



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS UNITED STATES SPACE FORCE

24 September 2024

MEMORANDUM FOR DISTRIBUTION

FROM: SF/CSO

SUBJECT: Military Space Operations Terms of Reference

1. To ensure unity of effort, it is necessary for the Space Force to define common terms of reference (TOR) for military space operations (MSO). A common lexicon ensures clarity and precision across the enterprise, including but not limited to concept development, resource decisions, organizational structures, training, and threat reporting. This TOR serves as a frame of reference to drive understanding and alignment across the Service.
2. The attached TOR defines the operational and enterprise activities a military force—either red or blue—could perform in, from, or to the space domain. Moving forward, the Space Force will normalize lexicon and messaging around the terms described therein.
3. This TOR will adapt as technological development and operational understanding evolve.

A handwritten signature in black ink, reading "B. Chance Saltzman", is positioned above the typed name.

B. CHANCE SALTZMAN
General, USSF
Chief of Space Operations

Attachment:

1. Terms of Reference for Military Space Operations, 24 September 2024

TERMS OF REFERENCE
FOR
MILITARY SPACE OPERATIONS

1. **Purpose.** The Military Space Operations (MSO) terms of reference (TOR) organizes and defines the operational and support activities a military force – either red or blue – could perform in, from, or to the space domain. Because this TOR is informed by existing technology rather than policy or resourcing, the inclusion of a mission area does not imply the existence of a corresponding capability.
2. **Framework.**
 - 2.1. *Core Function (CF).* A broad and enduring operational role a military force is designed, equipped, and trained to perform. Core functions are comprised of mission areas.
 - 2.2. *Mission Area (MA).* A major grouping of interrelated activities that must be performed to accomplish a core function. Mission areas are comprised of mission sets.
 - 2.3. *Mission Set (MS).* A family of capabilities that performs similar tactical tasks.
 - 2.4. *Enterprise Function (EF).* A cross-cutting activity that enables all core functions. Enterprise functions are comprised of enterprise activities.
 - 2.5. *Enterprise Activity (EA).* An element or subdivision of an Enterprise Function.
3. **Core Functions.**
 - 3.1. **(CF) Space Control.** Space Control comprises the activities required to contest and control the space domain. The desired outcome of Space Control operations is Space Superiority, a degree of control that allows forces to operate at a time and place of their choosing without prohibitive interference from space or counterspace threats, while also denying the same to an adversary. Space Control consists of offensive and defensive actions, referred to as counterspace operations. Counterspace operations are conducted across the space, electromagnetic spectrum, and ground segments of the space architecture.
 - 3.1.1. **(MA) Orbital Warfare (OW).** Combat operations conducted through fires, movement, and maneuver to control the space domain.
 - 3.1.1.1. *(MS) Offensive OW.* Negate enemy ability to use space or counterspace systems.
 - 3.1.1.2. *(MS) Defensive OW.* Protection against enemy ability to attack friendly systems.
 - 3.1.2. **(MA) Electromagnetic Warfare (EW).** Combat operations through the electromagnetic spectrum to negate space or counterspace threats.
 - 3.1.2.1. *(MS) Offensive Space Control EW.* Negate enemy ability to use space or counterspace systems.
 - 3.1.2.2. *(MS) Defensive Space Control EW.* Protection against enemy ability to attack friendly systems.
 - 3.1.3. **(MA) Cyberspace Warfare (CW).** Combat operations conducted in the cyber domain through fires, movement, and maneuver to control the space domain.

3.1.3.1. (MS) *Offensive CW*. Negate enemy ability to use space or counterspace systems.

3.1.3.2. (MS) *Defensive CW*. Protection against enemy ability to attack friendly systems.

3.2. **(CF) Global Mission Operations**. Activities to deliver space capabilities to the Joint Force and the nation.

3.2.1. **(MA) Satellite Communication (SATCOM)**. Provide secure, resilient communication services through space-based platforms.

3.2.1.1. (MS) *Strategic*. Support to nuclear command, control, and communication users.

3.2.1.2. (MS) *Operational*. Support to fixed-site users.

3.2.1.3. (MS) *Tactical*. Support to mobile, disadvantaged, or tactical data link users.

3.2.2. **(MA) Navigation Warfare (NAVWAR)**. Assure or deny positioning, navigation, and timing (PNT) data through space, cyberspace, and electromagnetic spectrum operations (EMSO).

3.2.3. **(MA) Missile Warning and Tracking (MWT)**. Detect missile launches, track their trajectory, and issue timely warnings.

3.2.3.1. (MS) *Ground Based Surveillance (GBS)*. Provide radar phenomenology to the Integrated Threat Warning Attack Architecture (ITWAA) system.

3.2.3.2. (MS) *Overhead Persistent Infrared Surveillance (OPIR)*. Provide IR phenomenology to the Integrated Threat Warning Attack Architecture (ITWAA) system and/or Theater Event System.

3.2.4. **(MA) Space-Based Sensing and Targeting (SBST)**. Collect, process, and disseminate terrestrial battlespace awareness.

3.2.4.1. (MS) *Environmental Monitoring (EM)*. Collect, process, and disseminate environmental data.

3.2.4.2. (MS) *Moving Target Indicator (MTI)*. Collect, process, and disseminate track data on moving targets in the terrestrial domains.

3.2.4.3. (MS) *Battlespace Awareness*. Collect, assess, and disseminate militarily relevant data.

3.2.5. **(MA) Theater Electromagnetic Warfare (TEW)**. Actions taken in the EMS to protect or prevent the ability to communicate using space-based platforms.

3.2.5.1. (MS) *Electromagnetic Attack (EA)*. Transmit energy through the EMS to disrupt or degrade a terrestrial target's ability to receive signals or deliver data.

3.2.5.2. (MS) *Electromagnetic Protection (EP)*. Protect personnel, facilities, and equipment from intentional or inadvertent electronic interference.

3.2.5.3. (MS) *Electromagnetic Surveillance (ES)*. Search for, intercept, identify, locate, or localize sources of intentional or unintentional radiated electromagnetic energy for the purpose of immediate threat recognition, targeting, planning, or future operations.

- 3.3. **(CF) Space Access.** The movement and sustainment of equipment in, from, and to the space domain.
- 3.3.1. **(MA) Satellite Control.** Activities necessary to assure the infrastructure, networks, equipment, and connectivity that enables mission control (i.e. telemetry, tracking, and commanding) of satellites.
- 3.3.2. **(MA) Space Lift.** The movement of payloads (spacecraft or other materials) to and from the space domain.
- 3.3.2.1. ***(MS) Launch.*** Place payloads (spacecraft or other materials) into space.
- 3.3.2.2. ***(MS) Recovery.*** Recover payloads (spacecraft or other materials) returning from space.
- 3.3.2.3. ***(MS) Payload Processing.*** Integrate payloads onto a launch vehicle.
- 3.3.2.4. ***(MS) Telemetry and Tracking.*** Monitor the position, velocity, and system performance of the launch vehicle throughout flight operations.
- 3.3.2.5. ***(MS) Responsive Launch.*** Deploy capability into space on operationally relevant timelines in a contingency or crisis.
- 3.3.3. **(MA) Range Control.** Provide a safe and secure range for space launch operations.
- 3.3.3.1. ***(MS) Restricted Area Control.*** Monitor and restrict access to land, airspace, and maritime areas surrounding the launch site.
- 3.3.3.2. ***(MS) Flight Safety.*** Terminate a launch or destroy the vehicle if it deviates from the planned trajectory, experiences a catastrophic failure, or poses a threat to public safety.

6. **Enterprise Functions.**

- 6.1. **(EF) Intelligence.** The products resulting from the collection, processing and exploitation, analysis and production, integration, and targeting concerning foreign nations, hostile or potentially hostile forces, and areas of actual or potential operations.
- 6.1.1. ***(EA) Collection.*** The acquisition of information and the provision of this information to processing elements. See also intelligence process.
- 6.1.2. ***(EA) Processing and Exploitation.*** The conversion of collected information into forms suitable to the production of intelligence.
- 6.1.3. ***(EA) Analysis and Production.*** The conversion of processed information into intelligence through the integration, evaluation, analysis, and interpretation of all-source data and the preparation of intelligence products in support of known or anticipated user requirements.
- 6.1.4. ***(EA) Integration.*** Infuse intelligence processes and products into operational units for the accomplishment of military objectives.

- 6.1.5. *(EA) Targeting*. The process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities.
- 6.2. **(EF) Networks**. Interconnected communications frameworks that link systems and nodes for the passage of data and commands.
- 6.2.1. *(EA) Base Operating Support-Information Technology (BOS-IT)*. Provision and operate installation networks required for administrative base support activities.
- 6.2.2. *(EA) Mission-Information Technology (MSN-IT)*. Provision and operation of networks required for mission activities.
- 6.2.3. *(EA) Data Services*. Store, manage, process, and disseminate mission data.
- 6.3. **(EF) Command and Control (C2)**. The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission.
- 6.3.1. *(EA) Global Command and Control (Global C2)*. C2 in support of global space superiority operations.
- 6.3.2. *(EA) Regional Command and Control (Regional C2)*. C2 in support of regional or theater operations.
- 6.3.3. *(EA) Tactical Command and Control (Tactical C2)*. Direct and coordinate forces engaged against an adversary to accomplish objectives.
- 6.3.4. *(EA) Battle Management*. Manage activities within the operational environment based on the commands, direction, and guidance given by appropriate authority (e.g. target sort, weapons pairing, fire control).
- 6.4. **(EF) Space Domain Awareness (SDA)**. Detect, characterize, attribute, predict, and target activities in the space domain to inform decision making.
- 6.4.1. *(EA) Reconnaissance* — A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or adversary, or to secure data concerning the characteristics of a particular area or thing.
- 6.4.2. *(EA) Surveillance* — The systematic observation of space by visual, aural, electronic, photographic, or other means.
- 6.4.3. *(EA) Conjunction Assessment*. Identify close approaches using a catalog of space objects.
- 6.4.4. *(EA) Collision On Launch Assessment*. Ensure objects launched into space are not at immediate risk of conjunction with a known object.
- 6.4.5. *(EA) Breakups*. Process and analyze debris generated by on on-orbit events.
- 6.4.6. *(EA) Rendezvous and Proximity Operations Support*. Provide situational awareness and analysis to allow friendly or cooperative space objects to operate near one another.