

UPCOMING EVENTS

26-28 June 2013
Inmarsat Government
Conference, Washington
DC., [http://
www.inmarsatgov.com/
about/news/events-
home/](http://www.inmarsatgov.com/about/news/events-home/)

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CHIEF'S MESSAGE



Welcome to summer and the July issue of the Commercial Satellite Communications (COMSATCOM) Scoop!

As mentioned in the last issue, I am leaving the COMSATCOM Center in July and retiring from the US Army later this year. It has been an honor to serve as the Chief, COMSATCOM Center, at DISA – thank you for being part of the adventure. At this time, I would like to take this opportunity to welcome my replacement - Captain Jon Kennedy, US Navy. CAPT Kennedy has been the COMSATCOM Center Enhanced Mobile Satellite Service (EMSS) Division Chief, for the past year and is quite familiar with the Center's mission. I am confident that he will continue to provide the same high level

of service to you, and I know that he looks forward to working with all of you to meet your COMSATCOM Service needs. Welcome, CAPT Kennedy!

In this issue of the Scoop, we feature articles on retiring Inmarsat Legacy Services; the benefits of using the Ka band spectrum; Subscription Services offerings on General Services Administration (GSA) Schedule 70, Special Item Number (SIN) 132-55; using the Joint Integrated Satellite Communications (SATCOM) Tool (JIST) to submit satellite access requests; and quick tips on submitting a Military Interdepartmental Purchase Request (MIPR). We also provide clarification on a topic in the April Scoop issue, the re-designation of Regional SATCOM Support Center (RSSC) West.

Please note that because of DISA's continuous search for efficiencies, it has been determined that all lower level agency newsletters will be discontinued as of June 30, 2013. That said, this is the last issue of the COMSATCOM Center Scoop. Just remember the team will always be here to address any COMSAT questions you have.

Thank you for your participation on the annual customer satisfaction survey. We greatly appreciate the feedback. Please enjoy a happy and safe summer.

— COL Michelle Nassar

INMARSAT LEGACY SERVICES—Planning for Transition

For over 15 years, the Inmarsat I-3 constellation of satellites has supported a wide array of land, maritime, and aeronautical Mobile Satellite Services (MSS) to the military and government sectors, providing near-global access to voice, data, and safety services. As the end-of-life expectancy for these satellites approaches, users must plan for the retirement of legacy services and the transition to the I-4 constellation and services.

There are eight legacy services with fixed retirement dates and six of which retire within the next 18 months. The first to reach end-of-life is Large-Antenna Mini-M (LAMM), retiring this month (July 2013). Global Area Network (GAN) service, also known as M4 and land-based Mini-M services, retire in September 2014. This will affect approximately 2000 M4 and 600 Mini-M users. The options for replacing these with I-4 compatible services are either Broadband Global Area Network (BGAN) or Global Satellite Phone Service (GSPS) via IsatPhone Pro and IsatPhone Link.

The next round of retiring services will affect approximately 1000 users in December 2014



when Inmarsat D-plus, Inmarsat B, and Inmarsat M will reach end-of-life. Inmarsat B and M users may transition to either FleetBroadband or BGAN, depending on the requirement. Inmarsat D-plus users can opt for either IsatM2M, on the I-3 constellation until I-3 end-of-life, or IsatData Pro, which is available on the I-4 satellites.

The final round of retiring services will occur in December 2016 and only affect approximately 30 maritime Mini-M users and 60 Aero H users. Maritime Mini-M users have the option to switch to FleetBroadband or GSPS FleetPhone while Aero H users can trade up to Swift 64 or SwiftBroadband services.

Users of Aero H-plus and Inmarsat C will not need replacement services; they will transition to the I-4 constellation. Inmarsat has not announced retirement dates for Fleet 33, Fleet 55, Fleet 77, Swift 64, Aero I, and IsatM2M. These

services will continue on the I-3 constellation for as long as it is operational.

As services retire or transition to the new constellation, Inmarsat is also simplifying its network infrastructure by closing eight I-3 Ground Earth Stations (GES) and transitioning services to two new Inmarsat GESs. The user impact of this change is Aero H-Plus and Aero I will no longer provide PC data and fax, broadcast data, or secure voice services. Users of these services should review their requirements and upgrade to Swift 64 or SwiftBroadband, if necessary.

The COMSATCOM Center advises all Inmarsat customers to review their current services and mission requirements to avoid any lapse in service as these changes occur. For assistance or questions, please contact our MSS help desk at 301-225-2600.

Ka IMPLICATIONS ON COMSATCOM

Almost 75 years-ago, the age of high frequency communications began with the use of C-band for Microwaves and Radio Detection and Ranging RADAR applications. To place into perspective, RADAR was supposed to detect the invasion by the Japanese at Pearl Harbor, December 7, 1941. Now fast forward to the 21st century, a new age of high frequency communications called Ka-band is becoming the novelty of the satellite industry. What is this new capability? This is a basic introduction to Ka-band as it relates to SATCOM.

Ka-Band: An 18-Wheeler Data Hauler: Ka-band will trigger a significant step-change in the satellite communications industry. While presenting challenges for some existing operators, it will create new opportunities and business models for others. Ka-band is the logical extension to Ku-band and will evolve to be the delivery mechanism of choice for emerging markets and high-demand regions throughout the world. Ka is bringing an additional 2500 GHz of raw bandwidth to the SATCOM spectrum. (2.5 times the raw bandwidth of C and Ku combined.) When this raw spectrum is reused with polarization, regional beams, steerable beams, and, es-

pecially “spot beams,” a typical Ka-band satellite has the potential of offering 8-12 times the capacity of a typical Ku-band satellite. As a comparative analogy, imagine the C-band spectrum as a pickup truck data hauler; the Ku-band spectrum would then resemble a U-Haul truck data hauler; and the Ka-band is an 18-wheeler data hauler. Although the Ka-band satellites are the center of attention in most Ka-band discussions, the new technologies (spot beams, steerable beams, Automatic Power-control, antennas design, signal processing, etc.) introduced to support and optimize Ka-band systems are just as important as the satellites themselves.

Ka Spectrum Allocation: ITU’s Radio Regulations have not strictly defined Ka-band limits. However, for the purposes of this presentation, we will define the Ka-SATCOM spectrum as the frequency band extending from 17.3GHz to 31GHz. Within this spectrum, the 27.5GHz to 31GHz is for uplink services (ground to satellite transmissions) and the 17.3GHz to 21.8GHz is for downlink services (satellite to ground transmissions). This spectrum has approximately 1GHz of bandwidth for terrestrial and

HDTV services, leaving approximately 2.5GHz for various SATCOM services. This 2.5 GHz SATCOM spectrum within the Ka-band is then reduced two sub-bands: a 1GHz Government and Military band that extends from 30GHz to 31GHz in the uplink and 20.2GHz to 21.2GHz in the downlink; and a 1.5GHz commercial band allocated to the operation of GEO, MEO, and LEO satellites.

Ka Transition Challenges: The fact that most SATCOM service providers and customers currently use Ku infrastructures and equipment will create challenges in Ka deployment. Some of these challenges include but not limited to Economic Challenges such as providers with high investments in Ku infrastructures would like to amortize current assets before making significant investments in Ka. Secondly, customers with large Ku band networks (dozens, perhaps hundreds of terminals) would also like to amortize their current assets before making Ka investments. Third, the price-point of Ka components and devices are high compared to similar Ku RF/IF devices. (The dish or antenna structure may be cheaper but the amplifiers, converters and control electronics are still pricey). Technical Challenges such as Ka offers

Ka IMPLICATIONS ON COMSATCOM –Continue

several advantages, it also brings along some technical challenges such as its high susceptibility to rain and propagation effects. To mitigate these issues, technical remedies such as Automatic Power Control and Adaptive Coding schemes are introduced or integrated into the “Ka culture”. This new “Technical culture” is yet to assimilate or receive acceptance by the current generation of SATCOM Engineers and Technicians. It could take 3-5 years for the Engineering Community to appreciate all the nuances and optimization tricks of Ka systems. *An analogy would be that a chef who uses “Idaho potatoes” effectively in their menus requires a different appreciation of “sweet potatoes” in order to realize similar effective-*

ness. See Regulatory Challenges as in developing countries, where spectrum is often exploited with very political overtones. This culture limits the incentives for entrepreneurs and private companies. It also slows down the development and implementation of new technologies.

Conclusion: Seventy years ago, C-band changed the use of higher frequency landscape, 30 years ago; the Ku-band changed the SATCOM landscape significantly. During the next decade, the Ka-band will change the SATCOM landscape even more dramatically than the Ku-band. Due to increasing demand in SATCOM services, the C and Ku spectrum can no longer meet the projected global

SATCOM demand. For the SATCOM users, the Ka is set to offer a vast range of competitive multimedia services at the lowest cost-per-bit yet achieved.

Despite several economic, regulatory and technical challenges presented to Ka-band operational implementation (deeper rain fades, atmospheric effect, potential Adjacent Satellite Interference; Inter-spot handoffs; automatic Power Control; Adaptive coding), the SATCOM Industry is developing solutions to mitigate Ka-band constraints, and views the Ka-band as an enormous opportunity to advance the Information Revolution with new broadband and Multimedia services.



SUBSCRIPTION SERVICES

One of the four contracting vehicles in the Future COMSATCOM Services Acquisition suite is the General Services Administration's (GSA) Schedule 70 Special Item Number (SIN) 132-55 for subscription services. Many in the COMSATCOM community think this only applies to mobile services, such as Inmarsat, but there are also offerings for fixed satellite users. Of the 29 contractors with current, SIN 132-55 offerings, 19 offer some form of subscription services for FSS.

The GSA defines subscription services as, "...pre-existing, pre-engineered Fixed Satellite Service (FSS) and/or Mobile Satellite Service (MSS) solutions, typically including shared or dedicated satellite resources, ancillary terrestrial components, and contractor specified networks and equipment, in any available COMSATCOM frequency band...rates include the network management, monitoring, engineering, integration, and operations required to deliver the services."

For FSS, the common industry term for this type of service is Managed Network Services. Managed services take the burden of network management

off the user and provide solutions that include space segment, teleport and ancillary services such as access to the internet and voice over internet protocol (VoIP) telephony. Networks are shared or dedicated and although these service offerings are referred to as pre-engineered, services are customizable to meet individual user requirements.

Shared networks consist of terminals belonging to multiple users all sharing the same resources. A subscription to a shared network can be a very cost-effective option that provides anonymity for users with minimal data rate requirements, such as those with small numbers of terminals supporting applications such as internet access and VoIP connectivity. Since the network is already established, there is a significantly shorter implementation timeline. Users in shared networks are guaranteed throughput at the contracted level using a variety of Quality of Service (QoS) options that are configured within the network. It is important to note that while the resources are shared, each user's data is kept secure and private from the rest of the network.

Managed services with dedicated networks allow DoD users to have private networks not shared with any other users. A dedicated network may cost more than a shared network and take longer to implement, but are better suited for users with larger networks, those that require higher data rates to support the mission, or those that require more specialized services from the teleport such as website content filtering.

Subscription services are a broad range of offerings used to meet a wide variety of COMSATCOM requirements. Please visit the GSA eLibrary at: <http://www.gsaelibrary.gsa.gov/ElibMain/sinDetails.do;jsessionid=5A0EE6A4CD7B1822%20F5834CCF5D441D3E.node1?execute-Query=YES&scheduleNumber=70&flag=&filter=&specialItemNumber=132+55> to view SIN 132-55 contractors and offerings and, as always, please contact the COMSATCOM Center with any questions.

QUICK TIPS — Funding Documents

A Military Interdepartmental Purchase Request (MIPR) is used to provide funding for DoD acquisitions. For COMSATCOM acquisitions, the contracting officer must receive this funding document before the Request for Quotes (RFQ)/Request for Proposals (RFP) are posted to potential bidders. Here are some common items to check prior to submitting your MIPR:

- **Description** – In block 9b, please provide the tracking number of your requirement, a brief description, the period of performance, and the cost and fees broken out. Your COMSATCOM Center acquisition team provides this information. Please indicate exact amounts; do not round to the nearest dollar.
- **Incremental or Subject to Availability Funds** – Please indicate this in block 14, complete the severability certification, and provide a funding plan stating when funds will be provided. In the case of incremental funding, the severability certification also serves as the funding plan. Please note that the Government Accountability Office (GAO) has determined that contracts for non-severable services cannot use incremental funding.
- **Funding Types** – The contracting office, DISA cannot accept direct cite funds. Only reimbursable funds are accepted for COMSATCOM services. Additionally, funding is current to the fiscal year at the time of award.

Additional MIPR guidance is available on the Defense Information Technology Contracting Office (DITCO) website at https://www.ditco.disa.mil/contracts/IT_instruct.asp and a MIPR template is available at https://www.ditco.disa.mil/contracts/instruct_docs/Encl9a_DD448.pdf.

CLARIFICATION

In the April 2013 COMSATCOM Scoop, we reported “The Global Satellite Support Center (GSSC) in Colorado Springs, CO and the Regional Satellite Support Center – CONUS (RSSC-CONUS) have been re-designated as RSSC-West and RSSC-East, respectively. At this time, the mission and personnel have not changed. Please continue using your servicing SATCOM Support Center (SSC) as you normally would.”

We would like to provide clarification. Only the watch floor portion of the GSSC was re-designated as RSSC-West. What the GSSC does for the United States Cyber Command (USCYBERCOM) mission to "direct activities to operate and defend DoD Information Networks" has not changed, but USCYBERCOM is not part of the tactical aspect of SATCOM. The Joint Functional Component Command for Space (JFCC-Space) delivers SATCOM using the US Army Strategic Command (USARSTRAT) SSCs to plan and allocate on the payloads.

The mission and personnel have not changed. Please continue using your servicing SSC as you normally would.

