

LAND MOBILE SATELLITE COMMUNICATIONS: A FURTHER DEVELOPMENT IN INTERNATIONAL SPACE LAW (PART II)

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Introduction

In the first part of this article, we set out the background to recent amendments to the INMARSAT Convention and Operating Agreement.¹ These extend the competence of the Organization, enabling it to provide land mobile-satellite services. We also described the amendment process. It is now necessary to consider in some detail the amendments themselves.

The Land Mobile Amendments

The crucial amendments are to Article 3 of the INMARSAT Convention, which sets out the purposes of the Organization. Paragraphs (1) and (2) now read as follows:

(1) The purpose of the Organization is to make provision for the space segment necessary for improving maritime communications and, as practicable, aeronautical and land mobile communications and communications on waters not part of the marine environment, thereby assisting in improving communications for distress and safety of life and communications for air traffic services, the efficiency and management of transportation by sea, air and on land, maritime, aeronautical and other public correspondence services and radiodetermination capabilities.

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The views expressed in this article are those of the authors and are not necessarily those of any organization with which the authors are or have been connected.

1. See von Noorden & Dann, *Land Mobile Satellite Communications: A Further Development in International Space Law (Part I)*, 17 J. SPACE L. 1 (1989). See also Convention on the International Maritime Satellite Organization (INMARSAT), Sept. 3, 1976, 31 U.S.T. 1, T.I.A.S. No. 9605 (hereinafter "Convention"); Operating Agreement on the International Maritime Satellite Organization (INMARSAT), July 16, 1979, 31 U.S.T. 1, T.I.A.S. No. 9605 (hereinafter "Operating Agreement"). For the "amendments" herein discussed, see Assembly/6/16,4,2,7 and Annexes IV to XI,

- (2) The Organization shall seek to serve all areas whether there is a need for maritime, aeronautical and other mobile communications.

This text therefore extends the competence of the Organization into two new areas: land mobile communications and communications on waters not part of the marine environment.

The introduction of the concept of "waters not part of the marine environment" should be explained. The original version of Article 3(1) provided that the purpose of the Organization was ". . . to make provision for the space segment necessary for improving *maritime* communications, thereby assisting in improving . . . efficiency and management of *ships, maritime public correspondence services* . . ." Article 1(f) provided that "ship" meant "a vessel at any time operating in the marine *environment* . . ." (emphases added).

The phrase "marine environment" seems to have a wider meaning than "sea": it includes areas close to or associated with the sea which are not part of the sea itself, such as the air space immediately above the sea. "Maritime" seems to have its ordinary meaning, namely, that which relates to the sea as opposed to other waters, such as inland lakes and rivers. There is no reason to suppose that the word is used in the extended sense found in some national legal systems, so as to apply to inland waters which are navigable by sea-going ships.² Indeed, the use in a related context of the phrase "marine environment" points strongly in the other direction because it is extremely difficult to interpret "marine environment" so as to include any area of fresh water.

It is obvious that the high seas, territorial sea, contiguous zone, archipelagic waters, exclusive economic zone and continental shelf, as defined in the U.N. Law of the Sea Convention (1982), are all within the "marine environment." Communications to or from these areas are "maritime communications." The same is not always true of internal waters.³ These consist in part of sea areas, such as ports and those bays which are behind the baseline of the territorial sea. They also consist of inland waters, such as lakes, canals and rivers. Therefore, internal waters are partly within the marine environment and partly outside. It may be suggested that the division occurs where waters cease to be tidal.⁴

2. In the United States, for example, admiralty jurisdiction extends to navigable, non-tidal waters: Geoffrey Marston, *Admiralty Law*, in *ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW* 1, 3 (Bernhardt ed. 1989).

3. For the concept of internal waters, see M. SORENSEN, *MANUAL OF PUBLIC INTERNATIONAL LAW* 332 (1968).

4. Although this interpretation is based principally on the ordinary meaning of the words "marine" and "maritime", the division between tidal and non-tidal waters is still relevant in some systems of municipal admiralty law; see e.g., *The Powstaniec Wieikopolski*, 1 All E.R. (1989) (law of salvage in the United Kingdom). This distinction is not always made in municipal law, however; see note 2, above.

INMARSAT's original competence was to provide maritime communications. This does not mean that, for example, ships sailing up-river from an estuary have been prohibited from using the INMARSAT system. However, the strict view must be that INMARSAT has provided services to such ships on an ancillary basis.⁵ It was considered desirable to provide an express competence for such services at the same time as providing an express competence for services to land-based users. The inelegant phrase "waters not part of the marine environment" was chosen for want of any better. The expression "internal waters" could not be used because it includes certain sea areas. The expression "internal waters" is sometimes used in the same sense. It is arguable that the phrase "land mobile communications" includes communications to and from waters not part of the marine environment. This is a common meaning in commercial usage. However, it was thought better to avoid ambiguity by referring specifically to such waters.

The effect of the amendments, therefore, is to give INMARSAT the competence to provide all types of mobile-satellite communications. Taking this into account, one of the amendments originally proposed by the Federal Republic of Germany was to change the name of the Organization to the "International Mobile Satellite Organization." There was no proposal to change the official acronym "INMARSAT," which has achieved wide recognition. The Meeting of Experts⁶ considered the change of name "INMARSAT," but did not reach a consensus on the proposal.⁷

Some parties considered that it would be premature to change the name at a time when the Organization was already well-established as a provider of maritime communications but was about to provide regular aeronautical and land mobile services for the first time. It was also felt by some parties that the original maritime purpose of the Organization should be reflected in its name. The proposal to change the name was not adopted by the Assembly although the Assembly noted that the Council will keep under review the possibility of changing the name of the Organization, taking into account the development of new services.⁸

The Assembly did, however, adopt several amendments which were consequential upon the broadening of the competence of the Organization. In the Preamble to the Convention, as amended, it is taken into account that ". . . world trade is dependent upon transportation by sea, air *and on land*" (emphasis added). It is also affirmed that ". . . a maritime satellite system shall also be open for aeronautical and land mobile communication and communications on waters not part of the marine environment for the benefit of all nations." This paragraph reflects neatly both the maritime

5. The provision of services by INMARSAT on an ancillary basis is discussed in Part I of this article. Von Noorden & Dann, *supra* note 1, at 4-5.

6. *Id.* at 10-11.

7. ASSEMBLY/6/3, ATTACHMENT, ANNEX V, at 1.

8. ASSEMBLY/6/REPORT, PARA. 4.2.6.

origins of the Organization and the evolution of a shared mobile-satellite system.

In Article 1 of the Convention, which sets out various definitions, the definition of "ship" in paragraph (f) is extended so as to mean ". . . a vessel of any type operating in the marine environment *or on waters not part of the marine environment . . .*" (emphasis added). Two new definitions are added to Article 1:

(i) "Mobile earth station" means an earth station in the mobile-satellite service intended to be used while in motion or during halts at unspecified points.

(j) "Land earth station" means an earth station in the fixed-satellite service or, in some cases, in the mobile-satellite service, located at a specified fixed point or within a specified area on land to provide a feeder link for the mobile-satellite service.

These definitions are taken from the Radio Regulations. Both definitions are of generic terms: a mobile earth station may be a ship earth station, aircraft earth station or land mobile earth station. Correspondingly, a land earth station may be a coast earth station, aeronautical earth station or base earth station.⁹

The amendments to Article 7 of the Convention, which deals with access to the space segment, illustrate a drafting problem which recurred in other amendments. Paragraph (1) originally provided as follows:

The INMARSAT space segment shall be open for use by ships and aircraft of all nations on conditions to be determined by the Council. In determining such conditions, the Council shall not discriminate against ships or aircraft on the basis of nationality.

In extending this provision to take into account land mobile communications, one possible approach would have been to add a reference to "land transport" or "vehicles." Alternatively, as one Party proposed, one could remove the specific reference to ships and aircraft and substitute a generic term, such as "mobile units" which would include land transport. The alternative approach has the obvious advantage of simplicity, although there is perhaps a symbolic value in enumerating the user groups which INMARSAT is committed to serve.

Both approaches, however, raise problems. First, land mobile communications are not confined to communications to and from vehicles.

9. This terminology is taken from the International Telecommunications Union, Radio Regulations, Dec. 6, 1979, art. 1, sec. IV.

As previously mentioned,¹⁰ there are mobile earth stations which are transportable but are not intended for use on vehicles. There are also future prospects for mobile earth stations which are small enough to be carried on the person. The second problem is that, whereas ships and aircraft both have a nationality under public international law, the various forms of land transport do not.

Taking into account these considerations, Article 7(1) of the Convention is now amended as follows:

The INMARSAT space segment shall be open for use by ships and aircraft of all nations and by mobile earth stations on land on conditions to be determined by the Council. In determining such conditions, the Council shall not discriminate among ships or aircraft or mobile earth stations on land on the basis of nationality.

The decision to refer to the mobile earth station rather than the vehicle carrying it overcomes both problems. It takes account of the fact that mobile earth stations on land may not be mounted on vehicles. It also makes it easier to establish the national connection which is necessary in this and in other provisions of the INMARSAT Convention and Operating Agreement. It is difficult to speak of the "nationality" of a vehicle in international law; it is easier to speak of the "nationality" of a mobile earth station. A mobile earth station can be said to have the "nationality" of the State which licenses the establishment of that mobile earth station, pursuant to Article 24 of the ITU Radio Regulations. However, this is not a connection of nationality in the strict sense. This explains why one further drafting approach could be excluded: that of deleting the specific references to ships and aircraft and substituting a general reference to "mobile earth stations."

The same problem of national attribution arose in two other contexts. Article 32 of the Convention provided in part as follows:

(3) On becoming a Party to this Convention, or at any time thereafter, a State may declare, by written notification to the Depositary, to which Registers of ships, to which aircraft operating under its authority, and to which land earth stations under its jurisdiction, the Convention shall apply.

The latest amendments modify this text so that it now reads: ". . . to which Registers of ships, to which aircraft and mobile earth stations on land operating under its authority, etc."

10. See von Noorden & Dann, *supra* note 1, at 3.

A similar amendment was introduced in Article V(2) of the INMARSAT Operating Agreement, which deals with the calculation of investment shares in the Organization. The background to this provision should be explained. Article 5(1) of the Convention provides that the Organization shall be financed by the contributions of Signatories, and that each Signatory shall have a financial interest in the Organization in proportion to its investment share which shall be determined in accordance with the Operating Agreement. Article V(1) of the Operating Agreement provides that investment shares of Signatories should be determined on the basis of utilization of the INMARSAT space segment. Article V(2) of the Operating Agreement provided as follows:

For the purpose of determining investment shares, utilization in both directions shall be divided into two equal parts, a ship or aircraft part and a land part. The part associated with the ship or aircraft where the traffic originates or terminates shall be attributed to the Signatory of the Party under whose authority the ship or aircraft is operating . . .

The latest amendments modify this test as follows:

For the purpose of determining investment shares, utilization in both direction shall be divided into two equal parts, a mobile earth station part and a land part. The part associated with the ship or aircraft or mobile earth station on land where the traffic originates or terminates shall be attributed to the Signatory of the Party under whose authority the ship or aircraft or mobile earth station on land is operating . . .

This illustrates the pragmatic approach adopted in drafting the amendments. In the first sentence, the generic term "mobile earth station" is used because it is both appropriate and convenient. In the second sentence, however, it is necessary to enumerate in turn "ship or aircraft or mobile earth station on land," for the reasons discussed in relation to Article 7 of the Convention.

During the amendment process, one party proposed that land mobile-satellite communications should have a lower priority than maritime or aeronautical communications. This proposal was rejected. The three types of communications are provided on the same basis, subject only to the distinction made in Article 3(1) of the Convention: "the purpose of the Organization is to make provision for the space segment necessary for improving maritime communications and, as practicable, aeronautical and land mobile communications and communications on waters not part of the marine environment . . ." The distinction introduced by the words "as

practicable" was first made in the 1985 amendments. The intention was to ensure that the Organization had the discretion, but not the obligation, to provide aeronautical-satellite services.¹¹ This distinction has been carried through in the recent amendments, so that land mobile-satellite communications are to be offered on the same basis as aeronautical-satellite communications. However, this does not create any order of priority between the three types of communications; insofar as the Organization has decided to offer aeronautical and/or land mobile communications, these will have the same priority as maritime communications.

In one other respect, both aeronautical and land mobile communications are distinguished from maritime communications. Article 8 of the Convention originally provided as follows:

A Party shall notify the Organization in the event that it or any person within its jurisdiction intends to make provision for, or initiate the use of, individually or jointly, separate space segment facilities to meet any or all of the purposes of the INMARSAT space segment, to ensure technical compatibility and to avoid significant economic harm to the INMARSAT system.

This introduces the so-called obligation of "coordination" with other space segments.¹² It was decided in 1985 that it would not be appropriate for this limited protection from competition to apply to INMARSAT's aeronautical communication services. Article 8(1) was therefore amended so as to refer to ". . . any or all of the *maritime* purposes of the INMARSAT space segment . . ." (emphasis added). When the land mobile amendments were proposed, there was a general consensus that land mobile communications offered by INMARSAT should, in this respect, be treated on the same basis as aeronautical communications. It was unnecessary to amend Article 8(1) further in order to achieve the desired result.

A further amendment which should be mentioned in this context is the new paragraph added to Article 7:

(4) Use of the INMARSAT space segment by mobile earth stations within land territory under the jurisdiction of a State shall be subject to the regulations governing radio communications of that State, and shall not be detrimental to that State's security.

11. See von Noorden, *Space Communications to Aircraft: A New Development in International Space Law (Part II)*, 15 J. SPACE L. 147, 150-51 (1987).

12. Analogous obligations exist in article XIV of the INTELSAT Agreement see International Telecommunications Satellite Organization Satellite Organization (INTELSAT) Agreement, Aug. 20, 1971, 23 U.S.T. 3813, T.I.A.S. No. 7532.

Although this appears to introduce a special principle applicable to land mobile communications, in reality the same principle applies to maritime and aeronautical communications. The right of States to regulate telecommunications within their respective territories is established by customary international law and is recognized in the Preamble to the International Telecommunication Convention (1982). Membership of INMARSAT does not affect this sovereign right. Thus, INMARSAT parties are under no obligation to allow INMARSAT ship earth stations to be used in their territorial sea, ports or internal waters.¹³ Similarly, aircraft fitted with INMARSAT aeronautical earth stations may not use them in the air space of a State without its consent, even if that State is an INMARSAT Party.¹⁴

Strictly speaking, therefore, the new Article 7(4) is redundant. However, when the land mobile amendments were proposed there were already plans in various countries to establish domestic mobile-satellite systems, offering services to the land mobile, coastal shipping and possibly aeronautical markets. Those parties which were considering such domestic systems wanted it to be established beyond doubt that they would have no obligation to permit INMARSAT services to be offered within their respective territories in competition with their domestic land mobile systems. Therefore, the new Article 7(4) may be seen as having more political than legal significance.

Article 7(2) gives explicit recognition to a long-standing practice under which use of the INMARSAT space segment has been authorized on an exceptional basis for land-based fixed communications.¹⁵ It was felt that the provision of such communications should be authorized expressly. It was decided that the most appropriate way to do this was to treat the provision of land-based fixed communications on the same basis as the provision of communications to the off-shore industry. Article 7(2), as amended in 1985, provides as follows:

The Council may, on a case-by-case basis, permit access to the INMARSAT space segment by earth stations located on structures operating in the marine environment other than ships, if and as long as the operation of such earth stations will not significantly affect the provision of service to ships or aircraft.

The origin of this provision stemmed from a fear that the off-shore drilling industry might place excessive demands on the use of the INMARSAT space segment, to the detriment of ships. This fear proved unfounded.

13. See Dann, *The INMARSAT System: Towards Full Global Coverage*, 6 SPACE COMM. & BROADCAST. 195, 198-99 (1988).

14. *Id.* at 201.

15. See von Noorden & Dann, *supra* note 1, at 4.

It was considered that communications to structures other than ships operating in the marine environment and land-based fixed services should both be offered on a secondary basis, but without a requirement that the Council should consider each application on a case-by-case basis. Article 7(2), as further revised, therefore, reads as follows:

The Council may permit access to the INMARSAT space segment by earth stations located on structures operating in the marine environment other than ships and by mobile earth stations at fixed locations on land, if and as long as the operation of such earth stations would not have a significantly adverse affect on the provision of mobile-satellite services.

It is unnecessary to discuss the remaining amendments which are of a minor nature and follow directly from the extension of the Organization's competence.

Competitive and Regulatory Issues

Remaining to be considered is the competitive and regulatory climate in which land-satellite communications will be offered. One issue of importance has already been mentioned: it will be for each country to decide whether INMARSAT's space segment may be used to offer land mobile-satellite services within its territory. The United States example is of interest. The Federal Communications Commission granted authority to the American Mobile Satellite Consortium (AMSC) to provide a domestic mobile-satellite service within the United States. For the time being, no other entity is authorized to provide a competing mobile-satellite service. This means that INMARSAT's U.S. Signatory is not permitted to provide land mobile-satellite services within the United States through the INMARSAT space segment. However, AMSC does not yet have a space segment of its own, and has therefore leased INMARSAT space segment capacity in order to provide its initial services. It is facing competition from the Qualcomm Corporation of California, whose "Omnitracs" system is able to provide land mobile-satellite services at Ku-band, that is to say, without using the frequencies specifically allocated to the mobile-satellite service. In addition, the Geostar Corporation has been given authority to provide a position-reporting service to mobiles within the U.S. The technology developed by Geostar allows short data messages to be sent with each position report, which enables the system to compete with AMSC in some of its markets. Geostar has also applied to introduce a new digital mobile satellite service which would compare directly with AMSC.¹⁶

16. Space Business News, June 27, 1988, at 6, col. 1.

Certain other countries, such as Canada and Australia, have announced firm intentions to construct their own domestic mobile-satellite systems, while others have made more tentative proposals. Each country must decide whether the volume of domestic traffic will be sufficient to justify the enormous cost of a dedicated domestic mobile-satellite system. For the majority of countries, shared use of the INMARSAT system may well be more attractive.

Nonetheless, there is a clear possibility that the land mobile market will be much more fragmented than the maritime and aeronautical markets. For this reason, a further amendment was proposed to the INMARSAT Convention, although it was not eventually adopted; this would have permitted INMARSAT to provide satellites or associated facilities separate from the INMARSAT space segment for land mobile-satellite communications. The provision of these separate satellites or facilities would be covered by contracts entered into between INMARSAT and the applicants concerned. Such a provision already exists in Article III(e) of the INTELSAT Agreement.

This proposal arose from a concern that those countries which establish their own mobile-satellite systems should not have to invest in that part of the INMARSAT space segment being used to provide land mobile-satellite communications for other countries. Although the proposal was not adopted, the Assembly decided, in January 1989, "to request the Director-General and the Council to report to a further Session of the Assembly on the question of whether there is a requirement for explicit authority in the Convention and Operating Agreement for the provision of separate space segment facilities."¹⁷ This matter will be further considered by the Assembly at its next regular Session, in October 1989.

In January 1989, the Assembly also asked the Director General to request INMARSAT Parties to provide appropriate information about their domestic laws, regulations and policies relating to the use of land mobile-satellite communications, and to bring this information to the attention of a future session of the Assembly.¹⁸ This survey is at present being undertaken by the Director General. The object is to obtain information about regulatory issues, such as the extent of permitted competition in land mobile-satellite communications as well as to discover what domestic laws and regulations affect the use of mobile earth stations in each country. One of the main advantages of mobile-satellite communications is that they are available almost without geographical limit. This is potentially of great advantage, for example, to the operators of a truck traveling from England to Turkey. However, such a truck will pass through several countries en route. There may be customs barriers to the importation of a mobile earth station into a country even if it is fitted to a

17. ASSEMBLY/6/REPORT, para 4.3.2.

18. *Id.*

vehicle and is imported only temporarily. The use of the mobile earth station may be dependent on type approval of the particular model by the relevant national authorities. Its use will also be subject to obtaining an operating license from the relevant authorities, unless the radio license issued in the country of origin is recognized for this purpose.

The failure of countries to modify and, where necessary, harmonize their national laws in these respects will constitute a major barrier to realizing the full benefits of land mobile-satellite communications. It is likely that such problems will be tackled first on a regional basis. The European Commission, for example, is in the process of formulating a policy on satellite telecommunications which may address these issues. It should be noted that, even within the European Community, there are at present no rules relating to mobile earth stations which require mutual recognition of type approval or of radio operating licenses.

Therefore, the recent amendments to the INMARSAT Convention provide a satisfactory international legal framework for the provision of land mobile-satellite communications. This development, however, has presented a new challenge to domestic law makers and regulators.