Navy Space Strategy

Chief of Naval Operations
Washington DC
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This Navy Space Strategy and Navy Space Action Plan has been developed under the leadership of the Deputy Chief of Naval Operations, Communication Networks (CNO N6), the Director of Naval Intelligence (CNO N2), and the Director, Naval Network Warfare Command in coordination with members of the Navy Space Team composed of organizations that span the full spectrum of Navy warfighting and have key roles in advancing the Navy's exploitation of space capabilities. The Navy Space Strategy seeks to further leverage and influence the large Department of Defense and national investments made in space by participating more effectively in the National Security Space enterprise and by better integrating space systems into Navy combat systems. The Strategy addresses the mission, vision, and major space-related goals of the Navy Space Team. The Navy Space Action Plan describes those goals in greater detail and provides supporting objectives for each goal to be accomplished during the year. Implementing this strategy will enable a unity of effort across the Navy Space Team to ensure space systems and capabilities, current and future, are maximized to meet Fleet needs worldwide.

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Navy Space Strategy

EXECUTIVE OVERVIEW

The Navy relies heavily on space systems to conduct its many wartime and humanitarian missions as outlined in the Cooperative Strategy for 21st Century Seapower and the Naval Operational Concept. A combination of national, joint and commercial space systems serves as critical elements within the Navy kill chain and enable the Navy to operate freely from sea bases around the world. Current space systems provide Navy commanders with critical communication capabilities, positioning/navigation/timing support, missile warning, meteorological data, and over-the-horizon intelligence, surveillance and reconnaissance. Future U.S. satellite programs under development must provide additional benefit and capabilities to Navy warfighters.

Many of these future space systems, however, are facing technological and budgetary hurdles which could force capability trade-offs in the maritime environment and ultimately impact their utility to the Navy. For these reasons, the Navy must vigorously engage with key national and joint space-related entities at the appropriate levels to ensure current and future Navy needs in space are identified, understood, resourced and protected. This will require closer cooperation between Navy leadership and various space-related entities within the Department of Defense (DOD), the National Intelligence Community (IC), the National Oceanographic and Atmospheric Administration (NOAA), National Aeronautics and Space Administration (NASA), as well as those commercial partners who develop and operate satellite systems.

As directed in SECNAVINST 5400.39C "Department of the Navy Space Policy," and as delineated in OPNAVINST 5400.43A "Navy Space Policy Implementation," this document constitutes the Navy component of the Department of the Navy's overall Space Strategy. In broad terms, this strategy seeks to further leverage and influence the large DOD and national investments made in space by participating more effectively in the National Security Space (NSS) enterprise and better integrating space systems into Navy combat systems. More specifically, this strategy addresses five goals: (1) mitigating the impact of the risk adversaries pose to those critical space systems that the Navy depends upon; (2) identifying, documenting, and advocating Navy's specific requirements for future space systems in order to ensure Navy's needs are met and to directly influence space

systems development; (3) posturing the Navy Space Cadre program to further leverage current as well as influence future space systems for Navy use; (4) prioritizing and funding essential science, technology, research and development (S&T/R&D) efforts to meet Navy's needs in space; and, (5) expanding Navy leadership engagement with senior DOD, Joint and IC space leaders to better advocate and positively influence Navy issues in space.

A Navy Space Council has been established to oversee progress in support of the five long-range goals listed above, and in achieving the supporting objectives and actions outlined in the accompanying Navy Space Action Plan.

BACKGROUND

History. Space systems are essential for maritime operations. The Navy has a long and proud history in space, having developed a number of technological breakthroughs over the past several decades. The list of Navy advances in space is expansive and includes: the first space communications capability used for operations; the first controllable space launch vehicle; the first satellite tracking system; the first successful electronic intelligence reconnaissance satellite; the first space object tracking system; the first demonstration of on-orbit atomic clocks; the first military broadcast satellite; and the first astronauts to orbit the earth, orbit the moon and crew the Space Shuttle.

Current Environment. Over the past decades, consolidation of space-related missions and functions within DOD has moved most space-related responsibilities from Navy to Air Force control in the "white space" world (communication, Positioning/ Navigation/Timing (PNT), and missile warning) and to the National Reconnaissance Office (NRO) control in the "black space" world (classified intelligence gathering and reconnaissance). While the Navy continues to serve as the Program Manager for DOD narrowband Ultra High Frequency (UHF) satellite communications systems (the new Mobile User Objective System (MUOS) and the UHF Follow-On system), and continues to conduct some other smaller space-based experiments, most if not all large-scale DOD and national satellite programs will likely be developed outside Navy channels for the foreseeable future. Because of this trend, fewer naval personnel now have an understanding of Navy's role in space or the capabilities that space assets bring to the warfighter, and Navy-wide expertise and experience with space systems are beginning to wane.

NATIONAL SECURITY SPACE: A LONG-TERM INVESTMENT

The process for designing, building, launching and operating modern satellite systems has increasingly become both a lengthy and an expensive undertaking, lasting 20-30 years or more. This means any new space program that is currently in the concept phase could potentially remain in service well beyond the 2030-2040 timeframe. Unlike other major DOD programs, however, satellites cannot be easily modified or repaired once they are placed on orbit. Due to the long lead times involved, it is therefore critical that naval space requirements and maritime missions be factored into the pre-launch design and planned on-orbit operation of all future satellite system being considered for acquisition through the DOD Executive Agent for Space, the NRO and the NOAA. Without active Navy involvement in ongoing deliberations about future satellite programs, the Navy risks operating in future scenarios with multi-billion dollar NSS systems sub-optimized for the maritime environment.

SPACE MISSION AREAS

According to Joint Publication 3-14, "Joint Doctrine for Space Operations," U.S. satellites and space support systems are generally grouped under four distinct Space Mission Areas: Space Control, Space Force Enhancement, Space Support, and Space Force Application. The Navy is actively involved in a number of space missions, especially those that fall under the Space Force Enhancement and Control Mission Areas. The six key space-related missions of greatest interest to the Navy are outlined below (lead agencies are depicted below, with subordinate organizations responsible for each mission shown in parenthesis):

- Space Force Enhancement Mission Area:
  Intelligence/Surveillance/Reconnaissance DOD (USAF, NRO), IC Communications DOD (USAF, USN, USA), Industry Positioning/Navigation/Timing DOD (USAF, USN) Ballistic Missile Warning DOD (USAF, MDA) Meteorology/Oceanography NOAA, NASA, DOD (USAF, USN)

- Space Control Mission Area:
  Protection DOD (USAF)

THE NAVY SPACE TEAM

Primary goals addressed in the Department of Navy Space Policy include shaping the outcome of joint deliberations on future space capabilities, maximizing combat effectiveness, and ensuring supremacy of the naval force. Within the Navy, various space-related functions and responsibilities are distributed among several different commands, but jointly constitute a functional "Navy Space Team" which works collaboratively to advance Navy's many goals in space. This team has been identified to provide the Navy with the requisite level of expertise essential to being a full partner and a leader in the joint, inter-agency and international space communities. It ensures maximum leverage of existing, planned and programmed space capabilities in support of Navy operations, and works at a number of levels to coordinate support of all naval operations and future maritime needs and requirements

Per OPNAVINST 5400.43A, this Navy Space Team is composed of several organizations that span the full spectrum of Navy warfighting, and have key roles to play in advancing the Navy's exploitation of space capabilities. The Office of the Chief of Naval Operations (OPNAV) and Fleet organizations include:

a. Deputy Chief of Naval Operations for Communication Networks (CNO N6): The primary OPNAV entrée for outside organizations and agencies on space related issues is CNO N6, who as lead for non-ISR space, is responsible for coordinating efforts of the overall Navy Space Team, developing Navy non-ISR space requirements, making space resource recommendations, funding designated DOD space acquisition programs, and coordinating with the NSS Office;

b. Deputy Chief of Naval Operations for Manpower, Personnel, Training and Education (CNO N1): Responsible for managing and developing the Navy Space Cadre;

c. Director of Naval Intelligence (CNO N2): As lead for ISR space, CNO N2 is responsible for developing ISR space requirements, incorporating space capabilities into the larger Navy-wide ISR strategy, advocating Navy's space-related requirements within IC, including the NRO, and joint ISR programs, and representing the OPNAV staff within key IC and joint space-related forums;

d. Deputy Chief of Naval Operations for Integration of Capabilities and Resources (CNO N8): Responsible for making resource decisions on relevant Navy space assets, and incorporating space capabilities into Navy campaign/mission modeling and simulation efforts;

e. Oceanographer of the Navy (OPNAV N84): Responsible for coordinating space-related portions of the Navy's Oceanography programs with appropriate commands, agencies and commands outside the Navy, in conjunction with CNO N2 if ISR related;

f. Commander, U.S. Fleet Forces Command (COMUSFLTFORCOM): Designated as operational requirements lead for Navy (responsible for collecting, reviewing and evaluating fleet requirements and emerging needs for space), approving Navy Space Campaign Plans and the Fleet Space Handbook, and implementing the Navy's space goals within the Fleet. Additionally, serves as advocate for the Fleet's space needs and requirements to Commander, U.S. Strategic Command (USSTRATCOM).

g. Commander, Naval Network Warfare Command (COMNAVNETWARCOM): Designated as the Navy's Space Type Commander and Navy Space Cadre Functional Authority. As the space operations lead, supports COMUSFLTFORCOM in identifying those Navy needs that can be satisfied by space assets, or changes to space policy and doctrine. Additionally, supports COMUSFLTFORCOM in advocating space needs to USSTRATCOM.

h. Navy Tactical Exploitation of National Capabilities (TENCAP) Office: Responsible for conducting rapid prototyping involving national reconnaissance satellites and related systems in support of Navy operations.

Space-related S&T, R&D and acquisition activities within the Navy come under the purview of the Secretary of the Navy who establishes DON Space Policy and interacts directly with the DOD Executive Agent for Space on matters of policy, acquisition, and overall responsiveness of NSS programs. The following S&T and acquisition Navy organizations are integral to the Navy Space Team:

a. Deputy Assistant Secretary of the Navy (DASN) for C4I/Space: Represents DON at senior DOD and NSS leadership levels and coordinates space policy and acquisition issues for ASN (RD&A) and Deputy Under Secretary of the Navy;

b. The Office of Naval Research (ONR): Designated as the Navy Space Scientific and Technical (S&T) Executive;

c. Naval Research Laboratory's (NRL) Naval Center for Space Technology: Dedicated to exploiting technologies and developing space-related capabilities in support of DOD, Navy and other agencies;

d. Program Executive Office Space Systems (PEO Space): Responsible for establishing acquisition strategies and plans for Navy space systems, and leading the development, testing, integration and operational support of Navy space systems and capabilities. Also responsible for working with PEO Command, Control, Communications, Computers and Intelligence (PEO C4I) and Space for acquiring Navy space-related terminals;

e. Space and Naval Warfare Command (SPAWAR): Provides program management for the acquisition of Navy space capabilities and executing plans and budgets as defined by PEO Space and OPNAV;

f. Space and Naval Warfare Systems Command Space Field Activity (SSFA): Serves as the Navy's core acquisition and engineering work force, supports the management of the Navy Space Cadre, and provides staffing and support to NRO, the NSS organization, and DOD Program Offices;

g. The Navy-NRO Coordination Group (NNCG): Chartered by SECNAV and Director, NRO to be the primary focal point for coordination of policies, plans, and programs, to plan joint technology developments, and to advise NRO regarding naval missions and tactical information needs;

Other Navy organizations and related offices play key roles in supporting the Navy Space Team and include:

h. U.S. Naval Observatory (USNO): Leading authority in the areas of precise time and astrometry that distributes earth orientation parameters and other astronomical data required for accurate navigation, positional astrometry and fundamental astrophysics.

i. Navy Space Cadre Office: Responsible for advising the Navy Space Team on Space Cadre matters, acting in a "virtual community management" capacity.

Additionally, the Navy occupies a key Flag-level joint billet within the NRO. This senior officer, who also serves as PEO Space Systems and Commander SSFA, oversees the largest concentration of Naval Space Cadre members, advises OPNAV and COMNAVNETWARCOM on NSS capabilities and acquisition issues, and provides space systems engineering expertise to Navy systems commands and research centers.

MISSION OF THE NAVY SPACE TEAM (Current Year)

The Navy Space Team outlined above currently provides the Navy with a level of expertise that exploits national, joint and commercial space systems in support of Navy operations, and works at a number of levels to help ensure future satellite programs address key maritime requirements. The current mission statement of the Navy Space Team is as follows:

"Exploit current space systems, tailor delivery of satellite-derived data services and products to Navy units, and advocate future Navy needs in space."

VISION OF THE NAVY SPACE TEAM (3-5 Year Outlook)

The Navy must assume a more influential role within the NSS enterprise to ensure that current, planned, programmed, and all future satellite systems are fully optimized to support operations in the maritime and littoral environment and will remain available for naval use during times of crisis and war. Additionally, the Navy Space Team intends to increase Navy oversight, advocacy and influence, and when suitable, lead the development of future satellite programs and enhancements, and function as a full DOD partner and leader within key NSS activities as outlined in DOD Directives 5101.2 and 4650.05. The vision statement for the future Navy Space Team is as follows:

"Ensure the value and viability of space systems and capabilities, current and future, are maximized to meet Fleet needs worldwide."

STRATEGIC GOALS OF THE NAVY SPACE STRATEGY (1-5 Year Outlook)

This strategy identifies five major space-related goals that support the vision outlined above. These goals are outlined briefly in the following sections, and are described in greater

detail with supporting objectives in the attached Navy Space Action Plan:

Goal #1: Mitigate impact of threats & vulnerabilities posed to critical space assets.

Goal #2: Identify, prioritize, document and advocate Navy's requirements in space.

Goal #3: Posture the Navy Space Cadre to advocate for Navy and influence National/DOD space decisions.

Goal #4: Prioritize and fund key Navy space-related S&T/R&D efforts.

Goal #5: Engage with senior DOD/Joint space leadership on Navy issues in space.

GOAL #1: MITIGATE IMPACT OF THREATS TO CRITICAL SPACE ASSETS

Because of the nature of its maritime mission, the Navy relies on a wide array of satellite systems to meet its missions. The most important commodity that satellites offer the warfighter is unique and timely information combined with global access, perspective and persistence. Any disruption to space operations, whether caused by natural or man-made effects, could severely affect day-to-day operations and have long-term impacts on the Navy. During peacetime operations and low-intensity conflicts, restricted access to satellite-based information can be caused by user demand and orbital constraints. In more hostile scenarios, however, access to satellite data could be more severely restricted or even eliminated due to hostile action by an adversary. The successful and highly-publicized demonstration of a Chinese Anti-Satellite (ASAT) capability in January 2007 demonstrated the viability of a foreign offensive space control capability, and underscores the growing threats to U.S. satellites by offensive action. Other events in recent years have clearly demonstrated the vulnerability of many satellite systems to jamming, interference and exploitation

DOD is undertaking a number of space control activities to help ensure we are able to maintain freedom of action in space, however, the risk posed to many of our space systems will likely remain for decades to come. The Navy must therefore fully understand the growing risks posed to our space systems, and

must undertake active measures now to mitigate these risks. At a minimum, the Navy must consider, test and exercise the use of additional back-up procedures to compensate for the potential degradation or near-total loss of our critical space systems. Additionally, the Navy must invest in key technologies, components and subsystems that enable Navy/Naval platforms to continue critical functions in the face of threats to, and denial of, space systems.

[Specific near-term actions to be taken in support of Goal #1 are contained in the accompanying Navy Space Action Plan.]

GOAL #2: IDENTIFY, PRIORITIZE & ADVOCATE NAVY'S SPACE REQUIREMENTS

As stated, national and joint satellites are primarily developed and acquired outside the Navy and serve a large number of competing national, DOD and other non-DOD government users. To ensure that Navy units are fully able to leverage current and planned capabilities in space, and to ensure that future space systems will adequately meet Navy requirements, the Navy must optimize its space requirements process, starting with identification of Fleet needs and analysis of capability gaps. Navy will appropriately document and communicate its requirements through Joint and NSS processes for integration into national and DOD space plans, program requirements and space acquisition plans. In conjunction with the OPNAV-led Space Council, comprised of CNO N2, Deputy Chief of Naval Operations for Information, Plans and Strategy (CNO N3/N5), CNO N6, CNO N8, PEO Space Systems, DASN C4I, USNO, ONR, NRL, and other Navy space entities, COMNAVNETWARCOM will establish a Navy space needs working group under the Naval Networks and FORCENet Enterprise (NNFE) and Naval Capability Development Process (NCDP) umbrella to collect and articulate Fleet space-related needs. Ultimately, the output of this group will be incorporated into the Navy Tool for Interoperability Risk Assessment (NTIRA) database for use in influencing joint, national and service investment decision forums.

Once documented and approved by Navy leadership, Navy will provide its space requirements to senior-level U.S. Air Force and national IC space authorities on a regular basis, as outlined in DOD Directive 5101.2, "DOD Executive Agent for Space." COMUSFLTFORCOM and COMNAVNETWARCOM must also advocate Navy equities with USSTRATCOM to ensure Navy needs are considered as the Combatant Commands prioritize their operational needs. The Navy also intends to increase

participation in those Joint Capabilities, Integration and Development System processes involving space systems, as well as various IC and NSS requirements, planning and policy processes, in order to better articulate and defend Navy's maritime requirements within the space arena. This will require communicating unique Fleet needs through requisite Navy Space Cadre experts to clearly establish and define maritime-related space requirements within the NSS enterprise.

[Specific near-term actions to be taken in support of Goal #2 are contained in the accompanying Navy Space Action Plan.]

GOAL #3: POSTURE A SPACE CADRE TO INFLUENCE FUTURE SYSTEMS

DOD Directive 5101.2 directs each service to maintain a sufficient cadre of space-qualified personnel. DON created the "Space Cadre," a group of space experts from multiple warfare designators designated by an Additional Qualification Designator (AQD) and Subspecialty Code (SSC). Active duty and reserve members are managed by Naval Personnel Command and detailed to billets coded for space expertise. Civil Service personnel with multiple job series have been designated by their supervisors as members of the Space Cadre. A designation for civilian personnel or civilian billets has not been developed.

The Navy Space Cadre Advisor (OPNAV N131SC)is responsible to the CNO N1 for execution of the program with additional duty responsibilities to CNO N6 and COMNAVNETWARCOM. CNO N6 provides resources for the Space Cadre and COMNAVNETWARCOM is assigned as the Space Type Commander and Space Cadre Functional Authority.

Space Cadre billets and personnel are assigned to joint and Navy headquarters' staffs, National Space Systems and Navy acquisition and systems commands, and Fleet operational staffs in support of Navy's space priorities.

[Specific near-term actions to be taken in support of Goal #3 are contained in the accompanying Navy Space Action Plan.]

GOAL #4: PRIORITIZE & FUND KEY NAVY SPACE S&T/R&D EFFORTS

Over 95 percent of NSS funding and programs resides outside Navy channels. Of Navy's current contribution to the NSS programs, nearly 50 percent is dedicated to the development, acquisition and management of DOD's MUOS and UFO communication

satellite systems (referenced above), over 40 percent is for acquisition of various satellite receiver terminals and equipment to enable Navy units to receive space-derived data, and about 10 percent is dedicated to managing, monitoring and improving space-based systems.

Navy R&D investments in space are relatively modest (approximately 1 percent of Navy's total space-related funding) and include space-related scientific and technical research managed by the Office of Naval Research, and also that conducted by the Naval Research Laboratory, the Navy Tactical Exploitation of National Capabilities (TENCAP) Office, and SPAWAR. Unique maritime needs along with an emphasis on tactical and operational utility have driven Navy-funded S&T/R&D efforts in the past, and a number of Navy technological breakthroughs in space have since become the foundation of many current DOD space capabilities today. Continued Navy S&T/R&D investment will be necessary in order to develop new maritime-related technologies and capabilities to overcome current gaps and meet future Navy and Joint requirements.

Future Navy investments in space must continue to focus on maximizing the utility of systems and capabilities that most benefit the Navy. To ensure that the Navy maintains full access to current satellite systems and to ensure that future satellite designs and sensors fully incorporate unique maritime interests and issues, the Navy must selectively fund investment in key technologies and equipment that will enable the Navy to fully exploit on-orbit satellite capabilities as well as to minimize risks in future developments. To achieve future breakthrough developments that enable substantial new maritime capabilities in space will require stable and robust S&T/R&D investments.

To maximize our return on investments, the Navy must also ensure that future space-related S&T and R&D efforts are dedicated to meeting the Navy's highest priority requirements, and are conducted with minimal overlap between Navy's various space-related research activities and other DOD research centers.

[Specific near-term actions to be taken in support of Goal #4 are contained in the accompanying Navy Space Strategy Action Plan.]

GOAL #5: INFLUENCE DOD/JOINT LEADERS ON NAVY SPACE ISSUES

The consolidation of DOD space programs under the U.S. Air Force, the NRO and NOAA over the past several years has reduced Navy's active involvement in several areas of space. This in turn has greatly reduced the total number of "space experts" within the Navy. Navy must increase its awareness and focus across the space mission areas to enable full participation in external Joint/National discussions about future satellite plans and schedules, sensor developments, priorities, impacts, capability tradeoffs, etc. This will enable Navy to more effectively advocate for its space requirements.

This will include development of a communications plan for both internal and external audiences, and an engagement strategy for Navy leadership to seek communication with their service, agency and IC counterparts. The Navy Space Team will be a full DOD partner within the NSS enterprise and will engage the full NSS community on Navy issues in space, to include senior DOD/Joint and Inter-agency space leadership.

[Specific near-term actions to be taken in support of Goal #5 are contained in the accompanying Navy Space Action Plan.]

FLAG/SES NAVY SPACE COUNCIL

The Flag/SES Navy Space Council addresses Navy space issues corporately. Composed of senior members from CNO N2, CNO N3/N5, CNO N6, CNO N8, PEO Space Systems, COMNAVNETWARCOM, DASN C4I, USNO, ONR, NRL, and other Navy space entities, the Space Council is responsible for recommending Navy space priorities, requirements, and funding decisions to the Navy Resources Requirements Review Board (R3B) for OPNAV decision. The Space Council is also responsible for oversight and meeting the objectives and timelines contained in the attached Navy Space Action Plan. The Navy Space Council shall meet twice a year or as required.

The Navy Space Council is supported by the Director, Warfare Integration (N6F)-led Space CFT. N6F will determine CFT periodicity based on assigned actions.

SUMMARY

As outlined in the DON Space Policy, the Navy intends to integrate the essential capabilities provided by space systems

at every appropriate level throughout the naval force, and will work to shape the outcome of joint deliberations on future space system capabilities to ensure that the Navy's combat effectiveness is preserved. This will require closer cooperation between the Navy and various space-related entities within the DOD, the IC, NOAA and industry. The Navy has already taken a number of steps over the past few years to strengthen its position within the larger National Security Space community but is now embarking on a more ambitious agenda to further establish itself as both an informed user and an experienced contributor to the larger National Security Space enterprise. Details on specific actions the Navy will take in support of this Space Strategy are included in the Navy Space Action Plan.

REFERENCES

DOD Directive 5101.2 "DOD Executive Agent for Space," 3 June 2003
DOD Directive 4650.05 "Positioning, Navigation, and Timing (PNT)"
SECNAVINST 5400.39C "Navy Space Policy," 6 April 2004
OPNAVINST 5400.43A "Navy Space Implementation Directive," 20 May 2005
National Research Council, "Navy's Needs in Space providing Future Capabilities," 2005

LIST OF ACRONYMS

ASAT - Anti-Satellite
C4I - Command, Control, Communication, Computers and Intelligence
CFT - Cross Functional Team
DASN C4I - Deputy Assistance Secretary of the Navy for C4I
DOD - Department of Defense
FCT - Fleet Collaboration Team
IC - Intelligence Community
ICD - Initial Capability Document
ISR - Intelligence, Surveillance and Reconnaissance
JCIDS - Joint Capabilities, Integration and Development System
JCS - Joint Chiefs of Staff
MDA - Missile Defense Agency
METOC - Meteorological and Oceanographic
MUOS - Mobile User Objective System
NCDP - Naval Capability Development Process
NNFE - Naval Networks and FORCENet Enterprise
COMNAVNETWARCOM - Naval Network Warfare Command
NOAA - National Oceanographic and Atmospheric Administration

NRL - Naval Research Laboratory
NRO - National Reconnaissance Office
NTIRA - Navy Tool for Interoperability Risk Assessment
ONR - Office of Naval Research
PEO - Program Executive Office
PNT - Positioning, Navigation and Timing
R&D - Research and Development
S&T - Scientific and Technical
SCI - Special Compartmented Information
SHF - Super High Frequency
TENCAP - Tactical Exploitation of National Capabilities
UHF - Ultra High Frequency
UFO - UHF Satellite Follow-on
USAF - US Air Force
COMUSFLTFORCOM - United States Fleet Forces Command
USNO - US Naval Observatory
VCNO - Vice Chief of Naval Operations