

## Appendix A

### Annex N – Space

#### INTRODUCTION

Operations Plans (OPLANs) are the theater Combatant Commander key planning component for his Area of Responsibility (AOR). The OPLAN defines tasks and responsibilities of the AOR COMBATTANT COMMANDER and each supporting COMBATTANT COMMANDER, administration and logistics requirements and command and control of forces. The OPLANs are used both for long-term planning and for responding to crises within the AOR.

A theater Combatant Commander OPLAN is a key component of the deliberate planning process. OPLANs contain plans for responding to potential crises within the AOR. Development and execution of the OPLAN is in several phases.

- Phase I - Pre-hostilities
- Phase II - Lodgment
- Phase III - Military operations and stability
- Phase IV - Follow-through
- Phase V - Post-hostilities

Part of the OPLAN is the Annex N or the Space Annex that covers what contributions space assets will bring to the fight. OPLAN Annex N's cover space operations contributions to the Combatant Commander mission (friendly space systems) and enemy space capabilities which may threaten mission accomplishment.

Annex N resulted from a review of DESERT STORM operations which revealed that space systems were not integrated into OPLANs because operators were not aware of space system capabilities nor how to access or request space system support. This also led to the generation of Space Support Teams (SSTs) and STRATCOM support plans and the resultant direction from the CJCS to incorporate space system education into all professional and technical military education curriculums.

Annex N is tied into the interservice operation planning and execution system, which is the principal system within DOD for translating NCA policy decisions into the interservice combatant commander's air, land and sea operations. It does this by precisely defining DOD war planning and execution policies, designating specific procedures and format, and providing ADP support to convert NCA decisions into interservice operation plans. Campaign planning is the responsibility of the combatant commander and is not a structured, formal process but facilitates a transition from deliberate planning to crisis action planning.

## **JOINT OPERATION PLANNING AND EXECUTION SYSTEM (JOPES)**

JOPES is a system which includes a set of publications and documents which guide the development of OPLANs and OPORDs, an operation planning process which develops deliberate plans (OPLANs) and operations orders (OPORDs), and an ADP support system for data processing support.

These can all be used to support Crisis Action Planning and the Campaign Plan. However, in today's world, we often face adversaries that we have never faced before or thought of as "enemies". Thus we may not have an OPLAN or even Contingency Plans (CONPLANS) for a particular crisis or area and may have to develop one quickly.

The primary space support plan for all theaters and contingencies comes from STRATCOM. It is a *capabilities-based* plan vice a requirements-based plan. That means that the plan discusses capabilities within Space Command's means to control and operate assets in space.

The plan provides tasks and responsibilities for both the supported commander and STRATCOM.

The supported commander may request space support team assistance, reconfiguring or repositioning of on-orbit satellites to provide him with better and longer coverage and reconfiguring of ground stations for improved C2 and data relay or processing. Additionally, the supported commander may specify known or anticipated shortfalls in COMSAT availability (including bandwidth and frequency limitations).

Responsibilities for STRATCOM (through AFSPACE/14AF) include: providing voice and data missile warning information to combatant commanders, adjusting GPS unencrypted signals for selective availability when desirable, providing communications support, identifying space threats to both satellites and ground systems, providing information on status of protection of space assets and furnishing space support teams when requested to assist the supported commander in defining his space support requirements.

STRATCOM is also responsible for negating hostile space assets through the Satellite Reconnaissance Advance Notice (SATRAN) program which informs theater commanders of when enemy or other country's reconnaissance satellites are capable of seeing ground activity in their area. The satellite vulnerability (SATVUL) program provides notices on threats to US Satellites.

STRATCOM reviews satellite posture and if replenishment is needed, recommends a prioritized, accelerated launch schedule to JCS. On-orbit assets can be repositioned to improve or increase support to battlefield commanders.

## ANNEX N

- Outlines how to obtain and coordinate space support;
- Describes nature of space support;
- Lists operational constraints and shortfalls; and
- Describes command relationships.

The Annex N provides planning guidance concerning space-related support for the deployment and employment of the Combatant Commander forces. Space assets support several crucial areas that enable the Combatant Commander forces to conduct military operations.

Annex N is the Space Annex that is included in the OPLANs of theater Combatant Commander. Annex N provides guidance to U.S. forces in theater for obtaining, coordinating, and using space support to enhance “navigation, communications, warning (of missile attack), environmental monitoring, surveillance and reconnaissance, NUDET reporting and space control”.

Space assets provide the following six capabilities:

- Theater Warning
  - *Provides attack warning detection and notifications capabilities*
- Navigation
  - *Provides terrestrial navigation capabilities from the Global Positioning System (GPS) and other navigation satellites.*
- Communications
  - *Provides satellite communications support*
- Environmental Sensing
  - *Provides environmental and weather satellite support*
- Intelligence, Surveillance and Reconnaissance (ISR)
  - *Military and civilian satellites which can support surveillance and intelligence gathering*
- Space Control
  - *Assures continued operation of space systems for advantage in information warfare and battlefield awareness*

Annex N addresses *planning* in these areas:

- Each of the six space capabilities for potential enemies in the AOR.
- Each of the six space capabilities for friendly/Allied forces in the AOR.
- Planning assumptions under which these capabilities would be used include:
  - shortfalls;
  - limiting factors;
  - world situation; and
  - ability to replace on-orbit assets.

## DEVELOPING A THEATER ANNEX N

Attached is an notional Annex N developed for instructional purposes only. Before developing an Annex N, it is necessary to determine your and the enemy's space assets. To do that, you first need to ask some basic questions.

**Q:** What *kinds* of **space support** are required to support a warfighting COMBATTANT COMMANDER?

**A:** Communications, navigational/positional support, intelligence, surveillance, imagery, attack warning, weather and multi-spectral imagery (MSI). Navigation/positional support should include search and rescue (SAR).

**A:** Environmental monitoring information should include weather and multispectral imagery (MSI) for terrain/water depth analysis, map updates and ground cover classification.

*As the campaign evolves and deployment to a theater nears, more specific questions need to be discussed and resolved.*

### **For example:**

- What are in-theater system capabilities? Can theater units receive downlinked information from satellites properly and in a timely manner? Is additional equipment needed?
- What are area and target coverage requirements? Pin-point target imagery or wide area coverage?
- What is response time of various satellite systems? How do we get data in real-time or near real-time to the theater?
- What is the resolution and accuracy of satellite information?
- What is availability and survivability of space systems?

*Next we'll need to know specific, unique theater requirements.*

These include:

- Do they have the proper terminal or receiver equipment to obtain the needed support data and information;  
(Example: weather terminals and tactical data processors)
- Has connectivity and interoperability among the service components (and allies) been determined and resolved;  
(Example: SHF vs UHF communications; imagery dissemination)
- Has maintenance support, especially of dissimilar equipment, been addressed and resolved; and,

- Has training and exercise space support to the theater been practiced so that deployments do not present personnel with new situations or unknown systems. Allies also need to be knowledgeable in what US systems there are and how they can be used to maximum advantage.

## **INTEGRATING SPACE INTO OPLANS**

Annex N is only one part of the overall effort but it is a critical part. In order to be fully effective, space support and thinking must be integrated throughout as many of the JOPES annexes as possible. Of prime importance are the intelligence, operations, and communications annexes. The execution checklists must also contain information showing what space support to expect at various times.

Most planners consider space as a separate entity, much like operations or communications. This thinking has to be turned around and space incorporated as an integral part of all we do. And the hardest part will be integrating space into joint operations.

As theater COMBATTANT COMMANDER staffs are populated with increasing numbers of Space Weapons school graduates, they will assume greater responsibility for authoring their theater's Space Operations annex.

*Attached is a notional Annex N which shows, paragraph by paragraph, what kinds of data are included in an Annex N. Because of the change in the types of enemies and areas of the world the US fights in today and in the future, many of the Theater Annex N's are becoming more 'generic', focusing on threats within the region rather than on specific countries.*

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**ANNEX N (SPACE OPERATIONS) to OPLAN or OPORD nnn-yy - Issuing Headquarters**

(X) References: List ANNEX N of the next higher commands OPLAN or OPORD and other documents, maps, overlays and SOPs that provide guidance and information for use with this annex.

(X) Time Zone Used Throughout the Order:

1. (X) **SITUATION**

a. (X) **General.** Describe planned and available space support to the OPLAN. Explain how to obtain and coordinate space support. List operational constraints and shortfalls. Describe relationships between supporting and supported organizations. Refer to other annexes or provide enough information about the overall situation to give subordinate and supporting units a clear understanding of the operations contemplated which require space operations support.

b. (X) **Enemy.**

(1) (X) Describe enemy space capabilities, how they will be used and their value to the enemy.

(a) (X) Estimate the impact of enemy space capabilities on friendly operations. Describe notification or warning reports to friendly units of enemy space activities to include enemy reconnaissance, surveillance and target acquisition of friendly forces by manned and unarmed space systems. Discuss the enemy's ability to use friendly space systems to support operations. Refer to Annex B, Intelligence, for amplifying information.

(b) (X) Identify enemy space weaknesses and vulnerabilities such as inadequate coverage, poor resolution, inability to launch new or replacement systems and inability to counter the capabilities of friendly space systems.

(2) (X) Describe what the enemy is capable of doing and probably will do with space, air, surface or subsurface assets to interfere with friendly space systems and space operations that support the missions and tasks envisioned in this plan. Notice of hostile space activities that deny unrestricted friendly access to space, deny the full capabilities of friendly space assets, or restrict friendly surface resources required by these space assets. Refer to Annex B, Intelligence, for amplifying information.

c. (X) **Friendly.** In numbered sub-paragraphs, state the capabilities of external commands, units, forces or agencies to provide space support for the operation such as USSPACECOM, ARSPACECOM, DISA, DIA, NOAA, NASA, etc. Include non-U.S. agencies and systems such as INTELSAT, INMARSAT, ESA, EUMETSAT, etc. Identify systems available for communications, environmental, navigation, surveillance, tactical warning, space control, nuclear detonation detection or other application categories. Identify friendly space weaknesses and vulnerabilities. Describe changes or modifications to established procedures, MOAs or MOUs that may be in effect. Use appendix for detailed information. Refer to the ANNEX N of the next higher command and adjacent commands.

d. (X) **Assumptions.** State any assumptions, not included in the basic plan, relating to friendly, enemy or third party capabilities and operations that may affect, negate or compromise space capabilities. If any assumptions are critical to the success of the plan, indicate alternative courses of action.

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2. (X) **MISSION**

State in concise terms the space tasks to be accomplished in support of the operations in the basic plan and describe desired results in support of this OPLAN

3. (X) **EXECUTION**

Space activities may range from satellite communication and intelligence support to space control operations. The functions required may vary greatly within the area of operations or between phases of the operation. This paragraph may, therefore, require considerable detail and possibly alternative courses of action to accomplish the mission. Appendixes should be used as necessary to provide detailed guidance.

a. (X) **Concept of Operations.**

(1) (X) **General.** State the general concept of space operations required to support the forces in the task organization of the OPLAN and briefly describe how space operations fit into the entire operation or refer to the basic plan. Emphasize the aspects of the basic plan that will require space support and that may affect space capabilities. State OPSEC planning guidance for tasks assigned in this annex, and cross-reference other OPSEC planning guidance for functional areas addressed in other annexes.

(2) (X) **Employment.** If the operation is phased, discuss the employment of space assets during each phase. Include discussion of priorities of access, usage and capabilities in each phase. Discuss ability to launch new or replacement space systems.

b. (X) **Space Support.** Identify space support and procedures that will support the OPLAN. Include the following areas or add additional areas, as applicable:  
Use Appendixes for detailed discussion and information.

(1) (X) **Communications.** Describe space systems that will support communications plans as described in Annex K. List military and commercial satellites and ground systems that will provide support. If any satellites are not in geostationary orbit, provide orbital data sufficient to determine the time and duration of their availability. Include procedures for obtaining additional SATCOM space and ground assets and allocations. Refer to Annex K, Command, Control and Communications Systems, for amplifying information.

(2) (X) **Environmental.** Describe meteorologic, oceanographic, geodetic and other environmental support information provided by space assets. List receivers and processors that are available to receive DNEP and civil weather satellite data. Describe availability of data from the various weather satellites based on transmission schedules, orbital parameters, etc. Describe capabilities, products and availability of multi-spectral satellite data. Describe provisions to acquire, receive or gain access to data from weather, multi-spectral and other satellites that cannot be received by systems in the theater of operations. Describe provisions to deny the enemy access to data from civil weather satellites. Refer to Annex K Environmental Services for amplifying information

(3) (X) **Navigation.** Describe the capabilities of space based navigation systems that will aid the position location and navigation of ships, vehicles, personnel or spacecraft. Describe types of GPS receivers available to subordinate units. Identify which receivers are not able to compensate for selective availability. Quantify the error caused by selective availability. Discuss requirements to increase, decrease or turn off GPS selective availability. If continuous 3-D coverage is not available, describe outage periods or times of reduced coverage. Describe requirements to jam or spoof GPS receivers that may be in use by the enemy. Describe requirements for differential GPS.

(4) (X) **Reconnaissance, Intelligence, Surveillance and Target Acquisition (RISTA).** Describe capabilities available to friendly forces to include IMINT, SIGINT, MASINT, NUDET, multi-spectral and others. Describe inter-theater and intra-theater dissemination architecture and procedures.

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Describe which systems can be used and the type of information they provide. Describe availability of multi-spectral data, its processing and products. Discuss availability and requirements for TENCAP systems. Refer to Annex B, Intelligence, for amplifying information.

(5) (X) **Tactical Warning.** Describe the capabilities of space systems to detect enemy ballistic missile, attack by space-based weapons or other enemy activities. Describe the capabilities of systems such as Tactical Event Reporting System (TERS). Describe coordination and channels needed to disseminate warnings quickly. Identify additional resources needed. Describe linkage and coordination with ground and air based radar systems. Identify whether tactical warning data will be passed to allied military forces and civil agencies and the channels to do so. Refer to Annex B, Intelligence, for amplifying information.

(6) (X) **Space Control.** Describe actions performed by space, air or surface assets to ensure friendly forces access to space or deny enemy forces unrestricted use of space and space assets. Include planned or anticipated actions in response to the enemy's use of space or denial of friendly access to space and space systems.

c. (X) **Tasks and Responsibilities.** In numbered paragraphs, assign individual tasks and responsibilities to each applicable subordinate unit, supporting command or agency that provides support to the plan. For each of these tasks, provide a concise statement of the mission to be performed in further planning or execution of the overall plan, providing sufficient detail to ensure that all elements essential to the operational concept are described properly.

d. (X) **Coordinating Instructions.** Provide necessary guidance common to two or more components, subdivisions or agencies. Describe liaison requirements, if any.

4. (X) **ADMINISTRATION AND LOGISTICS**

Provide broad guidance concerning administrative and logistic support for space operations. Address support of mobile or fixed space system assets within the area of operations or refer to another annex where this information is available. Describe support needed and who will provide it for any space related ground stations supporting the command. Describe resupply procedures for cryptological supplies. Refer to Annex D, Logistics, or pertinent command directives for amplifying information.

5. (X) **COMMAND AND CONTROL**

a. (X) **Command and Control.** Indicate the difference, if any, between the command channels for the conduct of space activities and the command relationships established in Annex J. If applicable, state requirements for augmentation of appropriate headquarters with space operations personnel. Refer to the appropriate section of Annex J, Annex K or the basic plan for general C<sup>2</sup> support of space activities.

b. (X) **Command, Control, and Communications Systems.** Summarize requirements for general C<sup>2</sup> systems support of space activities. Refer to appropriate sections of Annex K.

/t

General/COMBATTANT COMMANDER

Appendices: 1 - Communications  
2 - Environmental  
3 - Navigation  
4 - Reconnaissance, Surveillance and Target Acquisition  
5 - Tactical Warning  
6 - Space Control

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7 - Space Support

(Complete Appendixes only as required for amplifying details)

**Hints on preparation of Annex N and supporting Appendixes:**

1. Focus on unique space capabilities and their application to the operation.
2. Refer to the ANNEX N of the next higher command's OPLAN/OPORD.
3. Cross-reference to other Annexes. Avoid unnecessarily repeating information contained in other Annexes.