Seven Ways to Make the DoD a Better Buyer of Commercial SATCOM

1. **Establish a baseline of how much COMSATCOM the DoD needs, and then budget and contract for it.**

   FACT: The U.S. military will never be able to meet warfighter demand for bandwidth using solely government-owned-and-operated satellites.

   Prudent planning dictates that the DoD should establish a baseline amount of satellite communications infrastructure that it needs to buy from commercial operators and then contract for that on a long-term basis. Some argue that this can't be done because DoD requirements change and are hard to forecast for the period of a long-term commercial contract. Yet this runs counter to the DoD practice of building large constellations of satellites such as WGS with very specific capabilities that are designed to last for 15 years and more. Another argument is that the decline in U.S. military activity in Iraq and Afghanistan will diminish commercial SATCOM needs in the near future. But in fact, demand is growing for commercial bandwidth to support UAV and other operations in areas outside of these war zones.

   UAV requirements will likely remain on commercial systems and would be a leading application to baseline long term and ensure capacity and savings. Because the DoD has much more flexibility with its own assets in times of surge, base-lining requirements on commercial infrastructure makes more sense than continuing to buy bandwidth on the spot market during times of crisis.

   Until and unless the DoD has a alternative funding strategy for commercial SATCOM the only mechanism that DoD has to procure commercial satellite infrastructure is through short-term, spot-market purchases – the most costly and inefficient method to fulfill critical DoD needs. The Navy is the only service with an enduring POM line for commercial SATCOM (under the CBSP Program), while the Army is looking at it for its SATCOM training needs.

   Using Indefinite Delivery/Indefinite Quantity (IDIQ) contracts to spend billions of dollars for service on commercial satellites, each of which supports multiple private sector as well as government users, exposes the Department to the risk that there will be insufficient capacity to satisfy its needs. In order to remediate this risk, it is essential that the Department supplement its IDIQ contracting framework with a longer-term buying strategy that will incentivize the commercial operators to make the investments necessary to ensure there is sufficient capacity to support the nation's long-term satellite communication needs.

2. **Develop accurate comparisons of the cost of commercial vs. the cost of military SATCOM.**

   FACT: DoD doesn't really know what it costs to procure MILSATCOM programs and routinely understates costs that are included in the price of commercial alternatives.

   Those who want the military to own its own satellite capacity frequently err in comparing what it costs the DoD to buy that next satellite (i.e., WGS-11) compared to a lease of an equivalent amount of commercial satellite capacity. A lease includes all the costs (requirements process, procurement process, bandwidth, launch, operations, people,

ground infrastructure, software, utilization inefficiencies, costs of capital, and insurance) required to provide service in a specific region. None of this is included in the simple cost of the next military satellite. Often, quoted military satellite costs do not even include the launch costs, which are $464M per launch using United Launch Alliance *(Source: Washington Post, 12/23/2012)*, far in excess of comparable commercial launch service costs. Quoted figures routinely omit the military ground infrastructure, which may account for 60-70% of the total military system cost.

In addition, the ownership cases fail to account for fill factor risk, often assuming a 100% fill factor, truly an unreasonable assumption. Most of the wideband MILSATCOM assets deployed today (WGS) are known to carry much lower fill factors, particularly in Ka-band where the Government terminal infrastructure has not been synchronized nor kept pace with the deployment of the spacecraft. The lower fill factor effectively raises the cost per Hertz of a satellite, which also is not reflected in the cost comparison with lease services. Other risks and their attendant costs, such as launch failure or satellite anomalies, are borne directly by the taxpayers.

Finally, since the DoD only leases commercial satellite using higher-cost, short-term IDIQ contracts, the costs of commercial infrastructure are overstated. If DoD procured commercial using a long-term, baseline approach, the costs would be substantially lower.

3. **Use IDIQ contracts only to supplement baseline requirements.**

   FACT: Bandwidth and support services purchased from commercial satellite operators under IDIQ contracts cost more than if purchased under a long-term contract.

   An IDIQ contract for commercial satellite services typically has a term of one-year with multiple one-year renewal options. The contract can only be filled if a commercial satellite operator has sufficient bandwidth and other resources available. IDIQs make sense for competing task order business as a way to rapidly align capacity to needs, but the DoD needs to be aware that requirements may not be met when it procures this way. The capabilities which industry brings to short-term IDIQ contracts are limited to those developed primarily for commercial users, such as broadcasters, and are not optimized to meet DoD requirements. In addition, studies have shown that buying capacity on the spot-market with IDIQ contracts costs the DoD up to 25% more than it would pay with a long-term contract for the same capacity. Once a baseline is established and met with long-term agreements with commercial suppliers, the surge demand could be filled using IDIQ task orders.

4. **Build an architecture that fully integrates commercial and military capabilities.**

   FACT: The DoD designs, builds and launches military satellites with capabilities that often overlap with or are incompatible with existing commercial networks.

   To fully take advantage of commercial opportunities, DoD requirements must flow from a space and ground architecture that fully integrates commercial and military capabilities. COMSATCOM must be considered as essential to providing some part of the DoD communication requirement. Given a defined role in the architecture, industry can then anticipate and invest in solutions that will meet the requirements of the warfighter. To fully integrate COMSATCOM, the architecture must assign real requirements to commercial infrastructure, either by mission set, by region or by baseline versus surge. A further breakdown between baseline and surge could then be layered on top of these general

guidelines to allow commercial to handle baseline and leverage agile MILSATCOM assets for surge. Commercial satellite operators need some guiding strategies or concept of operation in order to best meet the needs of our military.

5. **Partner with industry to build protected communications infrastructure for space systems.**

   FACT: Several important mission sets, such as UAVs, will require improved protection options on a global basis to be effective, and commercial assets can play a critical role.

   Commercial operators can provide protected military communications, either through dedicated hosted payloads or by investing in protection features while building new satellites. The Civil Reserve Air Fleet (CRAF) provides a model where DoD can cover the marginal investment required to add protection features to commercial satellites while not committing to the entire capability. This could be a highly cost-effective method for expanding the pool of protected communications capability, especially for supporting UAV operations in the future, without having to procure specialized government satellites. Fielding protected communications capabilities on commercial satellites will enhance resiliency and global capability for the DoD and allow certain mission sets to keep using commercial infrastructure.

6. **Use Hosted Payloads.**

   FACT: Hosted payloads offer the fastest and most cost-effective method of getting a specialized communications capability into orbit.

   Hosted payloads have been proven to provide enhanced capability (like CHIRP) and significant cost reductions (the Australian Defence Force has indicated its UHF payload on IS-22 saved $150M compared to a free flyer asset). Because hosted payloads are priced on a percent-of-cost basis, the DoD is leveraging the procurement efficiencies of the commercial industry and the bus & launch efficiencies of a full satellite. For a specialized military capability such as EHF protected communications, resiliency is enhanced with a distributed architecture of hosted payloads on multiple commercial satellites. Hosted payloads are designed with a standardized interface that can be easily and routinely attached to a satellite so as not to hold up delivery schedules. This is exactly what the Air Force Space & Missile Command (SMC) is trying to create with the Hosted Payload IDIQ contract (HoPS). Hosted payloads require integrating military and commercial hardware and software and clearly defining the mission sets. This effort needs funding and program support.

7. **Have a single office that handles all commercial and military satellite capabilities.**

   FACT: Two different offices of the DoD handle the administration of military and commercial satellite capacity.

   In addition to a coherent architecture that clearly defines the commercial mission set, the commercial industry needs a single office where commercial and military satellite capabilities come together. Currently DISA procures most commercial capacity to meet end-user requirements. SMC procures military assets to meet end-user requirements. Although DISA and SMC are cooperating more now than they ever have in the past, there is still no way to seamlessly allocate military requirements between commercial and military assets.

We believe having SMC as the single point for determining how best to meet the overall demand makes sense. SMC should be authorized to procure or plan across the space domain for both military and commercial solutions. DISA could still play a critical role as the contracting agency for the IDIQ portion of the communications needs. We understand that the Air Force Space Command supports this approach.

Respectfully submitted,

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