ISAT US Inc.
FCC Form 312 Exhibit A

Application to Modify License E150097

I. DESCRIPTION OF MODIFICATION

ISAT US Inc. ("ISAT US") hereby seeks to modify its Global Xpress (GX) Ka-band blanket earth station license, Call Sign E150097 ("License"), File No. SES-LIC-20150625-00383 ("GX Land Application") (as modified most recently under IBFS File No. SES-MOD-20190417-00528), to add two new GX Earth station terminal types, Panther II 60 and Panther II 96, which will communicate with the Inmarsat-5 F2 ("I5F2") and Inmarsat-5 F3 ("I5F3") satellites. Section II addresses the proposed new Earth station terminals. ISAT US also updates its contact information on the FCC Form 312 Main Form, Schedule B Questions E2 to E9, and the telephone number for the remote control point location, Schedule B Question E65. ISAT US incorporates by reference Exhibits F (response to Question E17 regarding the remote control point) and updates Exhibit G (24-hour point of contact)[1] of the GX Land Application, as well as certain other portions of the GX Land Application referenced below.

II. NEW EARTH STATION TERMINALS

This modification application seeks to add two terminal models that are manufactured by L3 GCS. These are the Panther II 60 and Panther II 96 terminals, which employ 60 centimeter and 96 centimeter antennae, respectively. The terminals will operate on the same frequencies as the GX Terminals in the current license: 19.7-20.2 GHz (space-to-Earth) and 29.5-30.0 GHz (Earth-to-space). The terminals will operate at fixed or temporary fixed locations and allow professional personnel from organizations from various sectors, initially U.S. government and

[1] Exhibit G initially was submitted as a supplement to the GX Land Application on August 14, 2015. The 24-hour point of contact is revised with updated Exhibit G and as reflected in Form 312 Schedule B Question E65.

potentially including in the future media and humanitarian, to quickly deploy a communication network to meet mission needs.

A. Land Terminal Description

This application seeks to license the Panther II 60 and Panther II 96 terminals. The terminals will operate on the same frequencies as the GX Terminals in the current license: 19.7-20.2 GHz (space-to-Earth) and 29.5-30.0 GHz (Earth-to-space). As illustrated in the off-axis EIRP spectral density plots in Exhibit B, the L3 GCS terminals meet the performance requirements in Section 25.138 (a) under clear sky conditions. Additionally, each of these terminal types will successfully receive signals from the I5F2 and I5F3 satellites below the maximum power flux-density at the earth's surface of -118 dBW/m^2/MHz. Thus, the proposed terminals are able to operate without causing unacceptable interference, consistent with the requirements of Section 25.209(f).[2]

The Commission has deleted the requirement to provide receive earth station patterns in the 19.7-20.2 GHz frequency band (see Sections 25.132 and 25.115). To the extent that the proposed terminal may have minor exceedance at certain off-axis angles Inmarsat understands and agrees to accept interference from adjacent FSS satellite networks to the extent the relevant receiving antenna performance requirements of Section 25.209 are exceeded.

Radiation hazard analyses for the L3 GCS Panther II terminals and a discussion of the results are provided in Exhibit C.

The proposed terminals will be subject to the same national security requirements described in Section 4 of the GX Land Application. That discussion is incorporated by reference herein.

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[2] *See* Section 25.209(f).

The following sections provide a description of each of the terminal types.

B. Panther II 60 Terminal

The required technical data for the proposed Panther II 60 earth station is provided in the Form 312. This terminal type employs a 60 centimeter antenna and the half-power beamwidth required in Section 25.130(f) is 1.1 degrees. In addition, 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 illustrated in the off-axis EIRP spectral density plots in Exhibit B, the proposed terminal type meets the performance requirements in Section 25.138 (a) under clear sky conditions.

Below is an image of the Panther II 60 terminal:

C. Panther II 96 Terminal

The required technical data for the proposed Panther II 96 earth station is provided in the Form 312. This terminal employs a 96 centimeter antenna; and the half-power beamwidth

required in Section 25.130(f) is 0.8 degrees. In addition, 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 illustrated in the off-axis EIRP spectral density plots in Exhibit B, the proposed terminal type meets the performance requirements in Section 25.138 (a) under clear sky conditions.

Below is an image of the Panther II 96 terminal:

III. RESPONSE TO QUESTION 36

ISAT US submits this response to Question 36 of the FCC Form 312 out of an abundance of caution. In 2005, the Commission dismissed a Petition for Declaratory Ruling (the "Petition") filed by Inmarsat Mobile Networks, Inc.'s affiliate, Inmarsat Global Limited ("Inmarsat Global"), seeking United States market access to provide MSS in the 2 GHz band. Subsequent to Inmarsat Global's filing, the Commission assigned all 2 GHz spectrum currently allocated for

MSS in the United States to two other satellite operators, and thus dismissed Inmarsat Global's Petition.