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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Amendment of Parts 2 and 25 of	)	
the Commission's Rules to Allocate	)	
Spectrum in the Ku- and Extended	)	
Ku-Bands to the Vehicle Mounted Earth	)	RM No. _____
Station Satellite Service ("VMES") on a	)	
Shared Primary Basis and to Adopt	)	
Licensing and Service Rules for VMES	)	
Operations in the Ku- and Extended	)	
Ku-Bands	)	

To: The Commission

PETITION FOR RULEMAKING

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May 24, 2006

SUMMARY

General Dynamics SATCOM Technologies, Inc. ("General Dynamics"), a market leader in providing mobile satellite communications products and services, respectfully requests that the Commission initiate a rulemaking to amend Parts 2 and 25 of its Rules to allocate spectrum for use with Vehicle Mounted Earth Stations ("VMESs") in the Fixed Satellite Service ("FSS") in the Ku-band uplink at 14.0-14.5 GHz and Ku-band downlink at 11.7-12.2 GHz on a primary basis, and in the extended Ku-band downlink at 10.95-11.2 GHz and 11.45-11.7 GHz on a non-protected basis, and to adopt service and licensing rules for VMES operations in the Ku-band. In doing so, the Commission would: facilitate the U.S. military's critically important training needs with respect to advanced VMES technologies; enable more efficient and flexible use of spectrum consistent with the approach recently taken in the context of the Earth Stations on Vessels (ESVs) proceeding; and advance the Commission's important goals and objectives for market-driven deployment of broadband technologies.

General Dynamics' Satcom-on-the-Move™ (SOTM), as the name implies, is a system that mounts sub-meter earth station antennas directly on vehicles to provide reliable communications as the vehicle moves. Currently, General Dynamics' SOTM terminal — the first such system to be licensed by the FCC for use in the United States — is ruggedized for use by military forces and can be mounted on a wide variety of combat vehicles to provide reliable, high-bandwidth voice, video, and data communications over satellite. General Dynamics presently operates the SOTM system pursuant to experimental authority and, in this way, has been able to engage in demonstrations that are a decisive component of the U.S. military's procurement procedures. However, this limited authority has generally only permitted General Dynamics to test and demonstrate SOTM technologies and is insufficient to meet the military's

requirements for widespread domestic training with SOTM and other VMES technologies as they are acquired.

In recently establishing service and licensing rules for ESVs, the Commission engaged in a comprehensive study regarding mobile satellite operations in the Ku-band, and adopted carefully prescribed requirements to ensure that existing operators in the band (in particular, federal government stations) were adequately protected from harmful interference. Those recent rulings have created a new class of earth station providing broadband communications via spacecraft in the FSS in a manner which is fully consistent with existing FSS earth stations. In more than three years of operating the SOTM system, General Dynamics has proven, without question, that it too can meet the operating rules recently established in Part 25 of the Commission's Rules governing ESVs for a slightly different class of earth station. As such, with one limited exception, General Dynamics proposes that the Commission expand the rules governing ESVs to include VMES uses. Timely adoption of a Ku-band VMES allocation and extending the ESV service and licensing rules to VMES operations will promote more efficient use of spectrum, ensure greater regulatory certainty in the market by defining spectrum rights and responsibilities, and improve access to spectrum by services with mutually compatible technical characteristics. This, in turn, will advance the FCC's goals and objectives for market-driven deployment of broadband technologies.

SOTM and similar VMES technologies represent a critical leap forward in tactical military communications and every effort should be made to facilitate the U.S. military's widespread training with such technology. The action requested herein would permit VMES operators and satellite systems integrators to meet the important testing and training needs of the U.S. military. Moreover, because of the nature of VMES technology, it is predictable that non-

military requests will be forthcoming and, as such, a regularized licensing process would also provide a clear licensing framework for such applications when the market is ready. Accordingly, initiating a rulemaking to regularize the service and licensing rules for VMESs, as proposed herein, is necessary and would directly serve the public interest.

TABLE OF CONTENTS

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In the Matter of:	)	
	)	
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To: The Commission

PETITION FOR RULEMAKING

General Dynamics SATCOM Technologies, Inc. ("General Dynamics"), by its attorneys and pursuant to Section 1.401 of the Commission's Rules, 47 C.F.R. § 1.401, respectfully requests that the Commission initiate a rulemaking to amend Parts 2 and 25 of its Rules to allocate spectrum for use with Vehicle Mounted Earth Stations ("VMESs") in the Fixed Satellite Service ("FSS") in the Ku-band uplink at 14.0-14.5 GHz and Ku-band downlink at 11.7-12.2 GHz on a primary basis, and in the extended Ku-band downlink at 10.95-11.2 GHz and 11.45-11.7 GHz on a non-protected basis, and to adopt licensing and service rules for VMES operations in the Ku-band. Such action will ensure that the U.S. military is able to adequately test and train with mission-critical VMES satellite communications systems. Initiating the proposed rulemaking will also promote many important Commission goals and objectives, including: (1) more efficient use of spectrum; (2) greater regulatory certainty by establishing a

regularized licensing procedure and clearly defining spectrum rights and responsibilities; (3) improved access to spectrum by services with mutually compatible technical characteristics, and (4) broader market-driven deployment of broadband technologies. Prompt initiation of the requested rulemaking would, in turn, deliver the numerous benefits discussed below and strongly serve the public interest.

I. Background

General Dynamics is the largest manufacturer of satellite earth station equipment in the world. For many years, General Dynamics has utilized this expertise while working closely with the U.S. military to develop, test, and deploy advanced satellite communications technologies. A primary goal of these ongoing, collaborative efforts has been to ensure that, as tactical military operations become increasingly dependent upon reliable access to large volumes of real-time information, military communicators have the bandwidth and mobility they require to effectively operate under battlefield conditions. In this regard, General Dynamics' Satcom-on-the-Move™ (SOTM) system has advanced the state-of-the-art considerably.

A. Description of General Dynamics' SOTM System

Similar to a standard VSAT system, General Dynamics' SOTM system consists of a fixed earth station serving as one endpoint of the link, and various mobile earth station antennas mounted on combat vehicles, each serving as the other endpoint. The fixed earth station utilizes a standard 2.4 meter or larger earth station antenna, which is fully compliant with the Commission's regulations and includes standard downlink and uplink equipment with a small, power-controlled transmitter.

The sub-meter mobile terminals consist of a custom-designed, high-performance antenna and tracking system that makes use of both active RF tracking as well as predictive-tracking technologies utilizing sophisticated Inertial Navigation Systems and GPS receivers. The

system's unique design ensures that the mobile terminal is stabilized at all times so that there is no need to stop the vehicles to lock onto a satellite. This important development enables reliable, tactical military communications despite the intense gyrations that occur as the vehicles move over rough terrain. The SOTM system uses TDMA technology and commercial Ku-band transponders to provide full-duplex, high data rate[1] communications, including voice and full-motion video, to coverage areas that are large and very well defined.

B. It is Prudent and Timely for the Commission to Adopt Regularized Licensing Procedures for VMES Operations

General Dynamics has been operating the SOTM system (initially using .60 meter mobile earth station antennas) since November 24, 2004, pursuant to special temporary authority ("STA") and subsequently granted regular experimental authorization to access Intelsat 707 at 53° W.L.[2] On July 25, 2005, General Dynamics was granted STA to modify its experimental authorization to allow for domestic testing, demonstration, and training operations via six additional satellites from all CONUS locations.[3] On November 24, 2005, General Dynamics was granted authority to further modify its experimental authorization to operate three additional 2.4 meter hub stations, and to operate smaller (.45 and .50 meter) mobile earth station antennas from all locations in the United States, including Alaska and Hawaii.

General Dynamics continues to be a leader in this growing segment of the satellite communications industry. However, it is not the only company developing and testing mobile

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1 Recent testing has demonstrated downlink data rates in the 10s of Mbps and uplink data rates in excess of 2 Mbps.

2 File Nos. 0640-EX-ST-2004, 0123-EX-PL-2005.

3 File No. 0390-EX-ST-2005 (authorizing use of the following six satellites (and Intelsat 707 at 53° W.L.): AMC-9 at 83° W.L. (operated by SES Americom), Horizons 1 at 127° W.L. (operated by PanAmSat), and IA-5 at 97° W.L., IA-6 at 93° W.L., IA-7 at 129° W.L., IA-8 to be located at 89° W.L. (all operated by Intelsat).

satellite communications technologies. The U.S. military is currently working with other solutions providers to develop and test similar VMES systems in order to enhance tactical military communications capabilities and ensure battlefield superiority. With multiple companies working continuously with the U.S. military in this way, it is prudent and timely for the Commission to adopt regularized licensing procedures for VMES services. Doing so would permit VMES operators and satellite systems integrators to provide the U.S. military with the flexibility necessary to engage in widespread testing and training with advanced VMES technologies. Additionally, this action would ensure that commercial providers in the VMES market serving non-military customers have defined licensing procedures to follow when seeking operating authority, as such applications are certain to be forthcoming.

II. Proven Capabilities of the SOTM System

Today's lighter, more agile combat formations can quickly relocate beyond the range of stationary communication systems. Thus, much of the efforts of General Dynamics and others are focused on building converged communications networks that enable soldiers and mobile command and control vehicles to stay connected anytime and anywhere by providing seamless communications capabilities with reliable mobility and bandwidth. These capabilities are delivered by leveraging both terrestrial mobile technologies, like 3rd Generation cellular and Wireless LAN, and combined military and civil advanced satellite communications systems, such as General Dynamic's SOTM. Such high-speed, robust mobile communications are staple requirements for programs like the Army's Warfighter Information Network – Tactical (WIN-T) architecture and the U.S. Marine Corps' Command and Control On-The-Move Network Digital Over-The-Horizon Relay (CONDOR), which have permanently transformed the U.S. military's approach to tactical battlefield communications.

As modern warfare continues to change, General Dynamics has endeavored to keep pace with the U.S. military's growing need for advanced mobile communications. And although General Dynamics' SOTM is just one of many important technologies that have advanced these capabilities, its impact and success to date cannot be overstated. General Dynamics' SOTM has demonstrated outstanding RF and mechanical performance in a full range of operating environments including such extremes as off-road terrain in armored military vehicles. Its fundamental design was based on the requirement to meet the Commission's ESV antenna tracking requirements even under the full shock and vibration tests specified for survival of such military vehicles as the HMMWV on the Churchville B Course at Aberdeen Proving Grounds. Years of testing even under these extreme conditions have not resulted in a single case of observed interference on any satellite communications spacecraft or earth station. In fact, continued operational tests have demonstrated the SOTM terminals to be fully compliant with all existing and planned FSS earth stations and communications applications

As described above, the initial .60 meter mobile terminals have a clear track record of meeting and exceeding the requirements recently set for ESVs. Further, extensive testing with Ku-band antennas having apertures of .50 and .45 meters has demonstrated no greater deviation from the radiation pattern requirements specified in Part 25 of the Commission's Rules than the .60 meter antennas. Moreover, the EIRP power spectral density values for the smaller antennas are no higher, at any angle of radiation, than those produced by a combination of the .60 meter antenna and an input power spectral density of -21 dBW/4 KHz — equivalent to the permitted EIRP density envelope generated by any FSS earth station authorized by the Commission.

A. The Military's Growing Need for VMES Technology

As SOTM technology continues to improve, military communicators are developing a wider range of applications for its use. While military satellite communications are capable of

supporting many of the previous broadband military communications requirements, they continue to be insufficient to meet both current and anticipated demand. U.S. forces are using a vast array of civil FSS resources to meet their increasing need for bandwidth, including fixed and transportable fixed site locations. The prospect of SOTM terminals deployed with tactical forces directly ensures full interoperability with the very significant FSS civil infrastructure already in place, and provides essential "surge capacity" when needed anywhere in the world. The total spectrum now available for both civil and military mobile satellite systems is already severely over-taxed by currently deployed forces and is simply insufficient to meet the future demands. The use of SOTM terminals in a mode that is fully compatible with existing FSS users offers a unique broadband solution, which is urgently driven by current and future military requirements.

In order to fulfill the U.S. military's requests, General Dynamics and other VMES systems operators are working tirelessly to advance the state-of-the-art. These advances, in addition to the declining cost of terminal equipment and components, continue to create new uses for VMES technology, which also increases the prospect of non-military applications in this highly innovative sector.

B. Non-military Licensing Requests are Predictable Given Recent Advances in VMES Satellite Communications Systems

It is clear from recent U.S. military demonstrations and trials that General Dynamics' SOTM terminals are able to deliver reliable, high-bandwidth voice, video, and data communications over satellite while on the move — all without disruptive interference. In addition to such military applications, however, the SOTM system and other VMES technologies are ideally suited for homeland defense and disaster recovery uses to supplement, or even replace, disabled terrestrial communications systems. Chairman Martin recently lauded the efforts of the satellite industry during the recovery efforts following the 9/11 attacks and the

unusually deadly 2005 hurricane season, explaining that "satellite providers proved that the service's ubiquity is essential in times of crisis."[4] General Dynamics has already fielded cellular radio extension systems based on FSS earth station systems. Several requests have been received to implement such systems utilizing SOTM terminals for a much-improved, first-response capability. A primary VMES allocation in the Ku-band and regularized service and licensing rules would provide the regulatory certainty and incentive necessary to encourage commercial satellite service providers and systems integrators to develop and maintain such advance communications capabilities. This would significantly enhance the capabilities of emergency response teams at critical times of need.

In addition to strengthening the emergency preparedness of our first-responders, permitting broader VMES operations, under carefully prescribed conditions, would make such advanced technology available for various commercial purposes. As these systems continue to improve and hardware and operating costs steadily decline, it is predictable that non-military licensing requests will arise because SOTM and other VMES technologies could easily be used in various commercial contexts (often in remote areas) where high-bandwidth, mobile communications capabilities are particularly beneficial, such as for satellite news gathering and weather services, mineral / fossil fuel exploration and extraction, and large-scale construction projects.

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4 *See* Remarks of FCC Chairman Kevin J. Martin to the Satellite Industry Association's Satellite Leadership Dinner (February 6, 2006) (*available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-263684A1.pdf).

III. The Commission Should Modify the Table of Frequency Allocations for the Ku-band to Allow for VMES Operations Using the Same Approach as ESVs

To provide for the many benefits mentioned above, the Commission should modify the U.S. Table of Frequency Allocations, 47 U.S.C. § 2.106, to allocate the 14-14.5 GHz and 11.7-12.2 GHz bands for VMES operations on a primary basis, and allocate the 10.95-11.2 GHz and 11.45-11.7 GHz bands for VMES operations on a non-protected basis, in exactly the same approach as ESVs. Doing so is consistent with the Commission's policy as set forth in the ESV proceeding,[5] and provides an optimal operating environment for VSAT-like systems, such as SOTM.

General Dynamics' SOTM technology was initially designed to operate on military Ka-band transponders, where smaller antennas can still achieve high gain. However, when the Ka-band satellite system implementations — in the form of Wideband Gapfiller Satellite System today and the Transformational Satellite System of the future — were delayed, urgent military requirements demanded faster implementation. General Dynamics quickly examined the best alternatives available to support U.S. forces in the Middle East, as well as other potential theaters of operation, with reliable, high-bandwidth mobile satellite communications systems. Based on the many field-proven advantages of Ku-band equipment and services, and the well-known

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5 The Commission made clear its preference of encouraging "ESV operators to utilize the Ku-band for their operations wherever possible through enhanced rights and limited regulation in that band. Given the relatively limited presence of FS users in the 11.7-12.2 GHz band and our belief that the proliferation of Ku-band satellites is making Ku-band spectrum more accessible and reliable, we view the Ku-band as an ideal operational environment for future ESV growth, particularly for use on inland waterways." *See In the Matter of Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5926-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/11.7-12.2 GHz Bands*, Report and Order, 20 FCC Rcd. 674 ¶ 2 (2005) ("*ESV R&O*").

characteristics of Ku-band satellite transponders, General Dynamics re-focused its efforts on a *Ku-band system in order to meet the U.S. military's needs.*

Ku-band spectrum is especially well-suited for VMES operations because it offers very high potential data rates. This is because the Ku-band is almost exclusively satellite and not shared with terrestrial services and, thus, it permits relatively high power densities on uplink and downlink signals. Existing Ku-band satellites have already been designed and launched with very high EIRP and G/T capabilities intended to support the rapidly growing numbers of broadband VSAT networks. Also, unlike any other band, the Ku-band promises near-global broadband coverage.[6] Such extensive coverage is essential for military customers that need to test and train with Ku-band equipment in the U.S., but also need the capability to use such equipment in various other parts of the world.[7]

Further, leasing worldwide Ku-band commercial capacity in a cost-efficient manner is already a familiar process to the U.S. Government. For example, in addition to those deployed for use with General Dynamics' SOTM system, the U.S. Government is already fielding commercial Ku-band earth terminals under the Department of Defense Teleport program and has leased Ku-band space segment in several different coverage areas. The Ku-band's favorable operating characteristics have led to increased production volumes for individual hardware components, driving prices down and performance up considerably. General Dynamics' SOTM

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6 The Ku-band already has a mature VSAT infrastructure due to the availability of reliable broadband service for reasonable aperture antennas.

7 SOTM is instantly interoperable with existing infrastructure, whereas L-band cannot provide the necessary bandwidth (at any cost), military X-band antennas are too large to be useful on military command and control vehicle in combat situations, and Ka-band will not be globally available for years.

terminals make maximum use of this field-proven hardware, thereby lowering costs and enhancing performance to the benefit of the U.S. military and other customers.

Based on these factors, General Dynamics proposes that the Commission add the following non-Federal Government footnotes to the U.S. Table of Frequency Allocations for the Ku-band: (1) "NGXXX: In the bands 11.7-12.2 GHz (space-to-Earth) and 14.0-14.5 GHz (Earth-to-space), Vehicle Mounted Earth Stations (VMESs) are an application of the fixed-satellite service (FSS) and may be authorized to communicate with space stations of the FSS on a primary basis." and (2) "NGXXX: In the bands 10.95-11.2 GHz and 11.45-11.7 GHz, Vehicle Mounted Earth Stations (VMESs) may be authorized to communicate with U.S. earth stations through space stations of the fixed-satellite service but must accept interference from terrestrial systems operating in accordance with the Commission's Rules." By authorizing VMES operations in the Ku-band on a primary and non-interference basis as described above, and extending the service and licensing rules governing ESVs to VMESs, the Commission can ensure that existing primary users and government stations are sufficiently protected from harmful interference. Authorizing VMES operations in the Ku-band will also serve the critical needs of the U.S. military and the public interest, as well as foster important Commission goals, which include: (1) clearly defining spectrum rights and responsibilities; (2) promoting efficient and flexible use of spectrum resources; and (3) improving access to spectrum by services with mutually compatible technical characteristics.

IV. The Commission Should Extend the ESV Service and Licensing Rules for Ku-band Operations to VMESs

As described above, General Dynamics has consistently shown that it is able to meet the Commission's ESV requirements when operating SOTM in the Ku-band. Yet, the existing licensing regime, which requires operators to repeatedly seek STA or experimental authority, is

inadequate to meet expanding needs of the U.S. military for extensive field testing and training with the SOTM and other VMES systems. Therefore, to enable commercial satellite services vendors and systems integrators to provide these critical services to the U.S. military, the Commission should, with one limited exception, regularize the service and licensing rules for VMES operations in accordance with the recently promulgated ESV rules in the Ku-band.[8]

In recently adopting these ESV rules, the Commission undertook an extremely thorough and comprehensive examination of the Ku-band and its related technical characteristics. Among other important considerations, the Commission carefully addressed off-axis e.i.r.p-density limitations and associated rules applicable to ESVs. The Commission determined that the best approach would be to combine "the antenna performance requirements of Section 25.209(g) and the input power density to the antenna requirements of Section 25.212(c) of the Commission's rules, to produce off-axis e.i.r.p.-density limits for ESV transmitters."[9] General Dynamics has proven that SOTM is able to meet these requirements and the rest of the operation rules applicable to ESVs. SOTM would likewise ensure the protection of existing users of the Ku-band spectrum, particularly, the government stations. Based on this recent examination of the Ku-band to address ESV operations, in addition to the considerable

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8 In the ESV Order, the Commission made the following modifications to Part 25 in order permit ESV operations in the Ku-band: new § 25.222 was added to the Table of Context and body of Part 25; § 25.115 was amended by adding paragraph (a)(2)(iii); § 25.130 was amended by revising paragraph (a); § 25.201 was amended by adding the definitions of "Ambulatory," "Baseline," "Earth Station on Vessel ("ESV")," and "Low-Tide Elevation;" § 25.202 was amended by adding paragraph (a)(8); § 25.203 was amended by revising paragraphs (a), (b), (d) and (k) and the introductory language in paragraph (c); § 25.204 was amended by adding paragraph (i); § 25.205 was revised to include new paragraph (b); § 25.271 was amended by revising paragraphs (b) and (c) and adding a new paragraph (f); § 25.277 was amended by revising paragraph (b) and the introductory language of paragraph (c). *See ESV R&O* at Appendix B.

9 *See id.* at ¶ 99.

expertise gained in addressing frequent applications for STA and experimental authority by VMES operators, the Commission may confidently adopt regularized service and licensing rules for VMES operations in the Ku-band. With the limited exception identified below, this could be accomplished by simply modifying § 25.222 of the Commission's Rules to include the text "and [/ or] VMES" after each reference to ESV(s).

A. The Commission Should Not Apply the ESV Data Tracking Requirements of Section 25.222 (c) to VMES Hub Operators

Continued operation of several VMESs over the last few years has demonstrated that they can operate reliably without causing interference to other FSS spacecraft or earth stations. In its ESV ruling, the Commission included transmitter location logging requirements in "the unlikely event that we are presented with an interference concern... ."[10] While such precautions were prudent for the initial demonstration of a new service such as ESVs, in practice, government users of ESV terminals, perhaps the largest of which is the U.S. Navy, have not been able to provide such logging services due to security constraints. To some extent, similar security limitations apply to military VMES users. We believe the proven lack of interference experienced due to ongoing ESV and VMES operation, coupled with the demonstrated remote satellite geolocation capabilities of existing FSS spacecraft operating companies, should be sufficient to preclude the need for detailed logging of VMES operating locations.

In that regard, VMES operation would be no different than existing blanket-licensed VSAT terminals which actually have much less antenna pointing control than VMES antenna systems and are, thus, much more likely to become sources of potential interference. In addition, transportable Satellite-Newsgathering (SNG) earth stations operating on Ku-band frequencies in

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[10] *See id.* at ¶ 112.

the FSS (with undefined temporary fixed locations anywhere in the United States) have much higher transmit power levels and are much larger potential sources of interference than either VMESs or VSAT earth stations. For several years these SNG earth stations have demonstrated outstanding performance with virtually no interference incidents. Since the continued operation of Ku-band SNG earth stations, VSAT terminals, ESVs, and VMESs have a demonstrated history of avoiding interference to other FSS users, we respectfully request that the Commission decline to mandate location logging requirements in the VMES ruling.

V. Public Interest Benefits of Ku-band VMES Allocation

As described above, initiating the requested rulemaking is necessary to facilitate the U.S. military's important training needs with respect to advanced VMES technologies. A VMES allocation in the Ku-band and regularized service and licensing rules would also provide the regulatory certainty and incentive necessary to encourage commercial satellite service providers and systems integrators to develop and maintain such advance communications capabilities. These capabilities would significantly enhance the emergency preparedness of our first-responders during critical times of need, and would also increase the potential that such advanced technology will be made available for various commercial purposes where high-bandwidth, mobile communications capabilities are particularly beneficial. General Dynamics believes that the instant request is commensurate with goals of the FCC regarding satellite communications, as recently conveyed by Chairman Martin in his remarks to the satellite industry:

> Terminals are smaller and easier to use; Data rates are higher; and Coverage areas are more dynamically defined. I encourage you to continue these efforts to innovate, to integrate, to interoperate -- and to rethink the ways that this unique sector can remain relevant, reliable, and innovative. For our part at the FCC, my colleagues and I are doing all that we can to help in meeting this challenge: I believe that it is the Commission's responsibility to ensure

technological and competitive neutrality in competitive communications markets, including the satellite communications markets.[11]

The advanced VMES technologies discussed herein provide an excellent example of the rapid innovation driving today's satellite communications industry. Applying the ESV service and licensing rules to VMES operations advances many important commission goals, including more efficient and flexible use of spectrum, greater regulatory certainty, increased use of Ku-band (over C) band wherever possible through enhanced rights and limited regulation in that band, and broader market-driven deployment of broadband technologies — all of which ultimately ensure that innovation in this sector continues unfettered. The relatively modest changes proposed herein would make a significant contribution to the satellite industry as a whole; and considering that the Commission has just recently undertaken similar efforts in the context of ESVs, the considerable benefits that will be achieved more than justify initiation of the proposed rulemaking.

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11 *See*, *supra*, fn. 4.

VI. Conclusion

For the foregoing reasons, General Dynamics respectfully requests that the Commission initiate a rulemaking to amend Parts 2 and 25 of its Rules to allocate VMES in the Ku-band uplink at 14.0-14.5 GHz and Ku-band downlink at 11.7-12.2 GHz on a primary basis, and in the extended Ku-band downlink at 10.95-11.2 GHz and 11.45-11.7 GHz on a non-protected basis, and to adopt licensing and service rules for VMES operations in the Ku-band.

Respectfully submitted,

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DECLARATION

I, Timothy M. Shroyer, Chief Technical Officer for Satcom Technologies, General Dynamics C4 Systems, hereby declare, under penalty of perjury under the laws of the United States, that I have reviewed the above-captioned Petition for Rulemaking and that the statements of fact made therein are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Timothy M. Shroyer
Chief Technical Officer
General Dynamics C4 Systems

Date: 5/19/06