

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of )
National Systems & Research Co. )
For Blanket Authorization to operate up to )
40,000 mobile satellite earth terminals (E990083) )
though Canadian-licensed satellite MSAT-1 at )
106.5 degrees W.L. in frequency bands 1530-1559 )
MHz (receive) and 1631.5 – 1660.5 MHz (transmit) )
throughout the Continental United States, United )
States Territories, Alaska, and Hawaii )

File No. SES-LIC-19990217-00241

ORDER AND AUTHORIZATION

Adopted: June 27, 2002

Released: June 28, 2002

By the Deputy Chief, Satellite Division:

I. Introduction

1. By this Order and Authorization, we grant National Systems & Research Co. (NSR) blanket authority, subject to certain conditions, to operate up to 40,000 mobile earth terminals (METs) to provide mobile satellite service (MSS) in the United States via a Canadian-licensed satellite operating in portions of the L-band spectrum. Grant of this application will facilitate increased competition in the MSS market, providing U.S. consumers and users, including federal and state governments and agencies, businesses and individual consumers with the benefits of competition, such as lower prices, innovation, and additional service options.

II. Background

2. On February 17, 1999, NSR, a U.S. corporation, filed an application requesting blanket authority to operate up to 40,000 full-duplex METs throughout the United States to communicate with the Canadian-licensed MSAT-1 satellite at 106.5° W.L.. MSAT-1 operates in frequency bands 1626.5-1660.5 MHz (transmit) and 1525-1559 MHz (receive). The METs will be used to provide two satellite services, Mobile Data Service (MDS) and Track and Manage Service (TAMS), in the international coordinated

1 The "L-band" is a general designation for frequencies from 1 to 2 GHz. In this Order and Authorization, however, the term "L-band" denotes only the 1545-1559 MHz and 1646.5-1660.5 MHz frequency band ("upper L-band") and the 1525-1530 MHz, 1530-1544 MHz, and 1626.5-1645.5 MHz frequency bands ("lower L-band"). The United States is the only country that distinguishes between the "upper" and "lower" L-band.

2 A full-duplex MET can receive a data message while transmitting one. Conversely, a half-duplex cannot receive and transmit data messages simultaneously. It must finish transmitting before it can receive an incoming message.

frequency ranges of 1530-1559 MHz and 1631.5-1660.5 MHz. NSR proposes to provide these services on a non-common carrier basis. According to NSR, a mobile terminal used for MDS consists of an antenna, radio transceiver and one or more user interface devices such as mobile telephone handsets, facsimile equipment, or data terminal devices. The MDS mobile terminals will be used to provide packet data services to land vehicles, maritime and aeronautical vessels, and temporary fixed stations. A mobile terminal used for TAMS consists of an integrated antenna and radio transceiver unit to which sensors are attached to provide the tracking or asset management information. The TAMS mobile terminals will be used to provide tracking and asset management data services to land vehicles and maritime and aeronautical vessels.<sup>3</sup> Motient<sup>4</sup> and Norcom Networks Corporation (Norcom) filed petitions to deny NSR's application. Comments generally supporting these petitions were filed by Space System License, Inc. and Iridium LLC (collectively Motorola) and Globalstar, L.P. (Globalstar), respectively.

### III. Discussion

3. In 1997, the United States signed the World Trade Organization (WTO) Agreement on Basic Telecommunication Services.<sup>5</sup> In the WTO Agreement, the United States committed to open its satellite market to foreign satellite systems licensed by WTO-member countries to provide fixed and mobile satellite services (excluding Direct-to-Home Service, Direct Broadcast Satellite Service, and Digital Audio Radio Service). The Commission thereafter adopted the *DISCO II Order*, implementing a framework to examine requests by non-U.S. licensed satellite systems licensed by other WTO-members to serve the U.S. market.<sup>6</sup> In making a public interest determination, the Commission stated in *DISCO II* that it would take into account factors such as the effect of the pending application on competition in the United States, spectrum availability, eligibility requirements, technical requirements, and national security, law enforcement, foreign policy and trade issues.<sup>7</sup>

4. Competition Issues: In *SatCom/TMI*, the Commission evaluated the effect foreign entry by the Canadian licensed MSAT-1 satellite will have on competition in the U.S. satellite market.<sup>8</sup> In that decision, the Commission found that grant of the SatCom/TMI mobile earth station applications to use the Canadian licensed MSAT-1 satellite to provide service in the U.S. would pose no competitive harm or

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<sup>3</sup> See NSR Application Exhibit 3.

<sup>4</sup> When the petition was filed, Motient was referred to as AMSC Subsidiary Corporation (AMSC). Motient has since entered into a joint venture with TMI Communications and Company, LP (TMI).

<sup>5</sup> The results of the WTO basic telecommunications services negotiations are incorporated into the General Agreement on Trade in Services (GATS) by the Fourth Protocol to the GATS (April 30, 1996), 36 I.L.M. 336 (1997). These results, as well as the basic obligations contained in the GATS, are referred to herein as the "WTO Agreement."

<sup>6</sup> See *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Service in the United States*, Report and Order, 12 FCC Rcd 24094 (1997) (*DISCO II*).

<sup>7</sup> *Id.* at 24100.

<sup>8</sup> See *SatCom Systems, Inc.* 14 FCC Rcd 20798 (1999), *aff'd sub nom. AMSC V. FCC*, 216 F.3d 1154 (D.C. Cir. 2000) (*SatCom/TMI*).

very high risk to competition in the U.S. satellite market.<sup>9</sup> The record in this proceeding does not present any reason to deviate from this previous finding.

5. Other Public Interest Factors: Each of the opposing parties contends that NSR has not demonstrated that its operations will be consistent with the public interest factors in *DISCO II*, including spectrum availability, technical requirements, and issues related to law enforcement and national security.

6. Motient asserts that grant of the application would prevent Motient, the sole U.S. MSS L-band space station licensee, from gaining access to sufficient spectrum to operate its MSS system to serve the United States, and that NSR will unfairly benefit from enhanced pricing flexibility due to subsidies the Canadian government provides to TMI.<sup>10</sup> Norcom agrees with Motient that grant of NSR's proposal would effectively deprive Motient from gaining the spectrum it needs.<sup>11</sup> Norcom also asserts that TMI rather than NSR will control the proposed METs, and thus, effect compliance with all Communication for Law Enforcement Act (CALEA) and E911 requirements.<sup>12</sup> Hence, Norcom submits that TMI will be solely responsible for satisfying these regulatory requirements.<sup>13</sup> Norcom further contends, as do Motorola and Globalstar, that NSR's application should be denied because it violates the Commission's so-called "freeze" on accepting applications for spectrum coordinated for the lower L-band.<sup>14</sup>

7. We note that identical arguments made by the opposing parties concerning (1) the Commission's L-band spectrum management policy, (2) issues relating to alleged enhanced pricing flexibility due to subsidization of TMI by the Canadian government, and (3) issues related to TMI exercising *de facto* control of earth station facilities have been raised and addressed fully in other L-band blanket authorization orders.<sup>15</sup> Generally, we find no reason to deviate from findings reached in those decisions. In addition, the Commission separately addressed the so-called "lower L-band freeze" in the *Lower L-band Report and Order*.<sup>16</sup> In view of the Commission's action, issues related to the so-called "freeze" are moot. With regard to emergency communications, there is no requirement that MSS operators provide E911 services.<sup>17</sup> Nevertheless, we strongly encourage MSS providers to begin taking steps to provide routing for emergency communications to the appropriate public safety answering points. With regard to law enforcement and national security requirements, these issues have been addressed through agreements with Executive Branch national security and law enforcement agencies noted in the

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<sup>9</sup> *Id.* at 20807.

<sup>10</sup> See Motient Petition to Deny at 1-4.

<sup>11</sup> See Norcom Petition to Deny at 5.

<sup>12</sup> See 47 U.S.C. § 1001 *et seq.*; *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling System*, Report and Order, 11 FCC Rcd 18676 (1996).

<sup>13</sup> See Norcom Petition to Deny at 6-7.

<sup>14</sup> *Id.* at 4; see also Motorola Comments at 3-4, and Globalstar Comments at 3.

<sup>15</sup> See, e.g., *Infosat Communications, Inc.*, 17 FCC Rcd 1610 (2002), *SatCom/TMI*, 14 FCC Rcd 20789 (1999).

<sup>16</sup> See *In the Matter of Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-band*, Report and Order, 17 FCC Rcd 2704 (2002) (*Lower L-band Report and Order*).

<sup>17</sup> See, e.g., *SatCom/TMI*, 14 FCC Rcd at 20823.

*MSV Assignment Order*. Norcom has not raised any concerns that would cause us to deviate from that decision.

8. **Technical Requirements:** In conformance with U.S. spectrum and use regulations regarding Aeronautical Mobile Satellite (Route) Service (AMS(R)S)<sup>18</sup> in the upper L-band, MSS operators must comply with Footnote US 308 to the U.S. Table of Frequency Allocation and a provision in the ITU's Radio Regulations regarding priority and preemptive access for AMS(R)S operation in a portion of this band (ITU Radio Regulation §5.357A).<sup>19</sup> Opposing parties claim that NSR does not meet these technical requirements. We disagree. We find that consistent with these requirements, NSR's operation in the bands 1545-1558.5 and 1646-1660 MHz is on a secondary basis to the U.S. AMS(R)S requirements of other U.S.-authorized MSS providers operating in these bands. We will impose conditions to this authorization to ensure conformance with U.S. spectrum and use requirements regarding priority and preemptive access for (AMS(R)S) operating in a portion of the upper L-band. In addition, the level of out-of-band and spurious emissions from NSR's METs must be consistent with the Commission's recently adopted out-of-band emission limits specified in Section 25.216 of the Commission's Rules, 47 C.F.R. § 25.216.<sup>20</sup> We will also impose conditions to ensure that these requirements are met. These conditions should address Motorola's concerns regarding out-of-band emissions from the NSR terminals to Motorola's MSS system operating on nearby frequencies.<sup>21</sup> We also note that the National Telecommunications Information Administration (NTIA) concurs in authorizing the operation of NSR's proposed METs, subject to the conditions specified in this Order and Authorization.<sup>22</sup>

#### IV. Conclusion

9. NSR has demonstrated that its operations will be consistent with the Commission's policies

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<sup>18</sup> AMS(R)S is a mobile satellite service using mobile terminals on-board aircraft. This service can be used to support domestic and international air traffic, including air traffic control. The (R) indicates that the spectrum is used for aeronautical communications related to the safety and regularity of flights primarily along national and international civil air routes.

<sup>19</sup> Footnote US 308 of the U.S. Table of Frequency Allocations, 47 C.F.R. § 2.106, states: "In the frequency bands 1549.5-1558.5 MHz and 1651-1660 MHz, the Aeronautical-Mobile-Satellite(R) requirements that cannot be accommodated in the 1545-1549.5 MHz, 1558-1559 MHz, 1646.5-1651 MHz and 1660-1660.5 MHz bands shall have priority access with real-time capability for communications in the mobile satellite service. Systems not interoperable with the services shall operate on a secondary basis." 5.357A in the ITU's Radio Regulations has a similar priority and preemptive access requirement. *See also SatCom/TMI*, 14 FCC Rcd 20798 (1999).

<sup>20</sup> *See Amendment of Part 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of the National Telecommunications and Information Administration to Amend Part 25 of the Commission's Rules to Establish Emissions Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band*, Report and Order and Further Notice of Proposed Rulemaking, FCC 02-134 (rel. May 14, 2002) (*Out-of-Band Emissions Order*).

<sup>21</sup> *See Motorola Comments* at 5-6.

<sup>22</sup> *See "Summary of L-band Emission Information for Coordination with NTIA,"* dated May 18, 2001. *See also Memorandum from James Vorhies, NTIA to Sylvia Lam, FCC*, dated March 28, 2001.

permitting service in the United States over space stations licensed by foreign administrations. Therefore, we find that NSR is qualified to hold the blanket earth station authorizations requested. Consequently, we grant NSR's application, subject to the conditions set forth below, authorizing NSR to provide MSS service in the United States over the MSAT-1 satellite using spectrum coordinated by Canada.

## V. Ordering Clauses

10. Accordingly, IT IS ORDERED that Application File No.SES-LIC-19990217-00241 IS GRANTED and National Systems & Research Co. IS AUTHORIZED to operate up to 40,000 mobile earth terminals (METs) through the Canadian licensed MSAT-1 space station in the 1530-1559 and 1631.5-1660.5 MHz band to the extent indicated herein, in accordance with the technical specifications set forth in its application and its Radio Station Authorization, and consistent with the Commission's rules, subject to the conditions set forth below.

11. IT IS FURTHER ORDERED that National Systems & Research Co.'s MET operations shall be limited to the portions of the 1525-1559 and 1626.5-1660.5 MHz band coordination for the satellite being accessed in the most recent annual L-band operator-to-operator agreement.

12. IT IS FURTHER ORDERED that in the absence of a continuing annual operator-to-operator coordination agreement, National Systems & Research Co.'s operation in the 1525-1530 MHz, 1530-1544 MHz, 1626.5-1645.5 MHz frequency bands (lower L-band) and the 1545-1559 MHz and 1646.5-1660.5 MHz (upper L-band) frequency bands will be on a non-interference basis until a future operator-to-operator agreement is concluded. National Systems & Research Co. shall not cause harmful interference to any other lawfully operating satellite or radio facility and shall cease operations upon written notification of such interference. Furthermore, National Systems & Research Co. must notify all other operators in these frequency bands that it will be operating on a non-interference basis. National Systems & Research Co. must also notify its customers in the United States that its operations are on a non-harmful interference basis

13. IT IS FURTHER ORDERED that the full duplex METs operating in the 1525-1530 MHz, 1530-1544 MHz and 1626.5-1645.5 MHz bands shall have the following minimum set of capabilities to ensure compliance with Footnote US 5.353A and the priority and real-time preemption requirements imposed by US Footnote 315 to Section 2.106 of the Commission's Rules, 47 C.F.R. § 2.106 and ITU Radio Regulation 5.357.

- a. All MET 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;
- b. Each MET with a requirement to handle maritime distress and safety data communications shall be capable of either (1) recognizing message and call priority identification when transmitted from its associated Land Earth Station (LES) or (2) 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;

- c. Each MET shall be assigned access to a unique technical identification number that will be transmitted upon any attempt to gain access to a system;
- d. After a MET has gained access to a system the mobile terminal shall be under the control of a LES and shall obtain all channel assignments from it;
- e. All METs that do not continuously monitor a separate signaling channel or signaling within the communications channel shall monitor the signaling channel at the end of each transmission;
- f. Each MET shall automatically inhibit its transmissions if it is not correctly receiving a separate signaling channel or signaling within the communications channel from its associated LES;
- g. Each MET shall automatically inhibit its transmissions on any or all channels upon receiving a channel-shut-off command on a signaling or communications channel from its associated LES; and
- h. Each MET with a requirement to handle maritime distress and safety communications shall have the capability within the station to automatically preempt lower precedence traffic.

14. IT IS FURTHER ORDERED that National Systems & Research Co. must operate its mobile earth terminals in a full-duplex mode and have the following minimum set of capabilities to ensure compliance with US Footnote 308 to Section 2.106 of the Commission's rules, 47 C.F.R. § 2.106, and ITU Radio Regulations 5.357:

- a. All MET transmissions shall have a priority assigned to them that preserves the priority and preemptive access given to aeronautical distress and safety-related communications sharing the band;
- b. Each MET with a requirement to handle distress and safety-related communications shall be capable of recognizing message and call priority identification when transmitted from its associated LES;
- c. Each MET shall be assigned access to a unique technical identification number that will be transmitted upon any attempt to gain access to a system;
- d. After a MET has gained access to a system the mobile terminal shall be under control of a Land Earth Station and shall obtain all channel assignments from it;
- e. All METs that do not continuously monitor a separate signaling channel shall have provisions for signaling within the communications channel;
- f. Each MET shall automatically inhibit its transmissions if it is not correctly receiving a separate signaling channel or signaling within the communications channel from its associated Land Earth Station;
- g. Each MET shall automatically inhibit its transmissions on any or all channels upon

receiving a channel-shut-off command on a signaling or communications channel it is receiving from its associated Land Earth Station; and

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

15. IT IS FURTHER ORDERED that, in accordance with US Footnote 308, the operation of National Systems & Research Co.'s METs, in the bands 1545-1558.5 and 1646.5-1660 MHz, is on a secondary basis to U.S. AMS(R)S requirements of other U.S.-authorized MSS providers operating in the 1545-1559 and 1646.5-1660 MHz bands.

16. IT IS FURTHER ORDERED that National Systems & Research Co. must comply with the out-of-band emission limits set forth in Section 25.216 of the Commission's rules. *See Out-of-Band Emission Order*, FCC 02-34 (rel. May 14, 2002).

17. IT IS FURTHER ORDERED that this authorization does not permit National Systems & Research Co. to provide commercial mobile radio service (CMRS) to end users, either the public or such classes of users as to be effectively available to a substantial portion of the public, for profit and for interconnection with the public switched network. If National Systems & Research Co. wishes to provide CMRS, which is classified as a common carrier service, it must obtain authority under Section 214 of the Communications Act of 1934, as amended, 47 U.S.C. § 214, before providing such service.

18. IT IS FURTHER ORDERED that National Systems & Research Co. is not authorized to operate the 1544-1545 MHz and 1645.5-1646.5 MHz bands that are limited in the United States exclusively for distress and safety communications. *See* 47 C.F.R. Section 2.106nn. S5.356, S5.375.

19. IT IS FURTHER ORDERED that the Petitions to Deny of Motient Services, Inc. and Norcom Networks Corporation and the Comments of Space System Licensee, Inc. and Iridium LLC, and Globalstar, L.P. ARE DENIED.

20. IT IS FURTHER ORDERED that this license shall not vest in the licensee any right to operate Earth stations or use the assigned frequencies beyond the term thereof or in any manner other than authorized herein, and neither the licensee nor the rights granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act.

21. IT IS FURTHER ORDERED that the license term for the METs that are authorized by this *Order and Authorization* is a period of 15 years.

22. IT IS FURTHER ORDERED that National Systems & Research Co. be afforded thirty days to decline this *authorization*. Failure to respond within this period will constitute formal acceptance of the authorization.

**FEDERAL COMMUNICATIONS COMMISSION**

Cassandra C. Thomas  
Deputy Chief, Satellite Division