AIR FORCE DOCTRINE PUBLICATION (AFDP) 3-14 COUNTERSPACE OPERATIONS

SPACE SERVICE SUPPORT

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Space service support capabilities ensure access to, transport through, operations in, and, as appropriate, return from space through reliable, flexible, resilient, responsive, and safe launch and satellite operations.* Space service support consists of spacelift, range, and satellite operations. Space service support capabilities contribute to counterspace operations, incorporate both active and passive measures for self-protection, reconstitute capabilities lost due to enemy attack, and benefit from defensive counterspace actions to suppress attacks, as required, in all domains.

Spacelift Operations

Spacelift operations provide the capability to move satellites, payloads, and materiel into space to sustain, augment, and reconstitute space-based capabilities. During contingency operations, reconstitution of satellite constellations may require responsive spacelift, ready availability of replacement spacecraft, and properly trained personnel to launch and operate the systems. Rapid reconstitution should increase overall space mission assurance by restoring functionality to an acceptable level for a particular mission, operation, or contingency after a severe degradation, but it may also introduce additional operational risk.

Range Operations

Range operations contribute to assured, responsive, safe and reliable access to space during government-sponsored spacelift operations and Department of Defense (DOD) test and evaluation flight test activities. However, the Federal Aviation Administration has responsibility for public safety during commercial space launches.

Satellite Operations

Satellite operations maneuver, configure, operate, and sustain on-orbit assets and are characterized as either spacecraft or payload operations. Satellite operations include monitoring the battlespace; updating potential schemes of maneuver; and maintaining defensive postures to ensure freedom of action and to provide continued space mission assurance to the warfighter as well as national, civil, and commercial users worldwide. Payload operations include monitoring and commanding the satellite mission payload. Air Force satellite operations include advanced tactics, techniques, and procedures to ensure continued access to space capabilities in a contested, degraded, and operationally-limited environment across the range of military operations.

* As described in Change 1 to DOD Directive 3100.10, Space Policy, dated 4 Nov 16.

- **On-Orbit Reconstitution**. Reconstitution may be required to restore functionality following the degradation or loss of a capability. In the event of a system degradation or loss, satellite operations may satisfy or mitigate a capability gap through repositioning, reconfiguring or repurposing other assets, or by the satellite operators notifying command authorities of a degradation or loss that may require reconstitution with civil and commercial capabilities.

- **Disposal of Space Vehicles**. To minimize space debris and collision risk, spacecraft are properly disposed of at their end of life. Potential options include controlled or uncontrolled atmospheric re-entry, transfer to a disposal orbit, or direct retrieval. Planners must consider disposal options during life cycle development and on-orbit employment to ensure the viability of disposal at the spacecraft's end of life.

- **Rendezvous and Proximity Operations (RPO)**. Rendezvous operations intentionally bring space objects close together. Proximity operations maintain a close separation between space objects for a specific purpose. RPO include the potential to support a wide range of future US space capabilities. Servicing of on-orbit space assets requires the capability to rendezvous, conduct close proximity operations, and/or dock with a space asset. On-orbit servicing capabilities enable inspection, repair, replacement, and/or upgrade of spacecraft subsystem components and replenishment of spacecraft consumables (e.g., fuels, fluids, cryogens, etc.). RPO may also be used to provide information on spacecraft events to inform US and friendly SSA.