix 43, Radio Regulations.

3 The numbering plan for the aeronautical-satellite service is not related to the ship station identification plan of Appendix 43, Radio Regulations.

4 See clause 4 for the use of this T digit.

5 INMARSAT-M (excluding telex).

A.3.3 Ships equipped with several INMARSAT systems

The ship station identity for such ships is the one derived from the ship earth station standard having the smallest size of block 2. This applies only if the numbering systems for the ship earth station standards are related to the ship station identification plan.

Annex B

Group call numbering scheme for the INMARSAT system

(This annex forms an integral part of this Recommendation)

B.1 Categories for group call services

At present, four different categories of group call service have been envisaged within the maritime mobile-satellite service.

B.1.1 National group calls

The category is defined to address all ships of the same nationality.

B.1.2 Fleet group calls

This category is defined to address all ships within one fleet.

B.1.3 Selected group calls

This category is defined to address a number of ships having a community of interest irrespective of nationalities or fleets, and forming a predefined group.

B.1.4 Area group calls

This category is defined to address all ships of any nationality located within a predetermined geographical area.

B.2 Group call formats

B.2.1 The general group call format is T $X_1X_2X_3X_4X_5X_6X_7X_8$, where the digits T $X_1X_2X_3X_4X_5X_6X_7X_8$ take the values in B.2.2 for INMARSAT.

B.2.2 The group call numbering schemes for the INMARSAT-A system will use eight decimal digits X_1 ... X_8 following the T digit, with T = 0, allocated as follows:

$M_2I_3D_40_50_60_70_80_9$	National group call
$M_2I_3D_4F_5F_6F_7F_8F_9$	Fleet group call
$0_20_3S_4S_5S_6S_7S_8S_9$	Selected group call
$0_20_30_4A_5A_6A_7A_8A_9$	Area group call

where $M_2 \neq 0$ $M_2 \neq 1$ $F_5 \neq 0$ $S_4 \neq 0$.

For T = 1 or 8, the group call number is not valid.

B.2.3 For INMARSAT-B and INMARSAT-Aeronautical, the format of the digits X_1 ... X_8 is for further study.

B.2.4 The MIDs in national and fleet group numbers are those allocated in Table 1 of Appendix 43, Radio Regulations [1].

B.2.5 In accordance with category 4 of the above-mentioned appendix, the particular MID reflects only the country allocating the group call identity and, therefore, does not prevent group calls to fleets containing more than one ship nationality. Allocation of selected group numbers should be avoided when the same group could equally well be assigned a fleet group number.

B.2.6 National group numbers and fleet group numbers should be allocated by countries. Selected group numbers and area group numbers as applicable to the INMARSAT system should be allocated by INMARSAT: allocation of such numbers may require cooperation with other organizations.

B.2.7 A country having assigned a national group or fleet group number should notify the Director-General of INMARSAT if those numbers are going to be used within the INMARSAT system.

Reference

[1] Radio Regulations, Appendix 43, ITU, Geneva, 1982, revised in 1985, 1986 and 1988.