

**Description of Application, Services to Be Provided,
Frequencies Requested, and
Public Interest Showing – Items 24 and 43**

Description of Application; Frequencies Requested

By this Application, Comtech Mobile Datacom Corporation (“CMDC”) requests authority to modify its existing blanket license, E090029 (the “CONUS” license), to add two (2) new Site IDs and delete one (1) existing Site ID. These changes to the license will (1) enable CMDC to operate most of its existing mobile earth station terminals (“MESs”) on SkyTerra 1, the replacement satellite for MSAT-2, and (2) consolidate and simplify the licensing of most of CMDC’s MESs for operation on the ISAT satellites. The following Site IDs should be added to the license:

- (a) Site ID “ISAT—Half Duplex,” specified half-duplex MESs using the satellites on the ISAT list. The METs included under this Site ID are CMDC’s MT2010, MT2011, MT2012, MTM203, and CMT500, all operating with various antennas on the satellites on the ISAT list, in CONUS, Alaska, Hawaii, and any U.S. territory or possession within the footprint of an ISAT satellite.
- (b) Site ID “SkyTerra,” specified half-duplex MESs and full-duplex MESs using SkyTerra 1. The half-duplex METs included under this Site ID are CMDC’s MT2010, MT2011, MT2012, MTM203, and CMT500, all operating with various antennas. The full-duplex METs included under this Site ID are CMDC’s ASDR and ASDR-O. All METs operating under this Site ID will operate in CONUS, Alaska, Hawaii, and any U.S. territory or possession within the footprint of SkyTerra 1.

A spreadsheet of new Site IDs is provided in Exhibit A, Annex 1.

The following Site ID should be deleted from the license:

- (a) Site ID “ISAT—CONUS”

The following Site IDs should remain on the license unchanged. The MESs currently authorized under this Site ID are not affected by this Application:

- (a) Site ID “MSV—CONUS”
- (b) Site ID “ISAT—ADSR”
- (c) Site ID “MSV—ADSR”

A spreadsheet of all of the Site IDs on the license after grant of this Application is provided in Exhibit A, Annex 2.

All MESs authorized under this license operate in portions of the L-band (1525-1544/1545-1559 MHz and 1626.5-1645.5/1646.5-1660.5 MHz). CMDC's total number of MESs authorized under E090029 and its two (2) other blanket MET licenses, E090027 and E990143, will not exceed the 25,000 authorized under E990143 unless an increase in CMDC's total number of authorized MESs has been otherwise authorized by the Commission.

Services to be Provided

CMDC will use E090029 as modified to provide the same types of services that CMDC is currently providing under E090029. At present, CMDC provides mobile packet data communications services to government and commercial customers throughout the United States and overseas.

CMDC terminals typically are placed on land vehicles or at remote, fixed site locations. The terminals transmit and receive data packets via dedicated channels in the L-band. The packets can be routed over any of several terrestrial data networks, or to other mobile transceivers in the CMDC network. Use of the satellite relay is as a "bent pipe," meaning that only bandwidth and power are purchased from the satellite relay operator. Network management is provided by CMDC's 24/7 Network Operations Center in Germantown, MD.

CMDC's system employs a version of CDMA that relies on code phase as opposed to multiple codes to differentiate between overlapping signals. The maximum number of simultaneous transmissions processed today is 4. CMDC is developing state-of-the-art, next generation, earth station equipment that will be capable of processing 34 simultaneous transmissions in the near future.

At present, CMDC has over 150,000 activated terminals in service, of which only a small percentage operate in the U.S. during any given month. The vast majority of CMDC's terminals have been deployed in support of three (3) applications for the U.S. military and operate outside of the U.S.

Compliance With ISAT Conditions

For the MESs authorized under the Site ID "ISAT—Half Duplex," CMDC seeks authority to operate with any satellite on the ISAT list pursuant to the terms and conditions of the

*Inmarsat Order.*¹ Accordingly, CMDC will, to the extent required by the Commission, comply with any applicable conditions.

Protection of Maritime and Aeronautical Mobile-Satellite Service Distress and Safety Communications, and Compliance With NTIA's Requirements Regarding Real-Time Access and Priority Preemption Requirements

(a) Compliance with Section 25.136(d)

The following paragraphs explain CMDC's compliance with Section 25.136(d) of the Commission's Rules, which address the protection of maritime mobile-satellite service distress and safety communications in the lower L-band.

Section 25.136(d)(1). All MES transmissions shall have a priority assigned to them that preserves the priority and preemptive access given to maritime distress and safety communications sharing the band.

This requirement is not applicable, as CMDC's MESs operate only on dedicated channels that are not shared with any distress or safety communications.

Section 25.136(d)(2). Each MES with a requirement to handle maritime distress and safety data communications shall be capable of either: (i) recognizing message and call priority identification when transmitted from its associated LES or (ii) accepting message and call priority identification embedded in the message or call when transmitted from its associated LES and passing the identification to shipboard data message processing equipment.

This requirement is not applicable, as CMDC's MESs are not required to handle distress or safety communications.

Section 25.136(d)(3). Each MES shall be assigned a unique terminal identification number that will be transmitted upon any attempt to gain access to a system.

CMDC's terminals comply with this requirement. Each CMDC MES is part of a virtual private network with a distinct identity.

Section 25.136(d)(4). After an MES has gained access to a system, the mobile terminal shall be under control of a LES and shall obtain all channel assignments from it.

¹ *Inmarsat, Inc.*, Order, DA 08-2323, 23 FCC Rcd 15268 (Int'l Bur. rel. Oct. 21, 2008) ("*Inmarsat Order*").

CMDC's terminals comply with this requirement. After connecting to an associated LES system, the CMDC MESs obtain control and frequency tuning commands over the communication channel only from that LES.

Section 25.136(d)(5). All MESs that do not continuously monitor a separate signalling channel or signalling within the communications channel shall monitor the signalling channel at the end of each transmission.

CMDC's terminals comply with this requirement. The CMDC MESs operate on dedicated channels regardless of satellite and when not transmitting, are continuously monitoring the LES for command signals.

Section 25.136(d)(6). Each MES shall automatically inhibit its transmissions if it is not correctly receiving separate signalling channel or signalling within the communications channel from its associated LES.

CMDC's terminals comply with this requirement. As noted previously, a CMDC MES will not transmit unless it is properly receiving and locked onto the incoming RF signal from its associated LES.

Section 25.136(d)(7). Each MES shall automatically inhibit its transmissions on any or all channels upon receiving a channel-shut-off command on a signalling or communications channel it is receiving from its associated LES.

CMDC's terminals comply with this requirement. A CMDC MES will not transmit if it has been disabled by a control signal from the associated LES.

Section 25.136(d)(8). Each MES with a requirement to handle maritime distress and safety communications shall have the capability within the station to automatically preempt lower precedence traffic.

This requirement is not applicable, as CMDC's MESs are not required to handle distress or safety communications.

(b) Compliance with NTIA/FAA Letter Requirements

The following paragraphs explain CMDC's compliance with the requirements set forth in the *NTIA/FAA Letter*.² These requirements address the protection of aeronautical mobile-satellite service distress and safety communications in the upper L-band.

² See Amendment of Part 87 of the Commission's Rules to Establish Technical Standards and Licensing Procedures for Aircraft Earth Stations, 8 FCC Rcd 3156, ¶ 5, n. 22 (1993), citing Letter from Richard D. Parlow, Associate Administrator, Office of Spectrum Management, NTIA, and Gerald Markey, Manager, Spectrum

1. All MES transmissions shall have a priority assigned to them that preserves the priority and preemptive access given to aeronautical distress and safety communications sharing the band.

This requirement is not applicable, as CMDC's MESs operate only on dedicated channels that are not shared with any distress or safety communications.

2. Each MES with a requirement to handle distress and safety data communications shall be capable of recognizing message and call priority identification when transmitted from its associated LES.

This requirement is not applicable, as CMDC's MESs are not required to handle distress or safety communications.

3. Each MES shall be assigned a unique terminal identification number that will be transmitted upon any attempt to gain access to a system.

CMDC's terminals comply with this requirement. Each CMDC MES is part of a virtual private network with a distinct identity.

4. After an MES has gained access to a system, the mobile terminal shall be under control of an LES and shall obtain all channel assignments from it.

CMDC's terminals comply with this requirement. After connecting to an associated LES system, the CMDC MESs obtain control and frequency tuning commands over the communication channel only from that LES.

5. All MESs that do not continuously monitor a separate signalling channel shall have provision for signalling within the communications channel.

CMDC's terminals comply with this requirement. The CMDC MESs operate on dedicated channels regardless of satellite and when not transmitting are continuously monitoring the LES for command signals.

6. Each MES shall automatically inhibit its transmissions if it is not correctly receiving a separate signalling channel or signalling within the communications channel from its associated LES.

CMDC's terminals comply with this requirement. As noted previously, a CMDC MES will not transmit unless it is properly receiving and locked onto the incoming RF signal from its associated LES.

7. Each MES shall automatically inhibit its transmissions on any or all channels upon receiving a channel-shut-off command on a signalling or communications channel it is receiving from its associated LES.

CMDC's terminals comply with this requirement. A CMDC MES will not transmit if it has been disabled by a control signal from the associated LES.

8. Each MES with a requirement to handle distress and safety-related communications shall have the capability within the station to automatically preempt lower precedence traffic.

This requirement is not applicable, as CMDC's MESs are not required to handle distress or safety communications.

(c) Compliance with NTIA interpretation regarding real time access and priority preemption

NTIA has indicated that if a terminal meets certain minimum requirements and is capable of ceasing transmissions and inhibiting further transmissions within three (3) seconds, that terminal would be considered to meet the real time access and priority preemption requirements in footnotes US308 and US315 to the U.S. Table of Frequency Allocations.³ CMDC interprets this benchmark as meaning that each MES for all of its operating modes must, within three (3) seconds of receiving a shutdown command or losing lock on the downlink, stop all ongoing RF transmissions and prevent any new RF transmissions.

All of the MESs listed under the proposed new Site IDs "ISAT—Half Duplex" and "SkyTerra" comply with NTIA's benchmark.

ORBIT Act Analysis

The ORBIT Act was passed in 2000 to promote competition in the provision of satellite communications through the privatization of former inter-governmental organizations, including Inmarsat. In applications seeking to operate mobile terminals and land earth stations to provide

³ See Letter from Karl B. Nebbia, Associate Administrator, Office of Spectrum Management, U.S. Department of Commerce, NTIA, to Mr. Julius Knapp, Chief, Office of Engineering and Technology, FCC, May 13, 2009 ("*NTIA 2009 Letter*").

service in the United States using Inmarsat satellites, the Commission has evaluated whether Inmarsat privatization has been consistent with the criteria set forth in the ORBIT Act.⁴

The Commission has confirmed that Inmarsat has met the remaining privatization requirements of the ORBIT Act.⁵ Specifically, the Commission has determined that “Section 602, which prohibits Inmarsat from providing additional services and requires the United States to decline and oppose new orbital locations for [the] provision of such services until Inmarsat meets the privatization requirements of the ORBIT Act, is no longer applicable.”⁶ Accordingly, there is no issue under the ORBIT Act with respect to the grant of CMDC’s application to provide services using Inmarsat satellites in the U.S. under proposed new Site ID “ISAT—Half Duplex.”

Public Interest Showing

Grant of this Application will serve the public interest. CMDC currently operates on MSAT-2. This satellite is near end-of-life and is being replaced by SkyTerra 1. Grant of CMDC’s request to add the new Site ID “SkyTerra” to the license will enable CMDC to operate most of its existing MESs on SkyTerra 1 and thus continue to provide service currently provided on MSAT-2 to existing customers. Grant of CMDC’s request to add the new Site ID “ISAT—Half Duplex” and delete the existing Site ID “ISAT—CONUS” will consolidate and simplify the licensing of most of CMDC’s MESs for operation on the ISAT satellites. As such, grant of this request should help resolve some of the confusion regarding CMDC’s licenses, thereby relieving some of the administrative burdens on FCC staff and CMDC.

⁴ See, e.g., *COMSAT Corporation d/b/a COMSAT Mobile Communications et al.*, 16 FCC Rcd 21661 (2001) at ¶ 18.

⁵ See *In the Matter of Inmarsat Group Holdings Limited, Petition for Declaratory Ruling Pursuant to Section 621(5)(F) of the ORBIT Act*, Memorandum Opinion and Order, 20 FCC Rcd 11366 (2005), at ¶ 26.

⁶ *Id.*