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TELEPHONE/ISDN NUMBERING PLAN FOR THE MOBILE-SATELLITE SERVICES OF INMARSAT

ITU-T Recommendation E.215

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. 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.

ITU-T Recommendation E.215 was revised by the ITU-T Study Group II (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

2 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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CONTENTS

Page

1 Introduction 1
1.1 Purpose 1
1.2 Terminology 1
1.3 Basic considerations 1
2 Format of INMARSAT mobile international number 2
3 Telephone/ISDN country codes for INMARSAT applications 2
4 Format of INMARSAT mobile number 2
4.1 General format 2
4.2 Formats for INMARSAT-A system 3
4.3 Formats for INMARSAT-B system 4
4.4 Format for INMARSAT-C system 5
4.5 Format for INMARSAT aeronautical system 5
4.6 Formats for INMARSAT-M system 7
4.7 Future INMARSAT systems 7
5 Digit analysis 7
6 Presentation of INMARSAT mobile numbers in directories 8
6.1 General 8
Annex A – Use of ship station identification for maritime applications of systems operated by INMARSAT 8
A.1 General 8
A.2 Constraints on ship station identification and numbering 9
A.3 Application of ship station identity 9
Annex B – Group call numbering scheme for the INMARSAT system 11
B.1 Categories for group call services 11
B.2 Group call formats 11
Annex C – Structure of the on-board identification digits in the INMARSAT numbering plan 12
C.1 Introduction 12
C.2 Proposed structure 12
C.3 Allocation 12

TELEPHONE/ISDN NUMBERING PLAN FOR THE MOBILE-SATELLITE SERVICES OF INMARSAT

(Melbourne, 1988; revised at Helsinki, 1993)

1 Introduction

1.1 Purpose

The purpose of this Recommendation is to specify a telephone/ISDN numbering plan for mobile earth stations in systems operated by INMARSAT. Such systems may include maritime land based 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 telex numbering plan for INMARSAT is contained in Recommendation F.125. This Recommendation and Recommendation F.125 are designed to be as similar as possible.

For the purposes of this Recommendation, the following terms apply.

1.2.1 **ship station identity**: as defined in the Radio Regulations, Appendix 43. See also Recommendation E.210.

1.2.2 **INMARSAT mobile international number**: the number following the international prefix which identifies terminal equipment connected to an *INMARSAT* mobile earth station for access from a public network.

1.2.3 **INMARSAT mobile number**: the part of the *INMARSAT mobile international* number which follows a country code allocated to the INMARSAT system.

1.2.4 Other definitions

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

1.2.5 On-board identification digits

These digits are the part of the mobile earth station number used for identifying

- a specific terminal equipment on board;
- a specific mobile earth station.

1.3 Basic considerations

The considerations which form the basis of the numbering plan are

1.3.1 that it shall be possible to identify an *INMARSAT* mobile earth station uniquely from the *INMARSAT mobile number*;

1.3.2 that the *INMARSAT mobile number* should have a format where the same number could be used for access from all types of public networks;

1.3.3 that the number of three-digit country codes required for supporting future INMARSAT requirements should be as few as possible;

1.3.4 that different routings could be used for calls to mobile earth stations designed to different INMARSAT system standards;

1.3.5 that Administrations and INMARSAT could apply different charging and accounting rates to different INMARSAT system standards;

1.3.6 that the numbering plan should provide capacity for on-board identification or direct access to a specific terminal equipment connected to a mobile earth station, e.g. on board a ship;

1.3.7 that the numbering plan should support access to multi-channel mobile earth stations;

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

1.3.9 that the length of the *INMARSAT mobile international number* should comply with Recommendation E.164 and will initially be limited to 12 digits (see also Recommendation E.165);

1.3.10 that, for maritime satellite applications, the ship earth station numbering plan should support access to several ship earth stations in the same ship within one *ship station identity*;

1.3.11 that the radio regulations make provision for the allocation of additional MIDs for a specific country when necessary.

2 Format of INMARSAT mobile international number

The general format of the *INMARSAT mobile international number* is

$$CCC\ T\ X_1 \ldots X_k$$

where CCC is a three-digit country code allocated to INMARSAT and $T\ X_1 \ldots X_k$ is the *INMARSAT mobile number*. The format of the *mobile number* is given in 4.

3 Telephone/ISDN country codes for INMARSAT applications

Telephone/ISDN country codes for INMARSAT applications are given in Table 1.

TABLE 1/E.215

Telephone/ISDN country codes for INMARSAT applications

Country code	Application
871	Atlantic-East Ocean Region, INMARSAT
872	Pacific Ocean Region, INMARSAT
873	Indian Ocean Region, INMARSAT
874	Atlantic-West Ocean Region, INMARSAT

4 Format of INMARSAT mobile number

4.1 General format

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 CCITT Secretariat would be responsible for co-ordinating the allocation of new T digits with the competent Study Groups.

TABLE 2/E.215

Value of T digit for various applications

T digit	Application
0	Group call in INMARSAT-A system (see 4.2.2)
1	Ordinary call in INMARSAT-A system (see 4.2.1)
2	Reserved for future use
3	Ordinary call in INMARSAT-B system (see 4.3)
4	Ordinary call in INMARSAT-C system (see 4.4)
5	Ordinary call in INMARSAT aeronautical system (see 4.5)
6	Ordinary call in INMARSAT-M system (see 4.6)
7	Reserved for future use
8	Expedient access to special service terminations in INMARSAT-A system (see 4.2.3)
9	Reserved for future expansion (see 4.7)

4.2 Formats for INMARSAT-A system

4.2.1 Ordinary calls

The number format used for ordinary calls to ship earth stations in the 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 to ships by INMARSAT.

The length of the *INMARSAT mobile number* will be 7 digits, making the length of the *INMARSAT mobile international number* equal to 10 digits.

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 takes values as shown in Annex B.

The length of the *INMARSAT mobile number* will be 9 digits, making the length of the *INMARSAT mobile international number* equal to 12 digits.

4.2.3 Access to special service terminations on board the ship

In order to handle automatic data and facsimile calls in the INMARSAT-A system, the following format is proposed (see also Recommendation E.216):

$$8\ Y\ 1\ X_1X_2X_3X_4X_5X_6 \text{ (9 digits)}$$

where 8 corresponds to the T digit, the digits X_1 through X_6 take the same value as in 4.2.1 and the digit Y determines the service termination. Table 3 lists the values of digit Y for various applications.

NOTES

1 The *INMARSAT mobile international number* will then have the following format:

$$CCC\ 8\ Y\ 1\ X_1X_2X_3X_4X_5X_6 \text{ (12 digits)}$$

2 The digits Y, 1, etc., need not be analyzed in the international network for routing or charging purposes.

TABLE 3/E.215

Values of digit Y for various applications

Y digit	Application
0	Reserved for future use
1	Facsimile, group 3
2 (see Note)	Virtual call packet mode data service, Recommendation X.25
3 through 9	Reserved for future use

NOTE – The number $8\ 2\ 1\ X_1X_2X_3X_4X_5X_6$ is not available for subscriber dialling in the PSTN or ISDN. The number will be used by interworking units between packet switched public data networks and the PSTN in order to forward data calls to mobile ship earth stations.

4.3 Formats for INMARSAT-B system

4.3.1 Ordinary calls

For ordinary calls to ship earth stations in the INMARSAT-B system, the format shall be initially:

$$3\ M_1I_2D_3X_4X_5X_6Z_1Z_2 \text{ (9 digits)}$$

where 3 corresponds to the T digit and the digits $M_1I_2D_3X_4X_5X_6$ are the first 6 digits of the *ship station identity* MIDXXX000 (see Annex A). The digits Z_1Z_2 may be used for identifying terminal equipment connected to a ship earth station, for discriminating between channels of multi-channel ship earth stations and for discriminating between several ship earth stations on the same ship.

The length of the *INMARSAT mobile number* will be 9 digits, making the length of the *INMARSAT mobile international number* equal to 12 digits.

Special requirements on the allocation of the digits Z_1Z_2 are given in Annex C.

The number format

$$3\ X_1X_2X_3X_4X_5X_6Z_1Z_2 \text{ (9 digits)}$$

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

The length of the *INMARSAT mobile number* will be 9 digits, making the length of the *INMARSAT mobile international number* equal to 12 digits.

4.3.2 Group calls

For further study.

4.3.3 Future extension of the number

The *INMARSAT mobile number* may be extended to 12 digits when the number capacity of the international network is increased (see Recommendation E.165). This is for further study. Annex C proposes a method by which this expansion can be made in order to allow two number lengths to coexist on the same T digit.

4.4 Format for INMARSAT-C system

4.4.1 Ordinary calls – Maritime mobile

For ordinary calls to ship earth stations in the INMARSAT-C system, the format shall be initially:

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

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. In the latter case, X_7X_8 becomes Z_1 and Z_2 and the principle of Annex C should be followed.

The number format

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

where the digit X_1 takes the values 8 or 9 is reserved for INMARSAT applications.

The length of the *INMARSAT mobile number* will be 9 digits, making the length of the *INMARSAT mobile international number* equal to 12 digits.

4.4.2 Ordinary calls – Land mobile

For ordinary calls to land based mobile earth stations in the INMARSAT-C system, the format shall be initially:

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

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.

The length of the *INMARSAT mobile number* will be 9 digits, making the length of the *INMARSAT mobile international number* equal to 12 digits.

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.

4.4.4 Future extension of the number

For maritime satellite applications, the *INMARSAT mobile number* used in the INMARSAT-C system may be extended to 12 digits when the numbering capacity of the international network is increased (see Recommendation E.165) in a way similar to those of the B system (see 4.3.3). This is for further study.

4.5 Format for INMARSAT aeronautical system

The general format of 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 digit X_1 through X_8 ensures the provision of two fundamental requirements for the INMARSAT (aeronautical) mobile number, namely:

– 8-digit *primary* address for all aircraft; and

– 6-digit *alternate* address and two DDI digits for selected aircraft.

4.5.1 Primary address

For primary addressing requirements the number format will be as follows:

$$5\ X_1X_2X_3X_4X_5X_6X_7X_8$$

T digit = 5

For X_1 = 0 to 7,

the digits $X_1X_2X_3X_4X_5X_6X_7X_8$ are the *primary* address of aircraft earth station, where X_n is the octal representation of the corresponding 3 bits of the 24 bit ICAO technical address, and

X_2 to X_8 = 8 or 9 are reserved for future use.

The *primary* address is applicable to both aeronautical public correspondence (APC) telephony (and other circuit-mode) and APC packet-mode (data) services.

4.5.2 Alternate address

In order to provide a DDI capability for certain aircraft, the number format will be as follows:

For X_1 = 8,

the digits $X_1X_2X_3X_4X_5X_6Z_1Z_2$ are composed of a 6-digit *alternate* address of an aircraft earth station followed by a 2-digit extension number,

where

X_n are arbitrarily assigned digits to uniquely identify a particular aircraft earth station; and

Z_n are DDI digits to uniquely identify individual on-board terminals;

the *alternate* address is only to be used for APC telephony (and other circuit-mode) service;

the *alternate* address shall not be used for APC packet-mode (data) service; and

the relationship between the ICAO 24-bit technical address and the INMARSAT mobile number will be determined by means of an algorithmic association at the aeronautical ground earth station (GES).

In order to accommodate the numbering format proposals for access to special facilities provided at INMARSAT aeronautical ground earth stations it will be necessary to introduce a new clause in this Recommendation. It is suggested that this clause be called “Special facilities for access to mobile services”. Thus a new subclause 4.5.3 for INMARSAT aeronautical would read:

4.5.3 Special facilities

In order to provide access to special facilities provided at INMARSAT aeronautical ground earth stations for fixed network subscribers, the following number format is to be used:

$$5\ X_1X_2X_3X_4X_5X_6X_7X_8$$

For X_1 = 9, the digits X_1 ... X_n are of variable length and used for the special purpose of identifying *special facilities* at the ground earth station,

where

X_2 ... X_n is for further study [tentatively, X_2 = 6 is reserved for special applications, which are unique to individual ground earth stations];

access to ground earth station *special facilities*, using X_1 = 9, will be available from both PSPDN and the PSTN/ISDN; however, the definition and means to access the various facilities available, may be different for PSPDN and PSTN/ISDN access.

4.6 Formats for INMARSAT-M system

4.6.1 Maritime mobile – Ordinary calls

For ordinary calls to ship earth stations in the INMARSAT-M system, the format shall be initially:

$$6\ M_1I_2D_3X_4X_5X_6Z_1Z_2 \text{ (9 digits)}$$

where 6 corresponds to the T digit and the digits $M_1I_2D_3X_4X_5X_6$ are the first six digits of the ship station identity MIDXXX000 (see Annex A). The digits Z_1Z_2 may be used for identifying terminal equipment connected to a ship earth station, for discriminating between several ship earth stations on the same ship and for identification of special INMARSAT service types, e.g. group 3 facsimile service.

The length of the *INMARSAT mobile number* will be 9 digits, making the length of the *INMARSAT mobile international number* equal to 12 digits.

Special requirements on the allocation of the digits Z_1Z_2 are given in Annex C.

4.6.2 Land mobile – Ordinary calls

For ordinary calls to land based mobile earth stations in the INMARSAT-M system, the format shall be initially:

$$6\ 8/9M_2C_3C_4X_5X_6X_7X_8 \text{ (9 digits)}$$

where 6 corresponds to the T digit and the digits 8 or 9 signify a land based mobile terminal and the digits $M_2C_3C_4$ correspond with the mobile country codes listed in Annex A/E.212.

The length of the *INMARSAT mobile number* will be 9 digits, making the length of the *INMARSAT mobile international number* equal to 12 digits.

4.6.3 Group calls

For further study.

4.6.4 Future extension of the number

The INMARSAT *mobile number* may be extended to 12 digits when the number capacity of the international network is increased (see Recommendation E.165). This is for further study. Annex C proposes a method by which this expansion can be made in order to allow two number lengths to coexist on the same T digit.

4.7 Future INMARSAT systems

T digits should 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, then further capacity may be made available by using T = 9 followed by an additional digit (U) as follows::

$$9\ U\ X_1X_2\ ...\ X_k$$

where the digits X_1 ... 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.

The CCITT Secretariat would be responsible for co-ordinating the allocation of new U digits with the competent Study Groups.

5 Digit analysis

If different routing and/or accounting applies to different INMARSAT systems, then the digits CCCT need to be analyzed at international exchanges.

If the routing capacity is increased by using T = 9 (see 4.6), then the digits CCC9U need to be analyzed.

The above requirements on number analysis are in compliance with Recommendation E.164. See also Recommendation E.165.

The digits Y, 1, etc., following CCC 8 (see 4.2.3) need not be analyzed in the international network for routing or charging purposes.

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 country code to be used and instruction for the subscribers should be contained in general parts of the directories.

The use of digits 8 Y in the format for the INMARSAT-A system in 4.2.3 should also be explained in the general parts of the directories. This information should also include indications as to whether or not these numbers are accepted for calls to one or more ocean areas.

The subject on 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 for reservation on the use of this annex:

The INMARSAT-B, -M 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. on-board identification). 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, -M and C systems, the digit X_1 may take either of the values 8 or 9 for future 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 The present number capacity of the PSTN requires that the *INMARSAT mobile number* consist of 9 or fewer digits. When the number capacity of the PSTN/ISDN is increased to 15 digits, then the *INMARSAT mobile number* can consist of up to 12 digits.

Since the same *INMARSAT mobile number* should be used for telex and data transmission services, further constraints may be put on the number length.

A.2.2 The new numbering plan must cater for capabilities as follows:

- provision of a reasonable on-board identification capacity for calls to ship board terminal equipment connected to the ship earth station;
- 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;
- capability of supporting multi-channel 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 Application 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, -M 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 on the number of digits in block 2:

- For the INMARSAT-B and -M systems, the initial digit capacity in block 2 is 6 digits to allow sufficient capacity in block 3 for supporting the capabilities listed in A.2.2 above. In the future (see Recommendation E.165) the capacity of block 2 may be extended to 8 or 9 digits.
- 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. In the future, the capacity of block 2 may be extended to 7 or more digits.

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

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

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.

In order to distinguish between *INMARSAT mobile numbers* consisting of 9 and 12 digits (if they coexist), the digit X_7 of the ship station identity (see Recommendation E.210) must take the fixed value 0. This constraint is *not valid* when only 12 digit numbers exist in the future (see also Annex C).

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 text of this Recommendation.

TABLE A.1/E.215

Mapping between ship station identity and digits in block 2 of the 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
		7 digits	XXX XXX 000	Mapping not possible	Mapping not possible

X Any digit between zero (0) and nine (9).

0 Zero (0).

TABLE A.2/E.215

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

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

NOTES

1 Group call address. See Annex B for format of group 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 4.2.3 for the use of this T digit.

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 $TX_1X_2X_3X_4X_5X_6X_7X_8$, where the digits $TX_1X_2X_3X_4X_5X_6X_7X_8$ take the values in B.2.2 for INMARSAT-A and the values in B.2.3 for other INMARSAT standards.

B.2.2 The group call numbering schemes for the INMARSAT-A system will use 8 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, -M 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 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.

Annex C

Structure of the on-board identification digits in the INMARSAT numbering plan

(This annex forms an integral part of this Recommendation)

C.1 Introduction

Within the numbering scheme, two digits Z_1Z_2 have been allocated (see 4.3.1 and 4.4.1) to on-board identification. The purpose of these digits is to provide means for identifying different ship earth stations on the same ship, and different instruments, e.g. telephone instrument and a facsimile machine, connected to the same ship earth station.

Also, the present length of the *INMARSAT mobile international number* is limited to 12 digits. After 1996 it will be possible to increase the number length to 15 digits (see Recommendation E.165).

It is considered that the above aspects can be met by careful selection of the significance and values of Z_1Z_2.

C.2 Proposed structure

As outlined earlier, it is necessary for Z_1Z_2 to achieve two identification roles, i.e. station and instrument. It is considered that this can be accomplished by allocating Z_1 to multi-ship earth station identification and Z_2 to multi-instrument identification.

This structure would permit the uniform allocation of numbers to be achieved and would allow the growth of ship earth stations to be independent of the growth of instruments on any one ship earth station.

Further, in order to allow the future expansion of the numbering length, it is proposed that Z_1 should *never* be equal to 0 (zero) and the eighth digit of a 12-digit ship earth station number should always be equal to 0 (zero) as long as these two number lengths coexist for the same value of T digit, ie.

T MID $XXXZ_1Z_2$ (9 digits with $Z_1 \neq 0$)

T MID $XXX0XXZ_1Z_2$ (12 digits)

The above approach would then allow the unambiguous identification of 9-digit and 12-digit ship earth station numbers on the same T digit.

NOTE – The above constraint on the eighth digit is not required in the future when only 12-digit numbers exist in the INMARSAT system.

C.3 Allocation

Therefore, from the above, a ship with one ship earth station and one instrument Z_1Z_2 would equal 10. If another instrument were added, then Z_1Z_2 would equal 11 for this instrument.

If a ship had two earth stations of the same standard and one instrument attached to each, then the values of Z_1Z_2 would be 10 for one station, and 20 for the second station. If a second instrument were added to the second station, then the value of Z_1Z_2 would be 21 for this instrument.

Should it be necessary to allocate more than ten instruments per ship earth station, then another value of Z_1 would be allocated to the earth station, e.g. for the tenth instrument Z_1Z_2 would be equal to 19 and for the eleventh instrument 20 would be allocated or the next free value Z_1.

Table C.1 gives some illustrations of the above allocations.

TABLE C.1/E.215

Examples of Z_1Z_2 allocation for ship earth stations with the same T digit

Ship earth station	Instrument	Z_1	Z_2
Multi-ship earth stations			
X Y	Telephone Telephone	1 2	0 0
Multi-ship earth stations and multi-instruments			
X	Telephone	1	0
	Facsimile	1	1
Y	Telephone	2	0
Z	Telephone	3	0
	Facsimile	3	1
	Telephone	3	2
	Telephone	3	3
X	Telephone	1	0
	Telephone	1	1
	Facsimile	1	2
	Telephone	1	9
	Telephone	3	0
Y	Telephone	2	0
	Facsimile	2	1
Z	Telephone	4	0