

# DEFENSE BUSINESS BOARD



## Taking Advantage of Opportunities for Commercial Satellite Communications Services

Task Group

January 24, 2013

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# Agenda

- Task Group Overview
- Process
- Background
- Findings
- Recommendations
- Next Steps

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# Task Group Overview

## Terms of Reference

- Identify impediments to DoD's ability to better utilize the commercial satellite sector
- Recommend ways forward that allow DoD to better leverage opportunities from the commercial satellite service providers
- Review the opportunities, internal obstacles to implementation, and any corrective actions required to enable DoD to rapidly evaluate and take advantage of potential commercial satellite communications services.

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# Process

## ■ Interviews

- 20+ interviews across DoD & Commercial Space Industry
  - DoD CIO, USAF Space and Missile Command (SMC), OSD AT&L, CAPE, EA Space, Joint Staff, Dir., Defense Information Systems Agency (DISA), Gen. James Cartwright (Retired)
  - Commercial partners representing a major cross-section of the Space Industry: Boeing, Hughes, Intelsat, SES, US Space, Universal Space, ViaSat, InmarSat, Orbital Science

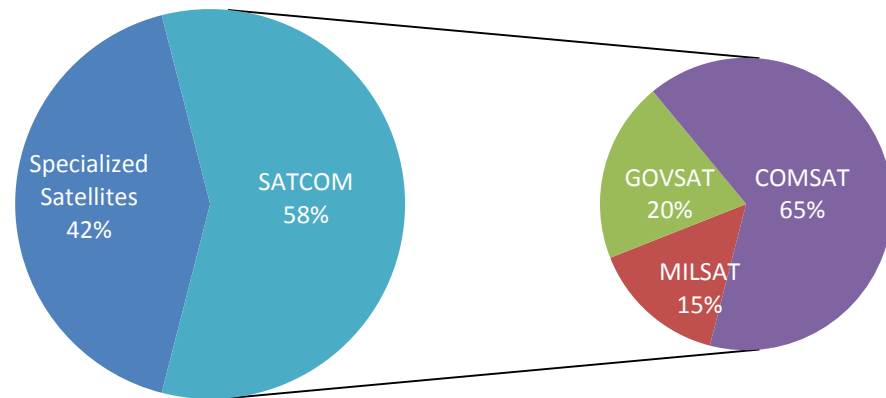
## ■ Bibliographical/Literature Review

- National Defense Strategy, January 2012
- National Space Policy, June 2010
- National Security Space Strategy, January 2011
- Industry provided products & documents
- DISA 2013-2018 Strategic Plan
- DISA AOA for Satellite Communications, October 2012
- JP 6-0: Joint Communications System, June 2010
- JP 3-14 Space Operations, January 2009
- DoD Information Enterprise Architecture, July 2012
- DoD CIO SATCOM Governance Framework, January 2013
- Capstone Concept for Joint Operations: Joint Force 2020, September 2012
- GAO reports
- White Papers

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# Background – Context and Common Terms

- SATCOM: All satellite communications (app. 58% of total global satellite market)
  - MILSAT: Military satellite communications
  - GOVSAT: Civil government satellite communications
  - COMSAT: Commercial satellite communications
- Specialized satellites: app. 42% of total global satellite market (e.g., meteorology, navigation, remote sensing, etc.)
- Acronyms:
  - AEHF: Advanced Extremely High Frequency Satellite
  - EPS: Enhanced Polar System Satellite
  - MUOS: Mobile User Objective System Satellite
  - WGS: Wideband Global SATCOM System



# Background

## Basic Facts

- DoD controls MILSAT: USAF SMC procures MILSAT assets and selected frequencies to meet end-user requirements
- COMSAT assets and services are owned by commercial sector, independent of DoD
- DISA procures COMSAT services as needed to augment MILSAT, based on end-user requirements
- MILSAT and COMSAT services are not interchangeable in all instances due to unique DoD needs
  - Further complicating the issue, SATCOM services are complex with various owners and multiple bands (including K<sub>u</sub>-band, X-band, K<sub>a</sub>-band, and others)

# Background

## DoD Market

- Total FY10 DoD SATCOM costs (excluding GOVSAT): \$1.6B\*
  - MILSAT 60% (\$960M/year) \*
  - COMSAT 40% (\$640M/year) \*
- DoD COMSAT requirements met by
  - Leases 75% \*
  - “Spot market” purchases 25% \*
- DoD/DISA leases COMSAT predominately through one-year leases
- The cost of COMSAT services purchased by DoD/DISA could grow to \$3B - \$5B in the next 15 years

\* Source: DISA

# Background COMSAT Market

- COMSAT experiencing explosive private sector growth and new technological capabilities
- COMSAT capabilities (frequency) similar to MILSAT
- Commercial business decisions based on Return on Investment
- Commercial SATCOM industry is multinational and some may not partner with DoD in all geographies
- COMSAT “fill rates” in many geographies are currently at 80% without DoD contracts
- DoD is not driving the growth of the industry
  - Satellite TV, HD TV, etc.

*“Unsure if DoD is really interested in doing business with us”*  
--U.S. Private Sector COMSAT Senior Executive



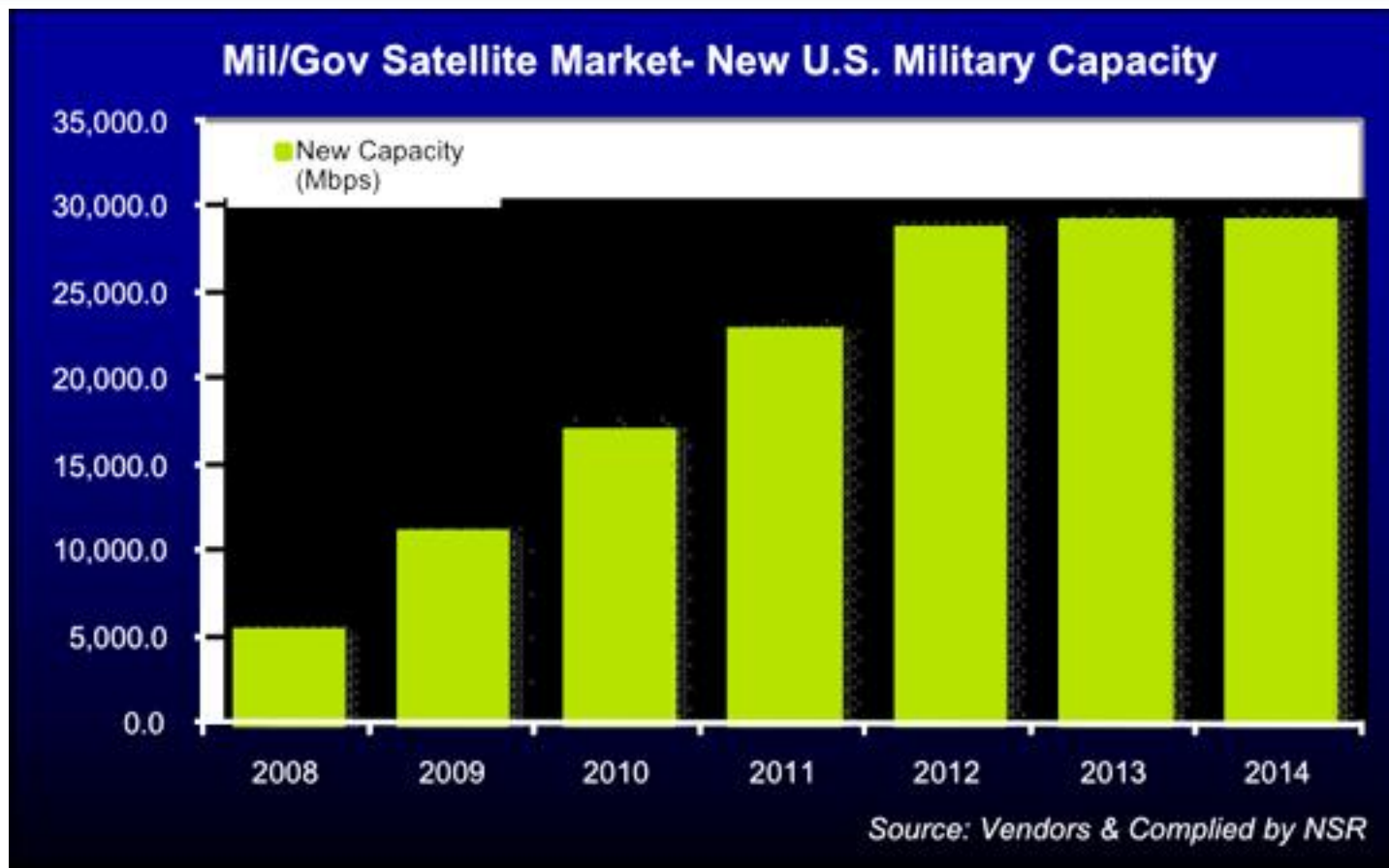


# Findings Overview

- COMSAT needed to satisfy future DoD requirements
- SATCOM is a mission critical resource for all of DoD
- “Nontraditional” opportunities for rapid COMSAT acquisition exist but obstacles exist to implementation
- DoD strategy and management structure for interfacing with rapidly evolving COMSAT ecosystem is not optimized



# Military Satellite Capacity



MILSAT will soon reach 30 Gbps capacity – Is that enough?

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# Finding 1

## COMSAT Needed To Satisfy Future DoD Requirements

- Implementation of National Defense Strategy and Capstone Concept for Joint Operations will require additional SATCOM capacity
  - Future strategy includes expanded presence into varied geographies
  - Withdrawals from existing geography requires increasing reliance on surveillance
  - New platforms and sensors (e.g. UAVs, ISR) require increasing satellite communications
- COMSAT provides 40% of DoD SATCOM – expected to increase over next decade by 68% (Source: NSR, 2011)
  - Rebalance toward Asia Pacific
  - Greater Navy support to patrol the sea lanes
  - Monitoring world events
  - Increased activity in the war on drugs

# Finding 1

## COMSAT Needed To Satisfy Future DoD Requirements

- DoD needs to partner with COMSAT to meet growing requirements and available capability
  - MILSAT capacity unlikely to expand due to reduced DoD budgets
    - MUOS, WGS, AEHF, and EPS expected to be the total extent of U.S. MILSAT communications for the foreseeable future
    - WGS sold satellites (#6 and #9) to foreign investors – losing the use of bandwidth to non-US countries
  - COMSAT is faster/cheaper to launch than MILSAT
  - COMSAT technology is advancing, in some cases faster than MILSAT
- Problem: Existing contracting procedures for COMSAT make partnership between DoD and Industry difficult
  - DoD COMSAT procurements on an annual basis
  - Difficulty accepting unsolicited proposals and new ideas from COMSAT service providers, limiting relationships with DoD

# Finding 2

## SATCOM is a Mission Critical Resource

- SATCOM is used to support the Warfighter with greater capacity needed in the future
  - New missions in current AORs
  - New geographies
  - Evolving technologies with new communications requirements
  - Total Force 2020 command and control
- Warfighter requirements
  - Interoperability - seamless connectivity
  - Global coverage - operate anywhere in the world
  - Assured, real-time access - available on-demand
  - Capacity - meet current and emerging requirements
  - Protection - from all forms of information warfare
  - Flexibility - match the dynamic operational environment
- Growing constraints on COMSAT availability for DoD
  - Global economic growth has placed greater demand on COMSAT capacity
  - Consumer markets in new geographies are growing – (e.g., Asia Pacific, Middle East/Africa)

# Finding 3

## “Nontraditional” Opportunities For Rapid COMSAT Acquisition But Obstacles Exist

- Industry is generally ready and willing to partner with DoD and USG in traditional and innovative business arrangements
  - As long as relationship is as profitable as growing commercial contracts
  - Obstacles exist particularly in contractual and statutory concerns
- Largest obstacles to using commercial opportunities (based on Commercial providers)
  - DoD Institutional Barrier: The decision cycle associated with any of these (commercial) proposals is light years ahead of the DoD decision cycle which is generally 2-3 years.
  - DoD does not have the capability to corporately ingest these proposals: The main roadblock is in terms of policy, culture, and process. It is difficult to assume all are untenable.
- Currently DISA/GSA has three types of contracts (indefinite delivery, indefinite quantity (IDIQ))
  - “Bent Pipe” service
  - Buy bandwidth directly
  - Provided end-to-end support services
- Procured through GSA Schedules – IDIQ contracts
  - Future COMSATCOM Services Acquisition (FCSA)
  - Custom SATCOM Solutions (CS2)
  - Previously DISN Satellite Transmission Services-Global (DSTS-G)

# Finding 3

## “Nontraditional” Opportunities For Rapid COMSAT Acquisition But Obstacles Exist

	Identified traditional and non-traditional <u>approaches</u> for COMSAT acquisition	Identified traditional and non-traditional <u>obstacles</u> for COMSAT acquisition
<b>Buy to Lease</b>	Make offer to a commercial operator for system use and obtain quid pro quo global service access for discount/zero charge	Funds derived from DoD asset must go to the national treasury vs. global service access deal
<b>Capital Lease</b>	Long term lease for satellite life (>10yrs)	Programmers resist O&M dollars for investment (termination liability, competitive annual priorities); Procurement dollars ineligible for these deals; Existing regulation is for 5 year max lease option
<b>Anchor Tenancy</b>	NASA/NOAA ability to enter into multiyear contracts to serve as the anchor tenant for commercial space ventures.	Termination liability concerns; Statute limited to NASA/NOAA3 – AT&L offering changes; Cannot be used for COMSAT unless approved by Congress;
<b>Indefeasible Right of Use (IRU)</b>	Pays for up-front costs; signs agreements with others to get services and pays a large up-front fee, followed by annual charges for maintenance and upkeep	Failed providers pulling out early; poor pricing methods
<b>Multi-year/Long term lease</b>	Opportunity to reduce cost with longer leases	Congress uncomfortable committing dollars beyond first year Multi-year contracts are limited to 5 years; Termination liability concern
<b>Hosted Payloads</b>	DoD furnished payload; special needs; short timeframe	Timely ITU frequency coordination to bring service into use; current NTIA spectrum certification policy requires project funding prior to filing; adds significant delay to timeline; US launch vehicle requirement per Space Trans. Policy
<b>Pathfinder</b>	Finding optimal approach to leverage COMSAT technologies; long term solution	Long term solution with little time to solve near term budget issues and potential demand

Sources: “Taking Advantage of Opportunities for Commercial Satellite Communications Services”, Oct 2012  
 “Commercial Satellite Communications Services Analysis of Alternatives (AOA) Final Report”, Oct 2012  
 “Space Disruptive Challenges, New Opportunities and New Strategies”, Strategic Studies Quarterly, Spring 2012

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# Finding 4

## DoD Strategy And Management Structure Currently Not Optimized

- No senior official claimed sole responsibility for SATCOM
  - Multiple DoD officials asserted ownership for key components of SATCOM (i.e., strategy, operational, tactical, and acquisition support, etc.)
  - From an outside view, appears current roles and responsibilities are ambiguous
- Defense Space Council (DSC) currently serves as advisory forum (Deputy Sec Def Memorandum, 22 November 2011):
  - Aligns requirements, planning, programming, budgeting, and execution
  - Synchronizes Defense Space activities
- As COMSAT capabilities evolve, DoD will need to be more proactive and innovative
  - Joint Force 2020 Capstone Concept of highly-networked force depends on redundancy and diversity of communications links
  - Mobile computing trends require significant increases in both USG and DoD capacity
  - New MILSAT assets not anticipated until 2025



# Finding 4

## DoD Strategy And Management Structure Currently Not Optimized

- Commercial and government SATCOM acquisition timeframes are not equal
  - Commercial industry typically plans future capability 3-4 years in advance to facilitate financing, development, launch, and deployment.
  - Commercial sector generally operates on more efficient and cost effective timelines (24-48 months)
  - MILSAT operates on a >10+ year timeline from concept to delivery
- Emerging geographies require DoD to use more COMSAT, yet no plan to do so
  - Middle East - Africa, Indian Ocean Region, Pacific Ocean Region, Asia Pacific, Latin America
- Need to differentiate the type of communications capacity requirements: aerial or terrestrial
- However, as of January 2013, the DoD CIO defined a SATCOM governance framework, including a "C4 Capability Integration Board" (C4CIB) to address mid-level executive matters related to SATCOM

# Recommendations

## Near-Term

1. Take advantage of more capital lease opportunities (Action: CIO/DISA)
  - Take advantage of DISA Assured Satellite Service in a Single Theater (ASSIST Experience) and lengthen COMSAT capital leases
  - Although multi-year authority is available through GSA, DoD is reluctant to use due to upfront costs
  - Commercial Capital Lease of multiple increments for up to 10 years to match COCOM needs, DoD saves up to \$100M per year
2. Continue Hosted Payload efforts (Action: Space Command and Defense Space Council)
  - Ability to fill special needs in short time frame
  - Use ID/IQ contract instrument
  - Make all necessary International Telecommunication Union (ITU) filings to take advantage of opportunities in advance
  - Consider a mix of COMSAT and Hosted Payload opportunities to maximize the resilience and effectiveness of space assets
3. To provide additional flexibility – consider alternative new contractual opportunities and arrangements (Action: DSC/USD (AT&L))
  - “Indefeasible Right of Use” (IRU) temporary ownership
  - FY 14 “Anchor Tenancy” language: 10 year firm-fixed contracts (draft legislation already exists)

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# Recommendations

## Near-Term

4. 2014 QDR to elevate importance of SATCOM by specifically addressing the balance of COMSAT/MILSAT (Action: USD (Policy))
  - Work with the Executive Agent for Space, STRATCOM, and DoD CIO to enhance capacity opportunities for both MILSAT and COMSAT
  - Evaluate technical and cost savings potential for shifting balance of DoD SATCOM toward COMSAT, providing specific military requirements can be met
5. Increase DoD outreach to COMSAT platform and service providers commensurate with increased importance of COMSAT in a MILSAT/COMSAT rebalancing (Action: USD (AT&L))
  - Related to increased demand for bandwidth in new geographies
  - MILSAT timeframe is too long to meet requirements
6. Continue in parallel a Pathfinder approach for better economical solutions (Action: USD (AT&L))

# Recommendations

## Long-Term

1. Support the DoD CIO in establishing a governance and usage plan for MILSAT and COMSAT ecosystem including aerial and terrestrial elements (Action: CIO/STRATCOM/DSC)
2. Address which organization(s) has operational and tactical execution authority (Action: STRATCOM/Joint Staff/COCOM)
  - DoD already working in the direction of CIO governance plan
  - Collaborate through DSC on priorities and synchronization with all opportunities
3. Facilitate future governance by designating a single DoD point for procuring all SATCOM assets and services (Action: SecDef/CJCS)
  - Model after the authority DLA has (possibly DISA) as a one-stop shop for logistics support of commodities
  - Recognize the fungibility of communications commodities across the Services and across geographies
  - Coordinate military and commercial resources for best value opportunities (e.g. considering COMSAT's cost advantage vs. MILSAT)
    - Major strategic sourcing opportunity – in support of all military Services
    - Include aerial and terrestrial communications to get full benefit

# Next Steps

- Briefings to USD (AT&L), DASD, SPACE, VCJCS, Service Secretaries, CIO, STRATCOM
- Convene follow-on DBB task group to explore business models for implementation of centralized DoD SATCOM governance and acquisition

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## Questions?

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*Business Excellence In Defense of the Nation*

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