

**DESCRIPTION OF APPLICATION
AND REQUEST FOR EXEMPTION**

By this application, Raytheon Company – Imagery and Geospatial Systems Division (“Raytheon”) seeks authority to operate an experimental very small aperture terminal (“VSAT”) network in conventional Ku-band frequencies. Raytheon seeks to operate this network to test and demonstrate to prospective customers the capabilities and significant public benefits of using transportable VSAT earth stations to restore telecommunications services in the event of disaster or other interruption of primary communications links. In view of the pressing need to develop new communications systems for service restoration, such as Raytheon’s transportable VSAT network, Raytheon requests expedited treatment for its application. For the reasons set forth herein, grant of Raytheon’s experimental application and related request for exemption would strongly serve the public interest.

Raytheon seeks an FCC authorization to operate an experimental VSAT network composed of a single hub earth station to be located at a Raytheon facility in Bellevue, Nebraska (near Omaha), and up to 20 transportable remote terminals that will operate at various locations within the continental United States.¹ Raytheon proposes to test and demonstrate the use of transportable Ku-band VSAT earth stations to provide communications services primarily in the event of communications outages caused by disaster or other reasons. For example, a

¹ The VSAT remote terminals are “transportable” because they can be moved from one location to another and be deployed to provide communications services on an as-needed basis.

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commercial enterprise with multiple outlets could store one or more transportable VSAT terminals at a regional headquarters facility and deploy the terminals to individual outlets as needed to restore communications services. Alternatively, individual outlets could store a VSAT remote terminal and deploy it quickly in the event of an outage of its primary communications network or service.

The VSAT hub and transportable remote terminals will operate in conventional Ku-band frequencies (14.0-14.5 GHz uplink, 11.7-12.2 GHz downlink) and will communicate with the U.S.-licensed GE-4 satellite located in the 101°W orbit location. Because these bands are allocated exclusively to the fixed-satellite service (“FSS”) on a primary basis, Raytheon’s proposed operations raise no coordination issues with respect to co-frequency operations of other services. In addition, because Raytheon will comply with all rules applicable to VSAT operations in these bands, and because all of the earth stations Raytheon proposes to use in its experimental VSAT network comply with the antenna performance standards set forth in Section 25.209 of the rules and other applicable FCC requirements, there is no possibility of interference to other primary FSS operations.²

The FCC rules provide that experimental licenses may be granted for a variety of circumstances, including (i) for technical demonstration of equipment or techniques; (ii)

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However, the remote terminals will operate only when properly deployed as fixed VSAT earth stations.

² Raytheon proposes to use only commercial, off-the-shelf VSAT hub and transportable remote earth stations that have been certified for compliance with the FCC’s rules by the various manufacturers.

demonstration of equipment to prospective purchasers by persons engaged in the business of selling radio equipment; and (iii) testing of equipment in connection with production or regulatory approval of such equipment.³ Raytheon's request for experimental authority satisfies all of these criteria. First, Raytheon proposes to demonstrate that transportable Ku-band earth stations can be successfully utilized as VSAT remote terminals to provide communications restoration services on an as-needed basis. Second, Raytheon intends to demonstrate the capabilities of its transportable VSAT network to potential customers of satellite communications services throughout the United States. Finally, to the extent its testing and demonstrations are successful, Raytheon intends to pursue permanent FCC authority (on its own behalf or by assisting individual customer applicants) to operate one or more transportable VSAT networks.

The use of transportable Ku-band earth stations in a VSAT configuration for service restoration purposes is an important area of research and experimentation that will afford substantial public benefits if demonstrated to be viable. Recent events have shown that terrestrial communications networks are vulnerable to disasters and other unexpected occurrences. The deployment of transportable Ku-band VSAT terminals on an as-needed basis would permit the rapid restoration of communications service in the event of an outage – whether for commercial, governmental, military or other purposes. Restoring service under such circumstance would enable the continued flow of communications traffic and ongoing conduct of commercial and governmental business, and could enhance the ability of governmental

³ See 47 C.F.R. §5.3.

authorities to respond to the situation at hand. Accordingly, FCC grant of the experimental operating authority requested herein would serve the public interest by permitting Raytheon to validate this innovative concept and to address potential operational issues, thereby providing a new approach to providing back-up communications services to U.S. telecommunications customers.

In connection with this experimental application, Raytheon requests an exemption from Section 5.115 of the Commission's rules. That provision states that each class of station in the experimental services shall, unless specifically exempted by the terms of the station authorization, transmit its experimental call sign at the end of each complete transmission. Raytheon submits that it should be exempt from this requirement because the unique operational circumstances of its experimental transportable VSAT network make application of this rule entirely unnecessary and unduly burdensome.

As noted above, Raytheon proposes to operate its experimental VSAT network in primary FSS spectrum in the conventional Ku-band, and all of its earth stations comply with the FCC's antenna performance specifications and other earth station rules. Thus, there is no possibility of interference to other services or to other FSS operations in the bands.⁴ As a result, there is no need to require Raytheon to transmit station identification information from each of its proposed earth stations after every transmission, nor would any public benefit result from such a requirement.

⁴ Indeed, earth stations operating under Part 25 of the FCC rules are not subject to such station identification requirements. See 47 C.F.R. §25.206.

Moreover, imposing such a requirement on Raytheon in the context of its proposed experimental operations would be unduly burdensome. Each of the earth stations to be used by Raytheon are commercial, off-the-shelf items that are not capable of transmitting station identification information after each transmission. Moreover, the transportable VSAT remote terminals will transmit intermittently depending on the communications be carried during demonstration operations, making it impossible to transmit station identification information at the end of each individual transmission. Finally, Raytheon seeks to demonstrate its experimental VSAT network under “real world” conditions to prospective customers in order to validate its new communications concept. Significantly modifying standard earth station equipment (if it is even possible) or operational procedures would substantially undermine Raytheon’s “proof of concept” testing and customer demonstrations, which would be contrary to the public interest given the potential benefits of Raytheon’s transportable VSAT network. Accordingly, Raytheon respectfully requests that the Commission grant an exemption from the station identification requirement of Section 5.115 of the rules.