

Exhibit A
Request to Modify License

1. INTRODUCTION AND SUMMARY

In this application, ISAT US, Inc. (“ISAT”), a subsidiary of Inmarsat Global Ltd. (“Inmarsat”), seeks authority to modify its license Call Sign E140029 authorizing the operation of Ka band blanket licensed terminals on maritime vessels (“Maritime License”)¹ to add an additional Earth station terminal type to provide communications through the Global Xpress (“GX”) network using the Inmarsat-5 F2 satellite (“ISF2”) at 55.0° W.L. as a point of communication.

ISAT also seeks authority to use all Earth station terminals subject to the Maritime License, and the new antenna terminal model included in this modification application, to operate at fixed and/or temporary fixed locations on land within CONUS and U.S. territories and its possessions, as well as on fixed and mobile offshore platforms.

No other changes are requested by this modification application. ISAT incorporates by reference Exhibits D (response to Question 36 regarding a dismissed petition), E (response to Question E17 regarding the remote control point), and F (response to Question E15 regarding Section 25.209 compliance) of the Maritime Application, as well as certain other portions of the Maritime Application referenced below.

2. USE OF MARITIME TERMINALS ON LAND AND ON OFFSHORE PLATFORMS

ISAT seeks to modify the Maritime License to allow for the use of all Earth station terminals subject to the Maritime License and the model type described in Section 5 below (the “GX Terminals”) to operate at fixed and/or temporary fixed locations on land within CONUS and U.S. territories. The operation of GX Terminals while at fixed or temporary fixed locations

¹ See, ISAT US, Inc., Call Sign E140029; IBFS File Nos. SES-LIC-20140224-00098; SES-AMD-20140715-00601; SES-AMD-20150211-00073 (granted Sept. 29, 2015) (“Maritime Application”).

on land is necessary to allow ISAT to conduct crucial and necessary testing of the GX network and terminals, as part of training and demonstrations to potential customers. Operation of these terminals on land will be consistent with the technical parameters specified in the existing license. Moreover the number of terminals that would operate on land will not be large and can be accommodated within the number of terminals already licensed.

ISAT also seeks to operate the GX Terminals at fixed and temporary fixed locations on offshore platforms. Off-shore platforms are typically used by the energy/petroleum industry as well as in oceanographic research. There are many types of off-shore platforms including conventional fixed-platforms and various types of mobile off-shore platforms. The conventional fixed-platforms are built on concrete or steel legs that are anchored directly on to the seabed and are quasi-permanent at their location. Mobile off-shore platforms are designed to be moved from place to place and secure themselves at one location through different mechanisms for varying durations of time. There are many types of mobile off-shore platforms including semi-submersible platforms that are generally anchored by a combination of chain or wire rope during operations, and jack-up drilling rigs that can be jacked up above the sea using legs that can be lowered to the ocean bottom and anchored. GX Terminals on mobile off-shore platforms will be capable of operating when the platforms are at secured locations as well as when the platform is moving to its next destination or is drifting on the surface while anchored or tethered. Deployment of GX terminals on off-shore platforms will allow greater connectivity and a wider array of communications options for critical end users.

In any of these proposed fixed, temporary fixed or mobile operations, the performance characteristics of each antenna type, the antenna pointing capabilities and the network control mechanisms, each as described in the Maritime Application and in this modification application, will ensure that adjacent operations will be protected consistent with Section 25.138.

3. DESCRIPTION OF NEW EARTH STATION TERMINAL TYPE

This modification application seeks to add the Cobham SeaTel model Sailor 60 GX – employing an antenna with a 0.65 meter diameter (the “Sailor 60 GX”). Like the terminals already authorized by the Maritime License, the Sailor 60 GX will communicate with the I5F2 that will operate at the 55° W.L. orbital location. The Sailor 60 GX will be part of the GX network and integrated global offerings. The area of operations of the Sailor 60 GX will be U.S.

and international waters, including inland waterways within the coverage area of I5F2, and locations on land and off shore platforms as described in Section 2 above.

The information in Section 1 of the Maritime Application regarding the GX network and the global offerings applies equally to the Sailor 60 GX.² The characteristics of the Sailor 60 GX are provided in the FCC Form 312 associated with this application and in Section 5 below.

4. U.S. FREQUENCY ALLOCATION AND WAIVER REQUEST

The Sailor 60 GX will operate on the same frequencies authorized by the Maritime License: 19.7-20.2 GHz and 29.5-30.0 GHz. ISAT seeks a waiver of the U.S. Table of Frequency Allocations, 47 C.F.R. § 2.106 to allow the operation of these terminals on maritime vessels and mobile platforms, on both U.S.-registered vessels and on foreign-flagged ships in U.S. territorial waters, as was granted for the GX Terminals authorized by the Maritime License. The justifications for granting this waiver request are as stated in the Maritime Application and apply to the Sailor 60 GX in this application.³

5. TECHNICAL COMPATIBILITY WITH OTHER USERS IN THE BANDS

Section 4.1 provides analysis and an operational description of the Sailor 60 GX, including compliance with the Commission's two-degree spacing policy for Ka-band GSO FSS systems and Section 25.138 of the Commission's rules. As discussed in more detail below, the transmission from the Sailor 60 GX will be consistent with the off-axis EIRP spectral density levels set forth in Section 25.138. In addition, the power flux-density at the earth's surface produced by emissions from I5F2 when communicating with the Sailor 60 GX will be within the -118 dBW/m²/MHz limit set forth in Section 25.138(a)(6).⁴

The description of the additional capabilities of the Sailor 60 GX regarding the antenna control mechanisms, pointing accuracy, shut-off capabilities and Network Operations Center are

² See Maritime Application, Exhibit A.

³ For purposes of expediency, ISAT does not seek primary status for any fixed operations of the GX Terminals under this license at this time. If ISAT decides to seek primary protection for any fixed GX Terminal operations in the future, ISAT will seek such authority in connection with a separate license.

⁴ See Inmarsat Hawaii, Inc., Application for Authority to Operate Gateway Earth Station with I5F2 Satellite at 55° W.L., File No. SES-LIC-20120426-00397-00397, Call Sign E120072 (granted Mar. 30, 2015), as amended.

the same as for the terminals described in Section 3.3 of Exhibit A of the Maritime Application and are incorporated by reference herein.

5.1 Cobham SeaTel Sailor 60 GX

The Cobham SeaTel Sailor 60 GX Earth station is a multi-axis stabilized Earth station employing a 0.65 meter diameter antenna. A pictorial of the Sailor 60 GX that consists of the stabilized antenna and relevant electronics enclosed in a protective radome designed for operation on-board vessels is shown in Figure 1. For blanket licensing of transmitting Earth stations in the 29.5-30.0 GHz band, the Commission adopted off-axis EIRP spectral density levels contained in Section 25.138(a). As shown in Exhibit B, the Sailor 60 GX will operate within these levels under clear sky conditions. Therefore, its transmissions will not cause any more interference than any other Earth stations that meet these levels.



Figure 1 – Sailor 60 GX

The Commission adopted Section 25.138(e) for protection of receive earth stations in the 19.7-20.2 GHz band from adjacent satellite interference based on the pattern specified in Section 25.209(a) and (b) or the actual receiving earth station antenna performance. As shown in Exhibit B, the Sailor 60 GX Earth station does not meet the Section 25.209(a) and (b) antenna patterns at all off-axis angles. Inmarsat acknowledges the exceedances in the receive pattern and understands and agrees to accept interference by adjacent FSS satellite networks to the extent the receiving antenna performance requirements of Section 25.209 are exceeded.

6. NATIONAL SECURITY

The Sailor 60 GX would be subject to the same national security condition to which the Maritime License is already subject.

7. GOVERNMENT COORDINATION FOR GX TERMINALS

Inmarsat has completed coordination with the appropriate U.S. Government agencies pursuant to applicable U.S. Table of Frequency Allocation footnotes and the use of the Sailor 60 GX terminal is consistent with that coordination agreement. In accordance with Section 25.130(f), the half-power beam width of the antenna downlink of the Sailor 60 GX is 1.6 degrees at 19 GHz.

8. CONCLUSION

The use GX Terminals on off-shore platforms and in CONUS and U.S. territories, and the addition of the Sailor 60 GX terminal type, will advance the Commission's goals of facilitating the expanded availability of wireless broadband service and increasing competition. ISAT has shown that the Sailor 60 GX in this application and in the Maritime License will provide appropriate interference protection to other services. Grant of ISAT's application, therefore, is in the public interest, and ISAT urges the Commission to grant this application as soon as possible.