



DEPARTMENT OF THE AIR FORCE
UNITED STATES SPACE FORCE
SPACE SYSTEMS COMMAND

AFSPCI13-610_SSCGM2026-01
16 JUNE 2026

MEMORANDUM FOR SEE DISTRIBUTION

FROM: SSC AA3/5
10351 Samuel Phillips Pkwy
Bldg 85125 (CCSFS)
Cape Canaveral SFS, FL 32927

SUBJECT: Guidance Memorandum to AFSPCI 13-610, *Launch & Range Operations*

1. By Order of the Commander, Space Systems Command (SSC), this SSC Guidance Memorandum implements changes to AFSPCI 13-610, *Launch & Range Operations*. Compliance with this Memorandum is mandatory. To the extent its directions are inconsistent with other SSC publications, the information herein prevails, in accordance with DAFMAN 90-161, *Publishing Processes and Procedures*.
2. The attachment to this memorandum, which is effective immediately, provides guidance on assessing Space activity or commercial Test & Evaluation activity on a USSF launch range, accomplishing probability of impact calculations for critical asset protection, SLD/CC identifying Day of Launch mandatory positions and identifying SSC/CC as the Flight Worthiness Certification Authority is appropriate due to mission risk.
3. This memorandum becomes void after one year has elapsed from the date of this memorandum, or upon incorporation by interim change to, or rewrite of AFSPCI 13-610, whichever is earlier.

DANIEL P. HIGHLANDER, Colonel, USSF
Director, Operations Integration

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ATTACHMENT

Administrative Changes

References throughout to legacy Air Force Space Command (AFSPC) units or organizations should be considered references to equivalent or successor units or organizations of the USSF or Space Systems Command (SSC).

References throughout to “AFSPC/CC” are hereby changed to “SSC/CC”.

References throughout to “SMC/CC” are hereby changed to “SSC/CC”.

Guidance Changes

(Changed) 2.2.1.2.1.1. For SSC-procured launches. The SSC/CC will certify flight worthiness for NSS missions launching SSC-procured spacecraft on SSC-procured launch services. The SLD/CC will normally receive SSC/CC flight worthiness certification from the Missions Director (MD) during the Launch Readiness Review (LRR).

(Added) 2.3.2.1.1. Space activity by a commercial entity is not commercial T&E use of the range as provided for in 10 USC § 2681. For the purposes of this publication a private U.S. entity engaging in space activities (as defined at attachment 1) is considered a “commercial space entity.” The commercial space entity shall hold a valid USSF CSOSA in order to be allowed access to USSF resources IAW 10 U.S.C. § 2276a and 51 U.S.C. § 50504 authorities and implementing regulations. Prior to signing a CSOSA, Space Systems Command (SSC)/AA3/5 will conduct an assessment, in coordination with the Space Launch Delta Plans and Programs Office, to determine if the commercial entity is engaged in space activity. Space activity includes activity located at launch sites or launch ranges that are required to support launch/reentry, including launch vehicle assembly, launch vehicle operations and control, communications, flight safety functions, and payload operations, control, and processing and any associated services, commodities, or infrastructure required to support this activity. SSC/AA3/5 approval of a CSOSA certifies all activity by the commercial entity should be treated as Space activity and support is in the national interest. For the duration of the CSOSA, activity conducted by the commercial entity will be treated as Space activity to include work on the installation designated to develop, demonstrate, or assess the capability of the launch/reentry vehicle, payload, or associated support infrastructure/equipment. If installation representatives are aware of activity that they believe is inconsistent with this guidance they can remove government support from the activity of concern and query SSC/AA3/5 for additional direction. Commercial entities requesting access to T&E infrastructure under 10 U.S.C. 2681 provisions will make a request to the installation and the installation will coordinate, if necessary, with SSC/S3 on the support to be provided to avoid any conflicts.

(Changed) 3.2.1.1. Certifies New Entrant or existing provider’s new/modified launch vehicles (Assigned to Space Force Program Executive Office (SFPEO), Assured Access to Space AATS)) and Space Flight Worthiness of SSC-procured SV’s and launch services.

(Added) 3.4.1.14. Ensure Critical Asset Protection calculations are conducted IAW **Attachment 8** for all launches and reentries conducted from their respective ranges. **(T-2)**

(Added) 3.4.1.14.1. Ensure calculation results are shared with asset owners NLT L-7 days.

(Added) 3.4.1.14.2. Serve as decision authority for de-confliction of all range activity.

(Added) 3.4.1.15. Provide Payload Recovery Team support in the event of a launch mishap and planned exercises. To include assigning Payload Recovery Team Director and personnel to support launch mishap space vehicle recovery and investigations.

Attachment 1 – Glossary of references and supporting Information

Abbreviations and Acronyms

(Added) PRT – Payload Recovery Team

Terms

(Added) Critical Asset - A resource requiring protection. It normally includes property/ infrastructure that is essential to protect the public health and safety, maintain the minimum operations of the range, or protect the national security or foreign policy interests of the United States (see DAFI 91-102); an asset that is essential to the national interests of the United States. Critical assets include property, facilities, or infrastructure necessary for national security purposes, high priority civil space purposes, or assured access to space for national priority missions.

(Added) Critical Payload - A Payload and essential infrastructure actively supporting such a payload that is a critical asset that is so costly or unique that it cannot be readily replaced or the time frame for its replacement would adversely affect the national interests of the United States.

(Added) T&E Infrastructure - The facilities, ranges and all other physical assets such as buildings, instrumentation, networks, range space, and frequency spectrum, used when conducting DoD Weapon System T&E. Refer to MRTFB composition list.”

Attachment 2 – Launch Activity Execution

(Deleted) Table A2.1. DoL Positions.

(Changed) A2.2.2.1. The Space Launch Delta (SLD)/CC (or designee) exercises launch decision authority for USG and T&E launches and accepts necessary risk for DoL activities. **(T-2)**

(Added) A2.2.2.1.1. The SLD/CC will identify and document mandatory DoL positions for all launches (can be accomplished in advance by launch type) to ensure the responsibilities captured below are accomplished. **(T-2)**

(Changed) A2.1.2.13. Contingency Response Support. Provide readiness status of EOC, its positioning, and key personnel. Include, by name, the ISB President, *the Payload Recovery Team (PRT) Director*, and agency having mishap investigation authority. Review readiness status of the security forces and applicable waivers/deviations to security requirements.

(Changed) A2.2.3.2. Determines LV/SV mission “Go/No-Go.” **(T-2)**

(Added) Attachment 8: Critical Asset Protection

(Added) A8.1. SLDs will implement common critical asset protection processes, tools, and parameters. **(T-2)**

(Added) A8.2. SLD Safety Offices will calculate probability of impact to protect resources on the installation from the hazards of launch, landing, and reentry. Calculations will consider the

susceptibility of the facility/asset at risk to the hazard(s) presented by the launch vehicle throughout flight, and national interest of a specific launch/space vehicle. First flight, new trajectory, changed launch vehicle configurations, etc. have the potential to introduce new risk and require additional consideration. In such cases calculations should be performed as early as possible to provide maximum response time from impacted asset owners. Re-flights of existing vehicle configurations and/or trajectories should present understandable risk and might not require any calculations be performed. Concerned asset owners can engage SLD/SEs for an analysis at any time if conditions used in current analysis change.

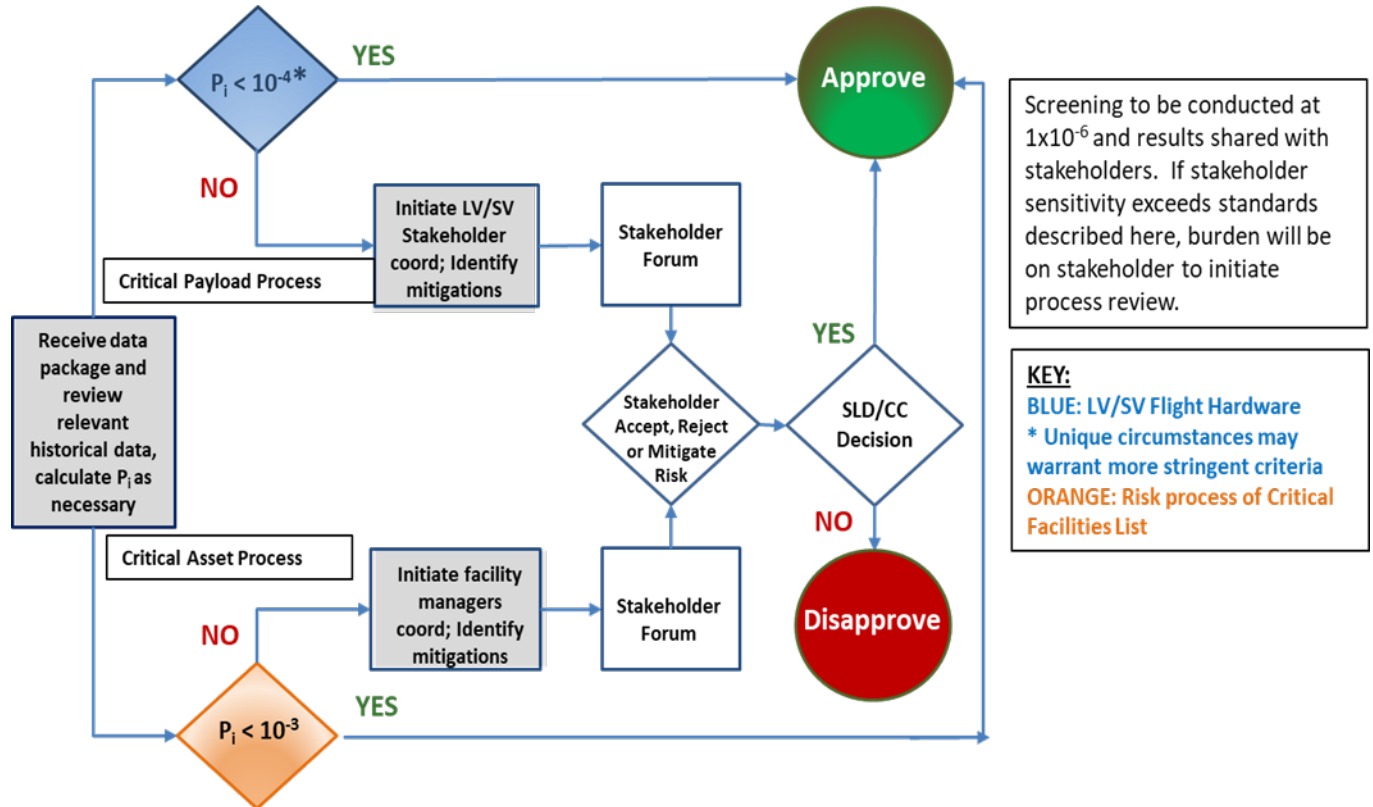
(Added) A8.3. Risk calculation will be performed as part of the flight safety assessment process and screen for a risk of a Probability of Impact (P_i) of $>1 \times 10^{-6}$. This screening will provide comprehensive information to facility/asset owners to assess an acceptable level of risk. The acceptable level of risk for critical assets will be a probability of $<1 \times 10^{-3}$ (DAFI91-202) of the risk event resulting in debris of sufficient energy penetrating the facility and the probability of damaging the facility due to nearby impacts of explosive fragments that can cause a blast overpressure producing a loss of functionality (as described in RCC 321). For critical payloads and related essential infrastructure directly supporting such a payload, a probability of $<1 \times 10^{-4}$ of an event resulting in a debris of sufficient energy to cause the loss of the vehicle/spacecraft, while contained in a building or protected by a launch support structure, is the normal threshold of acceptable risk. The SLD Commander, in coordination with the critical payload owner, may apply down to a probability of $<1 \times 10^{-6}$ for acceptable risk for resource protection criteria when an unsheltered critical asset, (such as but not limited to) on a launch complex, is put at risk from a third-party launch. Note: Critical asset and critical payload risk criteria above is consistent with requirements for FAA-licensed launches.

(Added) A8.4. Calculation results will be shared with launch infrastructure and asset owners as soon as information is available but NLT L-7 days. **(T-3)** As addressed above, new/changed vehicles and/or flight profiles require early calculation to allow asset owners maximum time to understand risk and possible acceptance or mitigation approaches between asset owners and launch providers. When conducting early analysis, to include at L-7 days, statistical weather data will be utilized. Forecasted weather closer to day-of-launch may result in different results. Any relevant historical data should also be included in discussions with asset owners. Probability of Impact will not be calculated on Day of Launch and all analysis and decisions should be completed prior to the LRR. Direct engagement with stakeholders will better allow informed discussion on how actual weather will impact acceptance/mitigation decisions. Asset owners are responsible for assessing the results against the standard based on facilities/assets at risk. Asset owners will keep SLD safety apprised of changes in facility characteristics/footprint/asset impact sensitivity (i.e. amount of energy required to cause a moderate level of damage to facility/asset) or transient asset location/movement.

(Added) A8.5. If assets face an unacceptable level of risk, the SLD Safety Office will hold a stakeholder forum with the activity and property owners to address specific impacts and possible mitigations. If unable to resolve the discrepancy, the stakeholder forum will present results to the SLD Commander for a decision. If a stakeholder disagrees with the Commander's decision, they will engage through their leadership channels. If significant scheduling actions or conflicts

cannot be resolved at a lower level, then an Out-of-Cycle (OOC) CLSRB will convene to address concerns.

(Added) Figure A8.1 Critical Asset Protection Flow Diagram



**BY ORDER OF THE COMMANDER
AIR FORCE SPACE COMMAND**

**AIR FORCE SPACE COMMAND
INSTRUCTION 13-610**



14 MAY 2018

***Nuclear, Space, Missile, Command and
Control***

LAUNCH & RANGE OPERATIONS

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFD13-6, *Space Policy*, and AFI 10-1211, *Space Launch Operations*. It establishes Air Force Space Command (AFSPC) roles and responsibilities relating to spacelift operations and is applicable to: Headquarters Air Force Space Command (HQ AFSPC); Space and Missile Systems Center (SMC); Fourteenth Air Force (14 AF); 30th Space Wing (30 SW); and 45th Space Wing (45 SW). It also applies to all military, government service, and applicable contractor personnel, as outlined within the contract, whose duties directly relate to the management, operations, preparation, and conduct of activities required to support the AFSPC spacelift mission. This instruction does not apply to the Air Force Reserve or the Air National Guard. Wherever this instruction is inconsistent with current contracts that support AFSPC's mission, the contract shall govern. For a glossary, list of references, acronyms, and abbreviations, see **Attachment 1**, *Glossary of References and Supporting Information*. Send comments and suggested improvements on an AF Form 847, *Recommendation for Change of Publication*, through appropriate command channels to HQ AFSPC/A2/3/6SR, 150 Vandenberg Street, Suite 1105, Peterson AFB, CO 80914-4200. Organizations requesting document changes should ensure all units that could be affected by the change are included as informational addressees. Subordinate organizations are encouraged to supplement this instruction. Supplements will be coordinated through appropriate command channels and approved by AFSPC/A2/3/6. Supplements will not lessen the requirements nor change the basic content or intent of this instruction. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The authorities to waive wing/unit level requirements in this

publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the requestors commander for non-tiered compliance items. A copy of the approved waiver for non-tiered requirements must be sent to the publication OPR within 30 days of approval.

SUMMARY OF CHANGES

This document has been totally rewritten and should be reviewed in its entirety. Major changes include Organizational Responsibilities, Launch Activity Execution, Multi-Mission Manifesting, Launch and Test Range Systems Management, and Orbital Debris Mitigation processes.

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Chapter 1

LAUNCH & RANGE OPERATIONS OVERVIEW

1.1. Assured Access to Space. United States Government (USG) space policies identify “assured access to space” as the need to meet USG launch needs, while also taking the necessary steps to strengthen U.S. competitiveness in the international commercial launch market, to ensure U.S. space transportation capabilities will be reliable, robust, safe, and affordable. This key concept supports and implements National Security Strategy, National Space Policy, National Space Transportation Policy, National Military Strategy, and Air Force (AF) directives. These policies indicate assured mission capability for critical space systems can be achieved only through assured and protected access to space. Assured access to space requires close partnership with commercial launch service providers and other federal agencies, such as the National Reconnaissance Office (NRO), Federal Aviation Administration’s Office of Commercial Space Transportation (FAA-AST), and the National Aeronautics and Space Administration (NASA). This instruction is developed with the intent of implementing Commander, Air Force Space Command (AFSPC/CC) and Congressional direction to streamline commercial access to AFSPC property and services. This instruction establishes a path to more stable, predictable, cost affordable, and efficient interaction with commercial space activities to meet our assured access to space needs.

1.2. National Space Transportation Policy. National Space Transportation Policy (21 Nov 13) directs the Secretary of Defense (SECDEF), as launch agent, to maintain the capacity to evolve and support the space transportation systems, infrastructure, and support activities necessary to meet national security requirements. Department of Defense Instruction (DoDI) 3100.12, Space Support, allocates responsibility for National Security Space (NSS) transportation including launch to the AF. The AF executes launch and range operations through AFSPC. AFSPC’s spacelift mission is to ensure successful and safe delivery of space systems to support national objectives and provide a decisive advantage to US forces worldwide.

1.3. Spacelift. Spacelift is a key enabler that establishes and supports a broad range of space capabilities. The US uses launches to populate satellite constellations on a scheduled basis. Launches are planned in advance and executed within the Current Launch Schedule Review Board (CLSRB) process. NSS launches are predominantly used to deploy and sustain force enhancement constellations, but are also used to support, deploy, or advance a variety of national security mission needs.

1.3.1. AFSPC must maintain a successful, robust, secure, and modern spacelift capability to meet warfighter and other national security mission needs. All echelons within AFSPC must strive to meet this basic requirement at an affordable cost.

1.3.2. In addition to Department of Defense (DoD) personnel, launch and range operations utilize contracted services. To ensure proper mission execution and contractor compliance, AF personnel should understand government rights and responsibilities embodied in contracts and their provisions. A general understanding of the contract between the AF and the contractor is of particular importance for commanders and mission personnel. Individuals seeking guidance on contracts should contact the cognizant government contracting office.

1.3.3. Mission success requires experience, effective training, qualification, and certification programs, workforce management, and technical excellence.

1.4. Licensed Government Launches. Launches by or for the government do not require FAA licensing (51 U.S. Code (USC) § 50919). In some cases however, USG agencies may choose to contractually require licensing for launches of USG missions. Those launches will be treated as Commercial/FAA-licensed for the purposes of this instruction. The determining factor for licensing determination is not mission ownership, but rather the level of engagement the government plans to undertake over the course of the launch service. For this reason, licensing of launches should be reserved for missions where the USG has a higher risk tolerance, limited operational need, and does not intend to substantially control the launch or pre-launch activities. For those launches in which the government is substantially involved as to be effectively directing or controlling the operation, the licensing approach is not a viable action. To ensure operational equities are preserved, AFSPC/CC approval is required prior to a licensing determination for an AFSPC-funded launch activity.

Chapter 2

SPACELIFT MISSION

2.1. Spacelift General Responsibilities

2.1.1. The AFSPC/CC has an inherent authority and legal responsibility for all activity that occurs on the Eastern Range (ER) and Western Range (WR). The AFSPC/CC delegates safety, range operations, and base operating support elements to the 14 AF/CC, who in turn delegates them to the launch wings. AFSPC/CC exercises responsibility for spacelift operations. The SWs, IAW Congressional direction, will take actions to eliminate duplicative requirements and approvals for commercial launch and reentry operations to promote and encourage the development of the commercial space sector. The FAA is the federal agency with regulatory authority for commercial launch activity. The SWs will work in partnership with the FAA to accomplish federal objectives. The FAA's requirements allow commercial launch providers to use AF processes and services to meet their obligations. If the SW is asked, and has available services to support, they will provide these services. If the commercial launch provider does not choose to use AF launch services and processes, they will be held by the FAA to 14 Code of Federal Regulations (CFR) requirements. DoD will continue to consult on the launch provider's license IAW USC 51. Additionally, the SWs will perform ongoing day-to-day coordination at the launch site IAW agreements entered into for range service and property usage.

Figure 2.1. Responsibility for ER/WR Operations

	GOVERNMENT			FAA LICENSED (COMMERCIAL) ¹			T&E
	AF	NRO ⁴	Other DoD and Civil	Commanded FTS	AFSS - AF Property	AFSS - Non-AF Property	All
Flight Worthiness Certification	SMC/CC	DNRO	Launch Agency	Launch Provider	Launch Provider	Launch Provider	Test Agency
LVMA	SMC/CC	SMC/CC	Launch Agency	Launch Provider	Launch Provider	Launch Provider	Test Agency
SVMA	SMC/CC	DNRO	Launch Agency	Launch Provider	Launch Provider	Launch Provider	Test Agency
Launch Safety	SW/CC	SW/CC	SW/CC	Launch Provider IAW FAA Licensing Process ³	Launch Provider IAW FAA Licensing Process ³	Launch Provider IAW FAA Licensing Process ³	SW/CC
Flyback to AF Property ²	SW/CC	SW/CC	SW/CC	Launch Provider IAW FAA Licensing Process ³	Launch Provider IAW FAA Licensing Process ³	Launch Provider IAW FAA Licensing Process ³	SW/CC
Range Operations	OG/CC	OG/CC	OG/CC	OG/CC	OG/CC	OG/CC	OG/CC
Base Operating Support	MSG/CC	MSG/CC	MSG/CC	MSG/CC	MSG/CC	MSG/CC	MSG/CC

1 - The SW/CC has an inherent authority and responsibility for resource protection and to preserve the common interest of all operations on the AF installation. If activity presents an unacceptable risk, the SW/CC will consult with the FAA to mitigate concerns.

2 - For flyback to AF property, the SW/CC has a responsibility to ensure the readiness of the installation to receive the flyback portion of launch and retains the authority to provide a no-go, regardless of launch location.

3 - SW/CC responsibility is met through FAA licensing process, range user compliance with land use agreements, and day-to-day interactions.

4 - For SMC procured launch vehicles. In all other circumstances NRO is considered "Other DoD and Civil"

2.2. Launch.

2.2.1. Flight Worthiness Responsibilities:

2.2.1.1. All launch agencies operating on the ER and WR will confirm flight worthiness to the wing commander prior to initiating Day of Launch (DoL) activities. Those processes will be sufficiently robust and acceptable to provide the launch wing commander a sufficient level of confidence that launch vehicle performance presents an acceptable risk to launch safety and launch base infrastructure and security.

2.2.1.2. Launch activity is divided into the three categories: USG launch, Commercial/FAA-licensed launch, and test and evaluation (T&E).

2.2.1.2.1. USG launch activity. They can be AF, NRO, other DoD, or Civil missions by and for the government.

2.2.1.2.1.1. For AFSPC-procured launches, AFSPC/CC delegates flight worthiness certification authority to the SMC/CC. The SMC/CC will certify flight worthiness for DoD missions launching SMC-procured spacecraft on SMC-procured launch systems/services. The wing commander will normally receive the SMC flight worthiness certification from the Mission Director (MD) during the launch readiness review (LRR).

2.2.1.2.1.2. For NRO missions, Director of the NRO (DNRO) (or designated representative) will certify flight worthiness for NRO-procured spacecraft on SMC-procured launch systems/ services. The SMC/CC will certify launch vehicle (LV) flight worthiness to DNRO as part of the DNRO's mission certification. In all other circumstances NRO is considered "other DoD and Civil". The wing commander will normally receive the NRO's flight worthiness certification during the LRR.

2.2.1.2.1.3. For other DoD and Civil missions, the launch agency will perform flight worthiness certification processes. Those processes will be sufficiently robust and acceptable to provide the launch wing commander a sufficient level of confidence that launch vehicle performance presents an acceptable risk to launch safety and launch base infrastructure and security. The wing commander will normally receive the launch agency's flight worthiness certification during the LRR.

2.2.1.2.2. Commercial/FAA-licensed launches. Commercial launches are launches licensed by the FAA. The FAA's licensing process will be used to meet AFSPC obligations for FAA-licensed launches. The FAA licensing process from a federal range, allows the use of AF safety processes as described in CFR § 417.201 and the AF/FAA Memorandum of Agreement (MOA). The launch providers' processes will be acceptable to provide the SW commander a sufficient level of confidence that launch vehicle performance presents an acceptable risk to launch safety and launch base infrastructure, security, and national security interests.

2.2.1.3. T&E activity. Test activities conducted by DoD and Non-DoD entities on an Major Range and Test Facility Base (MRTFB). Spacelift operations are not T&E activities. The sponsoring agency will perform flight worthiness certification processes. Those processes will be sufficiently robust and acceptable to provide the launch wing commander a sufficient level of confidence that launch vehicle performance presents an acceptable risk to launch safety and launch base infrastructure and security.

2.3. Range.

2.3.1. DoD Responsibilities. AFSPC operates the Launch and Test Range System (LTRS) on the ER and WR to meet launch requirements, ensure launch safety, and safe passage of vehicles to, through, and from space. The primary responsibilities of the ER and WR are outlined in DoDI 3100.12, *Space Support*. In addition, the ranges provide T&E support IAW DoDD 3200.11, *Major Range and Test Facility Base*. T&E support includes ballistic missile testing and aeronautical flight testing. [Attachment 5](#) outlines LTRS management.

2.3.2. Range Use by Non-DoD entities. Per this guidance, range facilities are sized, operated, and maintained primarily for DoD missions, but are also available to all authorized users having a valid requirement for their capabilities.

2.3.2.1. FAA-licensed launch support is conducted under the regulatory authority of the FAA's office of Commercial Space Transportation. AFSPC is allowed to support commercial launch activity under guidance provided in 10 USC § 2276, Commercial space launch cooperation. Commercial T&E users can also request access to the range. When supporting commercial T&E, criteria of Title 10 USC 2681, Use of Test and

Evaluation Installations by Commercial Entities, as implemented by DoDD 3200.11, will be used.

2.3.2.2. National and DoD policy encourage the development of Commercial/FAA-licensed launch operations within the US private sector. To this end, federal agencies are directed to support Commercial/FAA-licensed launch activities with use of launch property and/or launch services that are otherwise not needed for government use. Cooperative involvement between 30 SW and 45 SW with Commercial/FAA-licensed activities helps maintain the competitiveness of the US space industrial base.

2.3.2.3. AFSPC/CC has an inherent legal responsibility to ensure activities on AF ranges/installations are conducted safely, and an explicit responsibility for AF resource protection. Resource protection may be provided through a combination of insurance, indemnification and risk mitigation activities. These obligations are derived from common law and extend to all operations on the range, services provided, and preservation of national security interests.

2.3.2.4. For Commercial/FAA-licensed launches, the FAA has a statutory responsibility for ensuring public health and safety, the safety of property, and national security and foreign policy interests of the United States under 51 USC. The FAA holds the Commercial/FAA-licensed provider responsible for the safety of any launch conducted on an AF range.

2.3.2.5. Agreements (MOU/As, lease/licenses, Commercial Space Operations Support Agreements (CSOSA)/Space Operations Support Agreements (SOSA), etc.) and contracts with Kennedy Space Center (KSC), FAA, and launch agencies will allow AFSPC to exercise trusted partnerships to ensure mutual responsibilities are met in the most efficient manner possible. Services provided by AFSPC in support of Commercial/FAA-licensed activity will be performed IAW Air Force processes and standards to include associated tailoring activities. If service is solely to meet a user requirement, it can be waived IAW user processes.

Chapter 3

ORGANIZATIONAL ROLES AND RESPONSIBILITIES

3.1. Headquarters, Air Force Space Command (HQ AFSPC) Responsibilities.

3.1.1. Commander, Air Force Space Command: AFSPC/CC has overall responsibility and authority for safety, all range operations, and base operating support for operations on ER/WR. Additionally, AFSPC/CC has flight worthiness responsibility for AFSPC missions launching from other ranges.

3.1.1.1. Exercises responsibility for spacelift operations as outlined in [Figure 2.1](#).

3.1.1.2. Delegates authority for safety, range operations, and base operating support elements to the 14AF/CC.

3.1.1.3. Determines whether to FAA license an AFSPC-funded launch activity.

3.1.1.4. AFSPC/CC or AFSPC/CD reviews/approves all staff packages for Orbital Debris Exception Requests IAW [Attachment 4](#).

3.1.2. Directorate of Integrated Air, Space, Cyberspace and ISR Operations (HQ AFSPC, A2/3/6).

3.1.2.1. Coordinates advocacy efforts with appropriate HQ AFSPC and Higher Headquarters (HHQ) to provide necessary resources (equipment, manpower, etc.) to meet, sustain, and evolve AFSPC launch and range capabilities, and to provide support to other external launch customers as required by directive, regulation, and Public Law.

3.1.2.2. Develops and issues an annual Launch Service Delivery Order (LSDO) memorandum to communicate launch service and Multi-Mission Manifest procurement requirements to SMC/CC, with courtesy copies provided to 14 AF/CC and SMC Launch Enterprise Directorate (SMC/LE).

3.1.2.3. Coordinates spacelift operations activities with other stakeholders, including but not limited to other DoD agencies, MRTFB ranges, NRO, Major Commands (MAJCOMs), NASA, Department of Transportation (DoT), Missile Defense Agency (MDA), FAA, and Commercial/FAA-licensed users to identify/mitigate operational conflicts.

3.1.2.4. Supports all AF and NRO launch mishap investigations IAW AFI 91-204, *Safety Investigations and Reports*, AFI 51-503, *Aerospace and Ground Accident Investigations*, and HQ AFSPC direction.

3.1.2.4.1. Funds and supports investigation of SMC-procured LV mishaps.

3.1.2.4.2. Supports NRO-led investigations of payload pre-launch and payload launch-related mishaps not involving the LV.

3.1.2.5. Develops, implements, and reviews standardized policy and guidance to AFSPC units supporting USG and FAA-licensed launches and T&E activities and provides assistance to subordinate units with compliance issues when resolution is beyond their scope and/or resources.

- 3.1.2.6. Coordinates Orbital Debris Mitigation Standard Practices (ODMSP) Exception Requests for AFSPC-procured LV and satellite vehicle (SV) missions IAW [Attachment 4](#).
- 3.1.2.7. Develops, implements, and manages Space Education and Assignment Program (SEA-P) goals, objectives, and policies.
- 3.1.2.8. Develops launch and range requirements through Air Force Capability Development and Joint Capability Integration and Development System (JCIDS) processes IAW AFD 10-6, *Capability Development Guidebook* and CJCSI 3170.01I, *Joint Capabilities Integration and Development Systems* (JCIDS).
- 3.1.2.9. Supports MAJCOM and Implementation Command Science and Technology (S&T) management IAW AFI 63-101_20-101, *Integrated Life Cycle Management* and AFD 61-1, *Management of Science and Technology* for space access (launch and range) capabilities.
- 3.1.2.10. Develops and maintains spacelift architecture products.
- 3.1.2.11. Prepares Hague Code of Conduct (HCOC) pre-launch notifications for transmittal to U.S. Dept of State.
- 3.1.2.12. Conducts Executive Readiness Reviews (ERRs) in coordination with SMC/CC, and 14 AF/CC to provide high level description and/or concerns on AFSPC SV and SMC-procured LV missions when directed by AFSPC/CC.
- 3.1.2.13. Manages LTRS management activities IAW [Attachment 5](#).
- 3.1.2.14. Manages the LTRS Requirements Validation Board (RVB). The LTRS RVB, chaired by HQ AFSPC/A2/3/6SR, with participants from HQ AFSPC/A4UP and HQ AFSPC/SEK occurs monthly to validate LTRS system requests from the wings and SMC Range and Networks Directorate (SMC/RN). This board will consider the need for system updates to meet emerging user needs.
- 3.1.2.15. Requests FAA license applications from DoD (OSD)(P)) for AFSPC review as appropriate.
 - 3.1.2.15.1. Coordinates FAA license applications with 14AF, and SWs to ensure proposed activity does not jeopardize U.S. national security interests or impact SW/CC's inherent authority to protect people, property, and common interests of all range users. 14 AF and SW coordination will be conducted as part of the FAA consultation process IAW 51 USC § 50918 and Code of Federal Regulations.
- 3.1.2.16. Coordinates with HAF/A4 in the management of 2M0 personnel serving within AFSPC.
- 3.1.3. Directorate of Logistics, Engineering and Force Protection (HQ AFSPC, A4)
 - 3.1.3.1. Supports the LTRS RVB
 - 3.1.3.2. Supports LTRS management activities IAW [Attachment 5](#).
- 3.1.4. Directorate of Strategic Plans, Programs, Requirements, and Analysis (HQ AFSPC, A5/8/9)

3.1.4.1. Ensures SV Capability documents (JCIDS documents) are consistent with validated spacelift capability documents.

3.1.4.2. Manages HCOC notification process.

3.1.5. Directorate of Safety (HQ AFSPC/SE)

3.1.5.1. Supports the LTRS RVB.

3.1.5.2. Supports LTRS management activities IAW [Attachment 5](#).

3.1.5.3. Develops AFSPC launch and range safety standardized policy and guidance.

3.2. Space & Missile Systems Center (SMC) Responsibilities.

3.2.1. Commander, Space and Missile Systems Center: SMC/CC has overall responsibility for the acquisition, sustainment, modernization, and deployment of launch and satellite systems and services. Additionally, SMC/CC has responsibility for the acquisition, sustainment, and modernization of the LTRS.

3.2.1.1. Certifies flight worthiness of all SMC-procured SVs and launch systems/services. **(T-2)**

3.2.1.2. Trains, certifies, and appoints an MD for USG launch of SMC-procured spacecraft on SMC-procured launch systems/services. **(T-2)**

3.2.1.3. Assigns on-scene authority for LV and SV processing, integration and launch to the MD for SMC-procured spacecraft on SMC-procured launch systems/services. **(T-2)**

3.2.1.3.1. The MD will monitor SV and LV processing and ensure systems meet space flight worthiness (SFW) criteria. **(T-2)**

3.2.1.3.2. The MD will ensure all LV and SV anomalies affecting flight worthiness are successfully mitigated/resolved. **(T-2)**

3.2.1.3.3. The MD will participate in Flight Readiness Review (FRR), presenting it to the SMC/CC. **(T-2)**

3.2.1.3.4. The MD will participate in the LRR process. **(T-2)**

3.2.1.3.5. The MD will ensure a thorough Post-Flight Review is conducted for every mission after launch to assess the performance of the LV, satellite, and ground systems. **(T-2)**

3.2.1.4. Forwards all ODMSP exception requests to HQ AFSPC A2/3/6 IAW [Attachment 4](#). **(T-2)**

3.2.1.5. Ensures SMC-procured SVs are compatible with validated spacelift capabilities and compliant with standard interfaces and dual integration policies. **(T-2)**

3.2.2. Engineering Directorate (SMC/EN)

3.2.2.1. Provides standardized SFW criteria ISO SV mission assurance (SVMA), to include requirements at launch sites. **(T-2)**

3.2.3. Launch Enterprise Directorate (SMC/LE)

3.2.3.1. Develops standardized LV mission assurance (LVMA) and fleet surveillance requirements for SMC-procured launch systems/services. (T-2)

3.2.3.2. Coordinates with and assigns LV program execution responsibilities to the 30th SW/CC and 45 SW/CC via letters of assignment (LOAs). Consults with and provides signed copies of LOAs to HQ AFSPC A2/3/6 and 14 AF A3/6. (T-2)

3.2.3.3. Authorizes the use of locally developed procedures for Rocket Systems Launch Program (RSLP) operations IAW [Attachment 6](#). (T-2)

3.2.3.3.1. Maintains copies of as-run-procedures for historical reference for the life of the program. (T-2)

3.2.3.4. Ensures achievement of validated capability and performance requirements. (T-2)

3.2.3.4.1. Tracks and reports, by mission, achievement of validated capability and performance requirements. (T-2)

3.2.3.5. Accomplishes Multi-mission Manifest Operations (MMO) IAW [Attachment 7](#). (T-2)

3.2.3.5.1. Ensure assigned personnel have appropriate security clearances, information access, and equipment to support all Multi-Mission manifest classification requirements. (T-2)

3.2.3.5.2. Coordinates with interagency and industry partners to identify launch opportunities and candidate payloads. (T-2)

3.2.3.5.3. Monitors SV readiness throughout all phases of Multi-Mission integration. (T-2)

3.2.4. Range and Networks Division (SMC/RN)

3.2.4.1. Modernizes and sustains the LTRS. (T-2)

3.2.4.2. Administers the Operations & Maintenance Contract. (T-2)

3.2.4.3. Supports LTRS management activities IAW [Attachment 5](#). (T-2)

3.2.4.4. Measures or accomplishes metrics as defined in approved requirements documents. (T-2)

3.2.5. SV System Program Offices (SPOs)

3.2.5.1. Coordinates with and assigns SV program execution responsibilities to the 30 SW and 45 SW via LOAs. Consults with and provides signed copies of LOAs to HQ AFSPC A2/3/6 and 14 AF A3/6. (T-2)

3.2.5.2. Supports MMO IAW [Attachment 7](#), (T-2)

3.3. 14th Air Force Responsibilities.

3.3.1. 14 AF/CC is responsible to AFSPC/CC for range operations, base operating support, and launch safety for operations on ER/WR.

3.3.2. Delegates authority for safety, range operations, and base operating support elements to the 30 SW/CC and 45 SW/CC. (T-2)

- 3.3.3. Coordinates with HQ AFSPC A2/3/6 and SWs on FAA license applications. (T-2)
- 3.3.4. Endorses all ODMSP Exception Requests from SMC IAW [Attachment 4](#). (T-2)
- 3.3.5. Standardizes LCG and range operational procedures. (T-2)
- 3.3.6. Establishes frequency mitigation processes between launch wings and other agencies (e.g. Space Warning Squadrons, Joint Navigation Warfare Center, JSPOC, etc.) and ensures the 30 SW and 45 SW follow proper frequency mitigation procedures, as appropriate. See frequency mitigation process in [Attachment 3](#). (T-2)
- 3.3.7. Provides conjunction assessment data to the appropriate launch and/or launch and systems wing for use in developing collision avoidance analysis. This requirement exists for all launch, reentry, and fly-back activity by the ER and WR. (T-2)
- 3.3.8. Supports HQ AFSPC HCOG notification process. (T-2)
- 3.3.9. Supports LTRS management activities IAW [Attachment 5](#). (T-2)
- 3.3.10. Oversees Operational Review Board process. (T-2)
- 3.3.11. Consults with SMC on LV and SV letters of Assignment (LOAs) (T-2)

3.4. 30th and 45th Space Wing Responsibilities.

- 3.4.1. 30th and 45th Space Wing Commanders.
 - 3.4.1.1. The SW/CC is accountable to 14 AF/CC for launch and range operations IAW [Attachment 2](#). As the range owner/operator and provider of services, the SW/CC has an obligation to perform with a common law duty of care and protect AF resources through a combination of insurance, indemnification and/or risk mitigation activity.
 - 3.4.1.1.1. An LRR will be conducted prior to each USG, T&E, and Commercial/FAA-licensed launch. See [Attachment 2](#) for information on LRR attendance and discussion topics. (T-2)
 - 3.4.1.2. Accountable to SMC program offices for LVMA/SVMA in support of SMC SFW certification for NSS missions and for fleet surveillance and New Entrant Certification activities during applicable Civil and Commercial missions as identified by SMC through LOAs. (T-2)
 - 3.4.1.3. Ensures SW resources execute responsibilities as assigned IAW formal agreements (e.g. LOAs, MOAs, CSOSAs, etc.). For Commercial/FAA-licensed launch activity the wing will provide agreed-upon support to the launch provider, implement the terms and conditions of the land use agreements with the commercial launch operations, and leverage the FAA-licensing process to meet obligations. (T-2)
 - 3.4.1.4. Coordinates with 14 AF on FAA license applications. Additionally, the SW/CC can engage directly with the FAA as the consultation process is a continuous activity from time of license submittal through approval and ultimately launch. (T-2)
 - 3.4.1.5. Publishes a SW 5-yr strategic master plan including infrastructure management. (T-2)

- 3.4.1.5.1. Provides government and contractor tenants the opportunity to coordinate on SW strategic planning including modernization efforts and land use agreements. (T-2)
- 3.4.1.5.2. Updates strategic master plan annually. (T-2)
- 3.4.1.6. Operates the range in support of USG and commercial launch activity IAW DoDI 3100.12 and DoDD 3230.3. (T-0)
- 3.4.1.7. Operates the range as part of the DoD MRTFB by providing government facilities and range services to all authorized T&E users IAW DoDD 3200.11 and DoDI 3200.18. (T-0)
- 3.4.1.8. Ensures range readiness for launch operations and verifies operations are safe to proceed. For flyback to AF property, the SW/CC has a responsibility to ensure the readiness of the installation to receive the flyback portion of launch and retains the authority to provide a no-go, regardless of launch location. (T-2)
- 3.4.1.9. Ensures operational support is provided to authorized programs and range users as defined by the Universal Documentation System (UDS) or other processes as agreed to between the launch wing and range user. (T-2)
- 3.4.1.10. Approves mission flight rules for ER/WR USG and T&E operations. Reviews/approves mission rules for Commercial/FAA-licensed operations IAW launch provider's agreement with the range. (T-2)
- 3.4.1.11. Enforces Collision Avoidance (COLA) requirements as provided in AFI 91-217, *Space Safety and Mishap Prevention Program*. Closes the range for offending activity during conjunction periods. (T-2)
- 3.4.1.12. Develops local range support contracts in coordination with SMC/RN, contracting, and other support functions. (T-2)
- 3.4.1.13. Ensures launch telemetry and trajectory information is provided to Air Force Spectrum Management Office (AFSMO) and HQ AFSPC A2/3/6 65-days in advance of approved launch date for all missions on ER/WR. (T-0)
 - 3.4.1.13.1. Ensures updated or new information provided within the 65-day window is provided to AFSMO and HQ AFSPC A2/3/6 as soon as possible. (T-0)
- 3.4.2. Launch Group (LCG) Commander Responsibilities (**LCG/CC responsibilities will be performed by Operations Group (OG) Commander following consolidation of LCGs and OGs**).
 - 3.4.2.1. Responsible and accountable to SW/CC for LVMA/SVMA in support of SMC SFW certification for NSS missions and for fleet surveillance and New Entrant Certification activities during applicable Civil and Commercial missions as identified by SMC through LOAs. (T-2)
 - 3.4.2.1.1. Assesses Launch Service Provider (LSP) technical risk and adequacy of launch site procedures consistent with SMC LOAs. (T-2)
 - 3.4.2.1.2. Monitors, assesses, and reports LSP adherence with technical procedures, general aerospace maintenance practices, and proper use of special tools and

- equipment during LV/SV processing, facility and infrastructure activities IAW SMC LOAs. (T-2)
- 3.4.2.1.3. Ensures protection of critical LV/SV hardware, ground support equipment (GSE) and launch site infrastructure through engineering analysis consistent with SMC LOAs. (T-2)
- 3.4.2.2. Identifies, reports, coordinates, and facilitates timely resolution of impediments to mission success or the launch schedule for issues under their control. (T-2)
- 3.4.2.3. Supports safety, security, environmental compliance, and resource protection for LV/SV processing and launch infrastructure facilities. (T-2)
- 3.4.2.4. Integrates LV, SV, facility, and infrastructure operations on the installation ISO Spacelift missions. (T-2)
- 3.4.2.5. Coordinates the use of locally developed RSLP procedures IAW [Attachment 6](#). (T-2)
- 3.4.2.6. For missions supported by the LCG, participates in Wing LRR and reports (as applicable) LV, SV, and facilities readiness. See [Attachment 2](#) for information on LRR and discussion items. (T-2)
- 3.4.3. Mission Support Group (MSG) Commander Responsibilities
- 3.4.3.1. Supports Range operations as specified in [Attachment 2](#). (T-2)
- 3.4.3.2. Conducts Real Property (RP) and Real Property Installed Equipment (RPIE) to support spacelift operations. (T-2)
- 3.4.3.3. Ensures early participation of Explosive Ordnance Disposal (EOD), Emergency Management, and Fire Emergency Services in the launch planning process. (T-2)
- 3.4.3.4. Provides utilities to launch service providers as identified in appropriate agreements. (T-2)
- 3.4.4. Operations Group (OG) Commander Responsibilities (LCG/CC responsibilities will be performed by OG/CC following consolidation of LCGs and OGs).
- 3.4.4.1. Conducts range operations IAW [Attachment 2](#).
- 3.4.4.2. Supports LTRS management IAW [Attachment 5](#). (T-2)
- 3.4.4.3. Supports the development of range support contracts in coordination with contracting and other support functions. (T-3). **Waiver authority for this requirement cannot be delegated lower than SW/CV.**
- 3.4.4.4. Ensures a structured training and qualification program is developed, documented and maintained for key personnel supporting DoL operations. Ensure inclusion of procedures to identify any health or medical condition that could impair performance of mission duties. (T-2)
- 3.4.4.5. Supports incremental readiness reviews identified by range users, as required. (T-2)
- 3.4.4.6. Supports FRR, as required. (T-2)

- 3.4.4.7. Ensures range, weather, and range safety ground system operational status is reported for USG and T&E activity (See [Attachment 2](#)). For Commercial/FAA-licensed activity, implement user agreements (e.g. land use, CSOSA etc.) terms and conditions with the licensed launch operator, and provide status of requested range services. **(T-2)**
- 3.4.4.8. Develops range operations procedures in support of all USG, T&E and Commercial/FAA-licensed operations as requested by the range user. **(T-2)**
- 3.4.4.9. Provides operational support to authorized programs and range users as defined through the UDS process or other instructions, plans, procedures, and processes as agreed to between the launch wing and range user. **(T-2)**
- 3.4.4.10. Serves as the wing single point of contact for range scheduling managing all aspects of range scheduling to include asset maintenance status. **(T-2)**
- 3.4.4.11. Manages range land, air, rail, and sea clearance issues for USG and T&E launches and as requested for Commercial/FAA-licensed activity. **(T-2)**
- 3.4.4.12. Ensures launch specific frequency mitigation procedures are properly coordinated and in place prior to launch, as required, IAW [Attachment 3](#). **(T-2)**
- 3.4.4.13. Provides functional oversight and direction to the space wing Military Radar Unit (MRU). **(T-2)**
- 3.4.4.14. Provides a Program Support Manager (PSM) for users as the primary POC for range support, including radar, telemetry, optics, command, communication, data processing/transfer/products and other support functions. **(T-2)**
- 3.4.4.15. Coordinates weather operations requirements with USG, T&E and Commercial/FAA-licensed launch agencies as requested by the range user. **(T-2)**
- 3.4.4.16. Develops launch weather operations procedures in support of all USG and T&E launches and, as requested, for Commercial/FAA-licensed launches. **(T-2)**
- 3.4.4.17. Evaluates contractor performance and execution of day-to-day Operations and Maintenance (O&M) of the range. **(T-2)**
- 3.4.4.18. Provides range engineering support for Integrated Crew Exercises (ICEs), Mission Dress Rehearsals (MDRs), and countdown. Determine instrumentation status, commit instrumentation for launch support, and direct resolution of instrumentation anomalies to ensure range systems are available to meet requirements in each launch Operations Directive. **(T-2)**
- 3.4.4.19. Advises SW/CC on acceptance of new or modified range systems for operational use and approves shut-down of superseded operational range systems. **(T-3)**. **Waiver authority for this requirement cannot be delegated lower than SW/CV.**
- 3.4.4.20. Provides technical management function for daily operations, maintenance, and sustainment of range infrastructure. **(T-2)**
- 3.4.4.21. Coordinates all contractor procedures that impact range operations. **(T-2)**
- 3.4.5. Chief of Wing Safety (SW/SE)

- 3.4.5.1. Serves as the senior safety advisor. **(T-3). Waiver authority for this requirement cannot be delegated lower than SW/CV.**
- 3.4.5.2. Coordinates on key unit operations and training documentation. **(T-2)**
- 3.4.5.3. Ensures appropriate personnel are certified as Interim Safety Board (ISB) President. **(T-2)**
- 3.4.5.4. Provides personnel for contingency response support/Emergency Operations Center (EOC) duties. **(T-2)**

JOSEPH T. GUASTELLA, JR.
Major General, USAF
Director of Integrated Air, Space,
Cyberspace and ISR Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

National Space Policy, 21 Nov 13

10 USC 2276 *Commercial Space Launch Cooperation*, 3 Jan 16

10 USC 2681 *Use of Test and Evaluation Installations by Commercial Entities*, 3 Jan 07

14 CFR 417 *Launch Safety*, 1 Jan 11

51 USC 50901 et seq--*Commercial Space Launch Activity*

United States Government Orbital Debris Mitigation Standard Practices

Webb-McNamara, *Agreement Between The DoD and NASA Regarding Management of The Atlantic Missile Range of DoD and The Merritt Island Launch Area of NASA*, 17 Jan 63

CJCSI 3170.01I, *Joint Capabilities Integration and Development System*, 23 Jan 15

DoDD 3200.11, *Major Range and Test Facility Base*, 27 Dec 07

DoDD 3230.3, *DoD Support for Commercial Space Launch Activities*, 14 Oct 86

DoDI 3100.12, *Space Support*, 14 Sep 2014

DoDI 3200.18, *Management and Operation of the Major Range and Test Facility Base*, 1 Feb 10

AFPD 10-6, *Capability Development Guidebook*, 06 Nov 13

AFPD 13-6, *Space Policy*, 13 Aug 13

AFPD 61-1, *Management of Science and Technology*, 18 Aug 11

AFI 10-1211, *Space Launch Operations*, 17 Jul 06

AFI 21-214, *Space Launch Maintenance and Mission Assurance*, 22 Sep 14

AFI 33-360, *Publications and Forms Management*, 01 Dec 15

AFI 51-503, *Aerospace and Ground Accident Investigations*, 14 April 15

AFI 63-101_20-101, *Integrated Life Cycle Management*, 09 May 17

AFI 91-204, *Safety Investigations and Reports*, 12 Feb 14

AFI 91-204_AFSPCSUP, *Safety Investigations and Reports*, 18 Dec 15

AFI 91-217, *Space Safety and Mishap Prevention Program*, 11 Apr 14, Incorporating Change 1, 25 January 2017

AFI 99-103, *Capabilities Based Test and Evaluation*, 06 Apr 17

AFMAN 33-363, *Management of Records*, 01 Mar 08

AFSPCI 99-103, *Capabilities Based Test and Evaluation of Space and Cyberspace Systems*, 29 Dec 10

AFSPCMAN 91-710V1-V7, *Range Safety User Requirements Manual*, 3 Nov 16

AFSPCMAN 91-711, *Launch Safety Requirements for AFSPC Organizations*, 1 Feb 07

AFGSCI 99-102, *ICBM Operational Test and Evaluation (OT&E)*, 2 Mar 11

RCC 501-12, *Universal Documentation System*, Jun 12

Abbreviations and Acronyms

14 AF—14 Air Force

AF—Air Force

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AFRIMS—Air Force Records Information Management System

AFSMO—Air Force Spectrum Management Office

AFSCN—Air Force Satellite Control Network

AFSPC—Air Force Space Command

AFSPCI—Air Force Space Command Instruction

AFSPCMAN—Air Force Space Command Manual

AFSS—Autonomous Flight Safety System

ART—Architecture Review Team

CC—Commander

CCAFS—Cape Canaveral Air Force Station

CD—Deputy Commander

CFR—Code of Federal Regulations

CLSRB—Current Launch Schedule Review Board

COLA—Collision Avoidance

CSOSA—Commercial Space Operations Support Agreement

DIRLAUTH—Direct Liaison Authority

DNRO—Director, NRO

DoD—Department of Defense

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

DoL—Day of Launch

DoT—Department of Transportation

EELV—Evolved Expendable Launch Vehicle

ELS—Executable Launch Schedule
EOC—Emergency Operations Center
EOD—Explosive Ordnance Disposal
ER—Eastern Range
ERR—Executive Readiness Review
ERRB—Enhanced Requirements Review Board
ESPA—EELV Secondary Payload Adapter
FAA—Federal Aviation Administration
FRR—Flight Readiness Review
FTS—Flight Termination System
GOSG—General Officer Steering Group
GSE—Ground Support Equipment
HAF—HQ Air Force
HCOC—Hague Code of Conduct
HHQ—Higher Headquarters
HQ—Headquarters
IAW—In Accordance With
ICE—Integrated Crew Exercise
ICBM—Intercontinental Ballistic Missile
ILS—Integration and Logistics Support
IMMC—Integrated Multi-Mission Carrier
IPT—Integrated Product Team
JCIDS—Joint Capability Integration and Development System
JFSCC—Joint Force Space Component Commander
JSpOC—Joint Space Operations Center
JSTO—Joint Space Tasking Order
KSC—Kennedy Space Center
LCC—Launch Commit Criteria
LCG—Launch Group
LDPE—Long Duration Propulsive ESPA
LE—Launch Enterprise Directorate
LISC—LTRS Integrated Support Contract

LOA—Letter of Assignment
LRR—Launch Readiness Review
LSDO—Launch Service Delivery Order
LSP—Launch Service Provider
LTRS—Launch and Test Range System
LV—Launch Vehicle
LVMA—Launch Vehicle Mission Assurance
LWO—Launch Weather Officer
LWT—Launch Weather Team
MAJCOM—Major Command
MD—Mission Director
MDA—Missile Defense Agency
MDR—Mission Dress Rehearsal
MMO—Multi-Mission Manifest Office
MOA—Memorandum of Agreement
MOU—Memorandum of Understanding
MMC—Multi-Mission Carrier
MRTFB—Major Range and Test Facility Base
MRU—Military Radar Unit
MSG—Mission Support Group
NASA—National Aeronautics and Space Administration
NOG—Network Operations Group
NRO—National Reconnaissance Office
NSS—National Security Space
OD—Operations Director
ODMSP—Orbital Debris Mitigation Standard Practices
OG—Operations Group
O&M—Operations and Maintenance
PIWG—Product Improvement Working Group
PLS—Planning Launch Schedule
PMR—Program Management Review
PSM—Program Support Manager

RCO—Range Control Officer
RE—Range Engineer
RICT—Range Integrated Concept Team
RIMM—Range Integrated Management Meeting
RITT—Range Integrated Test Team
RMA—Reliability Maintainability and Availability
ROC—Range Operations Commander
ROPS—Range Operations Squadron
RN—Range and Networks Directorate
RP—Real Property
RPIE—Real Property Installed Equipment
RSLP—Rocket Systems Launch Program
RVB—Requirements Validation Board
S&T—Science and Technology
SDAR—Space Debris Assessment Report
SE—Safety
SEA-P—Space Education and Assignment Program
SECDEF—Secretary of Defense
SEIT—Systems Engineering, Integration, and Test
SFW—Space Flight Worthiness
SIB—Safety Investigation Board
SMC—Space and Missile Systems Center
S/MFCO—Senior/Mission Flight Control Officer
SOSA—Space Operations Support Agreement
SPO—System Program Office
SSG—Senior Steering Group
STP—Space Test Program
SV—Satellite Vehicle
SVMA—Satellite Vehicle Mission Assurance
SW—Space Wing
SWS—Space Warning Squadron
T&E—Test and Evaluation

UDS—Universal Documentation System

US—United States

USAF—United States Air Force

USC—United States Code

USG—United States Government

VAFB—Vandenberg Air Force Base

WR—Western Range

WS—Weather Squadron

Terms

Autonomous Flight Safety System (AFSS)—An on-board flight computer using pre-established, programmed mission rules to determine if the launch vehicle poses an unacceptable hazard to people or property and will initiate required actions to mitigate risk.

Base Operating Support—Base operating support includes traditional installation support elements such as security, fire protection, disaster control, etc., required to provide, protect, and maintain facilities and supporting infrastructure.

Certification Maintenance—Surveillance of certified LSP activities to verify the risk baseline has not significantly changed from the baseline at the time of certification.

Commercial/FAA-licensed Launch—Activity licensed by the FAA. This includes activity required to prepare, conduct, or recover from a launch action (to include such activity as a static fire, engine test, booster assembly, NASA's Commercial Resupply Program, etc.) when requesting services, commodities, or resources from AFSPC under the provisions of 51 USC and/or 10 USC § 2276.

Current Launch Schedule Review Board (CLSRB)—A semi-annual forum chaired by 14 AF/CC and attended by senior officers, program managers and commercial representatives from the launch community. The purpose of the CLSRB is to review resource, satellite and launch assessments, prioritize launches and approve the launch schedule.

Eastern Range (ER)—The ER is part of the National Launch Range facilities, operated by the 45th Space Wing, part of Air Force Space Command, and located at Patrick Air Force Base, Florida; the range includes the operational launch and base support facilities located at Cape Canaveral Air Force Station, Florida; owned or leased facilities on downrange sites such as Ascension; as well as the Jonathan-Dickson Missile Tracking Annex (Jupiter, Florida), and in the context of launch operations, the Atlantic Ocean. For reentries/flyback at the ER, the ER may be expanded to involve the land, sea and air space within the reach of the RV during its descent until it impacts or is recovered. Range management activities are concentrated at Patrick AFB, Florida. Launch vehicle and payload prelaunch and launch activities are concentrated at Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center (KSC), and miscellaneous outlying support locations. Launch activities conducted by ER personnel operating outside the geographical limits described above may occur under DoD or USAF direction or under the auspices of agreements made by these agencies. In such cases, the term ER is expanded to

include prelaunch, recovery, launch area, recovery area and impact area. (AFSPCMAN 91-710V1 para 1.3.1.)

Fleet Surveillance—Surveillance of commercial and civil activities for the purpose of maintaining awareness of issues that intersect or may intersect EELV flight worthiness or other government mission assurance requirements for certified EELV and New Entrant Launch Service Providers.

Flight Readiness—Assessment of the ability of the entire launch system [LV/SV, critical facilities/infrastructure, range systems, and Aerospace Ground Equipment (AGE)] to meet the current launch schedule.

Flight Readiness Review (FRR)—Provides SMC/CC with hardware and software mission status for the LV, the satellite, and/or critical ground systems, as well as associated interfaces. Required for all missions where the SMC/CC is responsible for the certification of the mission, LV, satellite or critical ground system, and FRR is presented to the SMC/CC or a designated representative. The briefing takes place following SV and LV integration.

Flight Worthiness—Measures the degree to which a spacecraft, LV, or critical ground system, as constituted, has the capability to perform its mission with the confidence that significant risks are known and deemed acceptable.

Flight Worthiness Certification—Certification made by a responsible range user to the space wing commander, acting on behalf of the AFSPC/CC, to ensure the range user has confidence that launch vehicle, spacecraft, and ground system risks have been resolved, or are known and deemed acceptable. Launch vehicle mission assurance (LVMA) and space vehicle mission assurance (SVMA) are used to support flight worthiness certification.

Flyback—Return of a booster during flight phase for recovery and potential reuse. Flyback is a segment of launch. For risk and approval the segment of flight associated with launch will be considered a contiguous element of the launch activity. Flyback is different from reentry, which requires return from a sustainable orbit.

Integration—Engineering analyses, studies and associated testing and operations necessary to support mission objectives.

Integrated Multi-Mission Carrier (IMMC)—Equipment holding multiple SVs in a tested and flight-ready configuration, including mechanical and avionics hardware necessary to interface the Multi-Mission carrier to an LV. It may or may not include equipment for independent propulsion and may or may not be a separating space vehicle itself.

Launch Activity—Activity necessary to process, prepare, place, or attempt to place, a launch vehicle and its payload, if any, in a suborbital trajectory, in Earth orbit in outer space, or otherwise in outer space. This includes static fire, booster assembly, pre-launch readiness assessments, dress rehearsals, etc.

Launch Agency—USG entity sponsoring a launch activity. The USG organization is responsible for necessary approvals and requests.

Launch Mishap—A mishap occurring during launch vehicle operations, including upper stages. This includes payloads that do not obtain the intended orbit or range safety systems failures.

Launch Provider—The contractor responsible for requesting a license and range SW support on a Commercial/FAA-licensed launch activity. The FAA holds the launch provider accountable for services and actions performed IAW the licensing process.

Launch Readiness Review (LRR)—Assessment of both the ability to meet the mission design requirements and the current launch schedule based on the sum of flight worthiness and flight readiness.

Launch Safety—Safety involving risks to the general public, personnel on the installation, and protection of resources of the United States or foreign countries and/or their property.

Launch Services—Activities involved in the preparation of a launch vehicle and its payload for launch and the conduct of a launch. (51 USC § 50902(6))

Launch Vehicle Mission Assurance (LVMA)—LVMA is a technical and management process rigorously, continuously, and iteratively employed over the life-cycle of a launch system (mission conception to space vehicle separation) to maximize mission success. LVMA encompasses system engineering, risk management, quality assurance, and program management by an experienced, stable launch agency team. LVMA is achieved through integrated developmental processes and/or independent technical assessment and requires expenditures commensurate with the criticality of the mission and the consequences of failure. LVMA includes new entrant certification, certification maintenance, and fleet surveillance.

Launch and Test Range System (LTRS)—The current program name for the combined capabilities of the ER, headquartered at Patrick AFB in Florida and the WR, headquartered at Vandenberg AFB in California. The system provides the following distinct capabilities to support spacelift and T&E missions: Planning and Scheduling, Range Safety, Vehicle Tracking and Assessment, Positive Control, Communications, Weather, Area Surveillance, Data Handling, and Timing and Sequencing.

Mission Assurance—An integrated engineering-level assessment of analysis, production, verification, validation, operation, maintenance, and problem resolution processes performed over the life cycle of a program by which an operator/user determines that there is an acceptable level of risk to employment of a system or end item to deliver an intended capability in an intended environment. The objective of the assurance process is to identify and mitigate design, production, test and operational deficiencies that could impact mission success.

Major Range and Test Facility Base (MRTFB)—The designated core set of DoD Test and Evaluation (T&E) infrastructure and associated workforce that must be preserved as a national asset to provide T&E capability to support the DoD acquisition system.

National Security Space (NSS)—The space-related systems, services, capabilities, and associated information networks of the DoD and the national intelligence community, or other space-related systems that support U.S. national security and enable defense and intelligence operations during times of peace, crisis, or conflict.

National Security Space Launch—Launch systems, services, and capabilities of the DoD that support US national security and enable defense and intelligence operations during times of peace, crisis, or conflict. When applying this term to metrics, further delineation is required and must be stated on metrics products.

New Entrant Certification—Systems engineering process used by SMC to certify the capability of LSPs and launch systems to fulfill the requirements of the EELV program.

Range—The term “range,” when used in a geographic sense, means a designated land or water area that is set aside, managed, and used for range activities of the Department of Defense. Such term includes the following: (A) Firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, electronic scoring sites, buffer zones with restricted access, and exclusionary areas. (B) Airspace areas designated for military use in accordance with regulations and procedures prescribed by the Administrator of the Federal Aviation Administration. (10 USC § 101(e)(1)). In a non-geographic sense, “range” includes Eastern and/or Western Range assets.

Range Operations—Any procedure that requires the use of range resources (instrumentation, collision avoidance processes, weather systems, etc). The execution of operations focused on efficient and coordinated employment of all range assets and processes to enable the safe and timely launch of payloads and test vehicles.

Range User—The responsible and accountable organization for range activity. In the case of USG launch activity it is the launch agency, for Commercial/FAA-licensed launch activity it is the contract launch provider, and for T&E activity it is the test agency.

Real Property (RP)—Land, buildings, structures, utilities, improvements and appurtenances thereto. Includes equipment attached to, and made part of, buildings and structures but not movable equipment. Primarily consisting of facilities and other non-equipment support system infrastructure.

Real Property Installed Equipment (RPIE)—Government-owned or leased support equipment, apparatus and fixtures that are essential to the function of the real property and permanently attached to, integrated into or on government-owned or leased property.

Resource Protection—The protection of flight hardware, facilities, support equipment, or other property from damage due to mishaps.

SMC-Procured Launch Service—Space Launch capability provided by a contractor to place a satellite into a specified orbit. The contractor retains ownership of all flight and ground hardware, engineering analyses, processes, and readiness decisions except as provided under contract.

Space Vehicle Mission Assurance (SVMA)—SVMA is a technical and management process rigorously, continuously, and iteratively employed over the space vehicle life cycle, i.e. all activities associated with the development, testing and operation of space vehicles in orbit or deep space, to include spacecraft design, orbital operations, reentry, recovery and disposal elements. SVMA encompasses system engineering, risk management, quality assurance, and program management by an experienced, stable space vehicle agency team. SVMA is achieved through integrated developmental processes and/or independent technical assessment and requires expenditures commensurate with the criticality of the mission and consequences of failure.

Spacelift—The ability to deliver satellites, payloads, and material into space. Assured access to space includes spacelift operations and range operations.

Test Agency—The accountable agency conducting T&E activity on the range.

Test and Evaluation (T&E) Activity—T&E activity conducted by DoD and non-DoD organizations on a Major Range and Test Facility Base (MRTFB). Examples of this activity are ballistic missile tests, Missile Defense Agency operational test, and aeronautical test activity. This does not include space launch operations.

United States Government (USG) Launch—Launch activity by and for the government to include AFSPC, National Reconnaissance Office (NRO), Civil, and other DoD missions that do not occur under an FAA license. These are launches that the USG chooses to sponsor or cannot license as a result of being so substantially involved to effectively direct or control the launch (DOJ Decision on Licensing Under the Commercial Space Launch Act, 15 Nov 1990).

Universal Documentation System (UDS)—The UDS provides a common language and format for stating program, mission, and test requirements and supporting documentation.

Western Range (WR)—The WR consists of the launch head at Vandenberg AFB (VAFB), California and extends along the West Coast of the continental US westward through the Pacific and Indian Oceans. For reentries/flybacks intended at the WR, the WR may be expanded to involve the land, sea and air space within the reach of the RV during its descent from orbit until it impacts or is recovered. Range management activities as well as launch and prelaunch processing activities are concentrated at VAFB in California. Launch and reentry activities conducted by WR personnel operating outside the geographical limits described above may occur under DoD or USAF direction or under the auspices of agreements made by those agencies. In such cases, the term WR is expanded to include these situations and apply, as required, to the specific mission, launch, recovery, launch area, recovery area and impact area.

Attachment 2

LAUNCH ACTIVITY EXECUTION

A2.1. Launch Readiness Review Assessment.

A2.1.1. The LRR is mandatory for USG ,T&E, and Commercial/FAA licensed launches. **(T-2)**. The SW/CC will determine the content of the LRR. The following are recommended attendees:

A2.1.1.1. SW/CC (chairs the LRR)

A2.1.1.2. MD

A2.1.1.3. SMC/LE, as applicable

A2.1.1.4. SV program office for appropriate missions

A2.1.1.5. OG/CC

A2.1.1.6. LCG/CC for missions supported by the LCG

A2.1.1.7. SW/SE

A2.1.1.8. MSG/CC

A2.1.1.9. FAA Representative for Commercial/FAA-licensed launches

A2.1.1.10. Contractor Representatives (e.g. Launch service provider, Range O&M, SV provider, etc)

A2.1.1.11. Civil Agency Representative for Civil missions

A2.1.2. The following items are recommended for the LRR:

A2.1.2.1. Launch Personnel. Review personnel status of key launch positions to include the certification status.

A2.1.2.2. Mission Description.

A2.1.2.3. Schedule. Identify all major milestones of all missions leading up to launch and affecting the scheduled launch.

A2.1.2.4. Launch Facility/Platform. Review the status and any remaining open items or major discrepancies.

A2.1.2.5. Launch Vehicle. Review the status and any remaining open items or major discrepancies.

A2.1.2.6. Upper Stage (if applicable). Review the status and any remaining open items or major discrepancies.

A2.1.2.7. Satellite/Payload. Review the status and any remaining open items or major discrepancies.

A2.1.2.8. Weather Support. Review required weather support. Present DoL forecast (and back-up attempt forecast) to include standard weather parameters and probability of violating weather launch commit criteria (LCC) values, and as applicable; terminal area,

landing site and any special weather considerations (i.e. tropical storm threats, space environmental impacts, weather equipment/communications outages, etc.)

A2.1.2.9. Range Support. Address range configuration and status of all supporting range assets and contingency plans or work-arounds. Identify "mandatory" and "required" range and safety instrumentation/support and waiver authority.

A2.1.2.10. Network Support (if applicable). Review readiness status of the Air Force Satellite Control Network (AFSCN), mission control centers and abort/recovery/contingency plans. Coordinate with 50 Space Wing's Network Operations Group (50 NOG).

A2.1.2.11. Infrastructure. Status of critical power communications, etc.

A2.1.2.12. Launch Safety. Present the launch hazard assessment, including an overview of the risk assessments (debris, toxics, and blast overpressure), as applicable. Announce the launch mishap investigation authority. Report results of launch system safety waiver review.

A2.1.2.13. Contingency Response Support. Provide readiness status of EOC, its positioning, and key personnel. Include, by name, the ISB President and agency having mishap investigation authority. Review readiness status of the security forces and applicable waivers/deviations to security requirements.

A2.1.2.14. Countdown Summary. Review key milestones in the launch vehicle, satellite, and range countdowns for potential problem areas and hold points as well as any known collision avoidance launch countdown holds in the launch window.

A2.1.2.15. Open Action Items. Address the status of all applicable open action items (previous lessons learned, Operations Review Boards, etc.) related to the affected operation.

A2.1.2.16. Readiness. The MD, OG/CC, LCG/CC, MSG/CC, SW/SE certify readiness to proceed.

A2.2. Day of Launch (DoL) Positions.

A2.2.1. DoL position requirements depend on many factors. **Table A2.1** provides guidance for appropriate utilization of personnel but cannot anticipate every situation. Careful coordination between the range, range user, payload organization, and other government agencies will establish common expectations. When launching from and/or returning to AF property, AF representatives are essential to protect national interests and ensure proper government assessment/acceptance of inherent launch risk. SWs should endeavor to present as common presentation of DoL positions as possible based on user, provider, and launch category. **Paragraph A2.3.** contains Autonomous Flight Safety System (AFSS) implementation requirements for activity on AFSPC ranges.

Table A2.1. DoL Positions.

	USG & T&E		FAA Licensed (Commercial) ¹	
	AF Command Destruct	AFSS	AF Command Destruct	AFSS
SW/CC²	Mandatory	Mandatory	Mandatory	Optional
OD	Optional	Optional	Optional	Optional
SE	Optional	Optional	Optional	Optional
MD	Mandatory	Mandatory	N/A	N/A
S/MFCO	Mandatory	N/A	Mandatory	N/A
RCO	Mandatory	Optional	Mandatory	Optional
ROC	Mandatory	Mandatory	Mandatory	Mandatory
RE	Mandatory	Mandatory	Mandatory	Optional
LWO³	Mandatory	Mandatory	As Requested	As Requested
Area Surveillance³	Mandatory	Mandatory	As Requested	As Requested

Note 1—If on an AF Range as defined by 10 USC
 Note 2—Exercises launch decision authorities for USG and traditional Flight Termination System (FTS) commercial missions; will not exercise launch decision authority for AFSS commercial missions but will designate a person to provide Range readiness. Mandatory indicates the position is required. SW/CC will determine which optional positions are required for each mission. **(T-2)**
 Note 3—“As Requested” positions will be provided by the AF only when requested by the launch provider. If not requested from the AF, the launch provider will provide their own weather and

A2.2.2. Space Wing Commander (SW/CC) Responsibilities:

A2.2.2.1. The SW/CC (or designee) exercises launch decision authority for USG and T&E launches and accepts necessary risk for DoL activities. The SW/CC (or designee) selects key personnel to serve as on console advisors and will determine which positions listed as “optional” in **Table A2.1.** are required. **(T-2)**

A2.2.2.2. The SW/CC (or designee) exercises waiver authority for mandatory launch safety requirements for USG and T&E activity. For commercial missions, provide Range “RED/GREEN” status to the FAA and User to meet the inherent responsibility of safe operations at their federal range. **(T-2)**

A2.2.2.3. The SW/CC (or designee) ensures through real-time assessment that people and critical resources are protected to an acceptable level. **(T-2)**

A2.2.2.4. For all launch categories, ensures DoL procedures clearly identify AF crewmembers. All crewmembers will be trained in and/or rehearse DoL procedures. Responsibilities for area surveillance, instrumentation, weather, and/or safety system readiness should be indicated by position in all procedures. **(T-2)**

A2.2.3. Mission Director (MD) Responsibilities:

A2.2.3.1. MD is appointed, trained, and certified by the SMC/CC for every USG launch of SMC-acquired spacelift systems/services. The NRO appoints, trains, and certifies MDs for NRO missions. MDs for other agency launches are appointed by those agencies. For Intercontinental Ballistic Missile (ICBM) launches, refer to AFGSCI 99-102 for MD roles. The MD may select key personnel to serve as on console advisors. **(T-2)**

A2.2.3.2. Passes the mission “Go/No-Go” recommendation to the SW/CC. **(T-2)**

A2.2.3.3. Ensures space flight worthiness. **(T-2)**

A2.2.3.4. Leads DoL LV and SV teams through countdown, launch, and satellite separation. **(T-2)**

A2.2.3.5. Exercises waiver authority for user requirements. **(T-2)**

A2.2.4. Operations Director (OD) Responsibilities:

A2.2.4.1. The OG/CC, or designated representative who is trained and qualified in the OD position, may serve as OD in DoL activities, as required. **(T-3). Waiver authority for this requirement cannot be delegated lower than SW/CV.**

A2.2.4.2. Oversees range countdown and advises appropriate authorities on range operational issues. **(T-3). Waiver authority for this requirement cannot be delegated lower than SW/CV.**

A2.2.5. Chief of Safety (SE) Responsibilities:

A2.2.5.1. Assesses safety risks and provides safety recommendations. **(T-3) Waiver authority for this requirement cannot be delegated lower than SW/CV.**

A2.2.5.2. Verifies vehicle flight safety and ground support systems are ready to support launch safety functions for all non-FAA licensed missions. For FAA licensed missions launching from or returning to Air Force ranges, provide status of user-requested systems/capabilities. **(T-3) Waiver authority for this requirement cannot be delegated lower than SW/CV.**

A2.2.6. Range Operations Commander (ROC)/ Range Control Officer (RCO) Responsibilities:

A2.2.6.1. Overall lead for range support to the launch campaign process including coordinating pre-launch and launch events, and post-launch review briefs. **(T-2)**

A2.2.6.2. Responsible for launch-specific mission plans for range support. **(T-2)**

A2.2.6.3. Determines range status and reports range readiness based on range support and flight control status. **(T-2)**

A2.2.6.4. Ensures the proper DoL frequency mitigation procedures are implemented, as required. **(T-2)**

A2.2.6.5. Coordinates status and actions with the MD/launch agency. **(T-2)**

A2.2.6.6. Directs instrumentation configuration actions and controls range timing equipment. **(T-2)**

A2.2.6.7. Conducts range anomaly resolution actions and assess operational impacts. **(T-2)**

A2.2.6.8. Coordinates range anomaly actions between the launch agency, the range team, and contractor personnel. **(T-3) Waiver authority for this requirement cannot be delegated lower than SW/CV.**

A2.2.6.9. Holds count for safety or launch agency requirements, when required. **(T-2)**

A2.2.6.10. Primary DoL interface providing range status and readiness. Provides range user with final "range green" as authorized by the SW/CC. **(T-2)**

A2.2.7. Senior/Mission Flight Control Officer (S/MFCO) Responsibilities:

A2.2.7.1. S/MFCO responsibilities are mandatory for launches utilizing AF-commanded FTS and not required for AFSS. **(T-2)**

A2.2.7.2. Provide final decision for in-flight actions for launches utilizing commanded flight termination systems. The SMFCO will assess MFCO in-flight termination recommendations unless certain time-critical circumstances do not permit the MFCO and SMFCO to coordinate their actions. **(T-2)**

A2.2.7.3. Communicates directly with the SW/CC in the plus-count. **(T-2)**

A2.2.7.4. Execute mission flight rules consistent with Range Safety requirements and operational needs. **(T-2)**

A2.2.7.5. Provides final Flight Control Range "Green/Red" for launch recommendation to the ROC in compliance with mission rules and safety requirements. **(T-2)**

A2.2.7.6. Holds count when range safety constraints are violated for AF-commanded FTS launches. **(T-2)**

A2.2.8. Area surveillance responsibilities:

A2.2.8.1. Launch wings will perform area surveillance duties for USG and T&E launches and as requested for FAA licensed launches. **(T-2)**

A2.2.8.2. Directs mission-related aircraft operations conducted on the range during launch operations. **(T-2)**

A2.2.8.3. Ensures air controllers comply with applicable DoD, Air Force, and FAA rules and procedures. **(T-2)**

A2.2.8.4. Performs launch area surveillance, which encompasses air and sea areas designated as the Flight Hazard Area and the Launch Danger Zone. **(T-2)**

A2.2.8.5. Ensures hazard areas are clear of unauthorized aircraft, water-borne vessels, trains, and people prior to giving a final "GO" call for launch. **(T-2)**

A2.2.9. Launch Weather Officer (LWO) Responsibilities:

A2.2.9.1. LWO responsibilities are mandatory for USG and T&E launches, and performed when requested for FAA licensed launches. **(T-2)**

A2.2.9.2. Ensure weather systems are available to meet launch requirements as specified in operations directives, instructions, plans, and procedures. **(T-2)**

A2.2.9.3. Serves as Launch Weather Team (LWT) member and act as weather single point of contact and calls a weather “hold” when weather violations exist and/or loss of mandatory weather assets. (T-2)

A2.2.9.4. Observe, forecast, and evaluate weather (including upper air wind profiles, severe weather advisory and warning services, etc.) with respect to safety and user commit criteria, status reporting, “Green” or “Red” weather status, and upgrade appropriate weather assets to mandatory as necessary. (T-2)

A2.2.10. Range Engineer (RE) Responsibilities:

A2.2.10.1. RE responsibilities are mandatory for USG and T&E launches and launches utilizing AF-commanded FTS. (T-2)

A2.2.10.2. Ensures range instrumentation is available and ready to satisfy range safety and range user requirements during launch operations. (T-2)

A2.2.10.3. Serves as the AF technical expert on range instrumentation, assessing the impacts of instrumentation failures, overseeing reentry actions, and committing restored systems to operational use. (T-2)

A2.2.10.4. Authorizes emergency configuration changes to range instrumentation to meet mission requirements. (T-2)

A2.3. AFSS Implementation Requirements. The following describes the requirements for AFSS support in the prelaunch, launch, and post-launch timeframes for activity on AFSPC ranges.

A2.3.1. Pre-launch. The ranges should tailor DoL positions and procedures above to support categories of launch activity. A government representative shall be in a position to monitor AFSS status to T-0 to verify AFSS readiness. Voice communications shall be maintained between the government representative and the range user to facilitate a hold call, as required.

A2.3.2. Launch. During vehicle flight, from liftoff to end of programmed positive control (FTS is disabled), situational awareness must be available in near real-time (delays acceptable as necessary for information transmission/processing). Situational awareness can be in the form of a visual display that allows the user to determine time, space, and position information or simple voice communications to provide the range sufficient information to direct emergency response and facilitate notification of appropriate authorities. For USG and T&E activity the range will maintain the capability to provide higher headquarters notification. The user under 14 CFR for commercial/FAA-licensed activity will meet their obligation to notify the FAA and provide information to the AF.

A2.3.3. Post-launch. Telemetry shall be recorded, converted to engineering data, analyzed and provided to Wing Safety for post flight evaluation. This analysis will be used to verify proper system performance and is an essential activity to understand the risk range activity presents to national security interests, AF resources, and common interests of all range users. Analysis shall be for a period to include all launch day countdown tests to end of programmed positive control (FTS is disabled).

Attachment 3

FREQUENCY MITIGATION PROCESS

Table A3.1. Mitigation Process Steps.

STEP 1	30/45 SW identifies any launch requiring mitigation based on their own criteria and notifies the appropriate Range Operations and Launch Squadron at least 4 weeks prior to scheduled launch date.
STEP 2	30/45 SW Range Operations notifies JSpOC Strategy Division and Combat Plans Division of potential conflict with at least 3 weeks notice using secure email or telephone at: jspoc.strategy@afspc.af.smil.mil jspoc.combatplans@afspc.smil.mil Commercial: (805) 606-9841 or DSN: 276-9841
STEP 3	JSpOC Combat Plans Division confirms with appropriate Space Warning Squadron that mitigation procedures are possible for the circumstances of that particular launch then seeks Joint Force Space Component Commander (JFSCC) approval for an entry in the Joint Space Tasking Order (JSTO). The JSTO directs mitigation procedures and authorizes Direct Liaison Authorized (DIRLAUTH) between the range and the Space Warning Squadron (SWS) concerned.
STEP 4	Range Operations and SWS agree on local procedures to check for real-time verification of mitigation during the countdown and notify the Radar operator quickly when mission is complete or mitigation is no longer required.
STEP 5	If launch scrubs: Range advises the SWS, JSpOC Combat Ops, and JSpOC Combat Plans of the new launch date/time. Process repeats beginning with step 3.
<p>WARNING: The following information will be classified SECRET Dates of approved mitigation or verifying that a request for mitigation has been granted for a particular launch.</p> <p>Questions regarding this warning should be directed to AFSPC/A2/3/6SR, DSN 692-3789/6207</p> <p>Note: This AFSPCI is directive only to AFSPC units. However, launches from other ranges must work through the appropriate lead range to submit mitigation requests to the Joint Space Operations Center (JSpOC) in the same manner.</p>	

Attachment 4

ORBITAL DEBRIS MITIGATION

A4.1. Exception to National Space Policy. National Space Policy assigned approval authority for violations of the USG ODMSP criteria to the head of the sponsoring department or agency. For AFSPC missions, this is the Secretary of Defense (SECDEF). For missions requiring an exception to the ODMSP, the following guidance is provided to clarify roles, responsibilities and procedures for orbital debris exception requests.

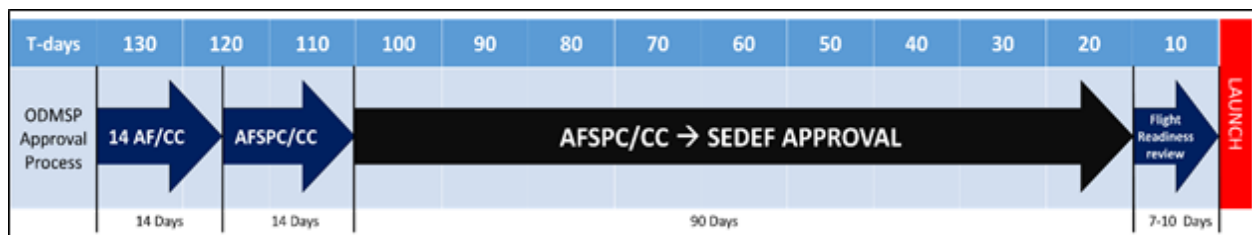
A4.1.1. AFSPC will submit exception requests for AFSPC missions that do not comply with the ODMSP. For missions where AFSPC is responsible for providing the launch service to other agencies (e.g., MDA, NRO, U.S. Navy, etc.), AFSPC is only responsible for the LV exception request. Other agencies are responsible for their own compliance and exception requests. AFSPC will not enforce National Space Policy compliance on non-AFSPC missions.

A4.1.2. Exception requests for violations of USG ODMSP are separate from and in addition to the Space Debris Assessment Report (SDAR) process, described in AFI 91-217, *Space Safety and Mishap Prevention Program*.

A4.1.3. All orbital debris exception requests for AFSPC-procured LVs and SVs will be developed by the respective SMC SPO as early as feasible in the acquisition process, and at a minimum will be coordinated with Center-level engineering and safety offices. Using the USG ODMSP, the program office will provide a concise overview and analysis of orbital debris standard practices the LV and/or SV will not meet, to include an explanation of why compliance cannot be achieved, a risk analysis, a brief summary of the mitigation measured used, and risk acceptances. The SMC/CC, SMC/CD, or Executive Director (SMC/CA) will review and endorse each exception request. SMC will then forward the exception request to the 14 AF/CC or 14 AF/CD for endorsement prior to delivery to HQ AFSPC/A2/3/6SR.

A4.1.4. The flow chart in [Figure A4.1](#). depicts the exception request staffing requirements, to include the timeline required for SECDEF review and approval. HQ AFSPC/A2/3/6SR requires delivery of exception requests 114 days prior to the approved mission launch date for coordination.

Figure A4.1. ODMSP Exception Timeline for AFSPC Missions.



Attachment 5

LAUNCH AND TEST RANGE SYSTEM (LTRS) MANAGEMENT

A5.1. Introduction. The purpose of the LTRS is to enable U.S. national security, civil, and commercial space launch missions; testing for the Air Force, Navy, and Missile Defense Agency; and aeronautical testing for DoD programs.

A5.2. Background. HQ AFSPC and the LTRS community have formally and informally chartered various forums to manage specific processes related to the operation and sustainment of the ER and WR.

A5.3. Purpose. In order to promote better crossflow of information between the various range-related forums, HQ AFSPC established the Range Integrated Management Meeting (RIMM). The first purpose of the RIMM is to simplify LTRS management by consolidating specific O-5 level forums. It formally captured existing, independent forums to include the Range Integrated Concept Team (RICT), Architecture Review Team (ART), Requirements Validation Board (RVB) Summit, and Enhanced Requirements Review Board (ERRB). The second purpose of the RIMM is to establish and maintain a recurring flow and integration of information from other internal and external working groups into a single process to manage the range at an enterprise level. In order to foster crossflow of information, the RIMM establishes a reporting structure for those forums to provide periodic updates of their activities. AFSPC will also conduct a recurring Range Activity Customer Engagement (RACE) wherein Government and industry range customers will have the opportunity to receive an overview of strategic information and initiatives, as well as status of current and future business, technical, and operational practices at the ER and WR. During these events, action items will be captured, and status reviewed at subsequent RACE events and reviewed at RIMM meetings as appropriate.

A5.4. Composition. The RIMM, chaired by HQ AFSPC/A2/3/6SR, is composed of stakeholder managers responsible for integrating efforts of LTRS working groups such as (but not limited to) Program Management Reviews (PMR)s, Subsystem Integrated Product Teams (IPT)s, Systems Engineering, Integration, and Test (SEIT), Range Integrated Test Team (RITT), Reliability Maintainability and Availability (RMA) Working Group, Product Improvement Working Group (PIWG), Integration and Logistics Support (ILS) Working Group, and similar working activity groups. RIMM membership consists of specified LTRS managers at the O-5 level. The RIMM will provide the LTRS Senior Steering Group (SSG) with priorities and decisions and request their direction when required.

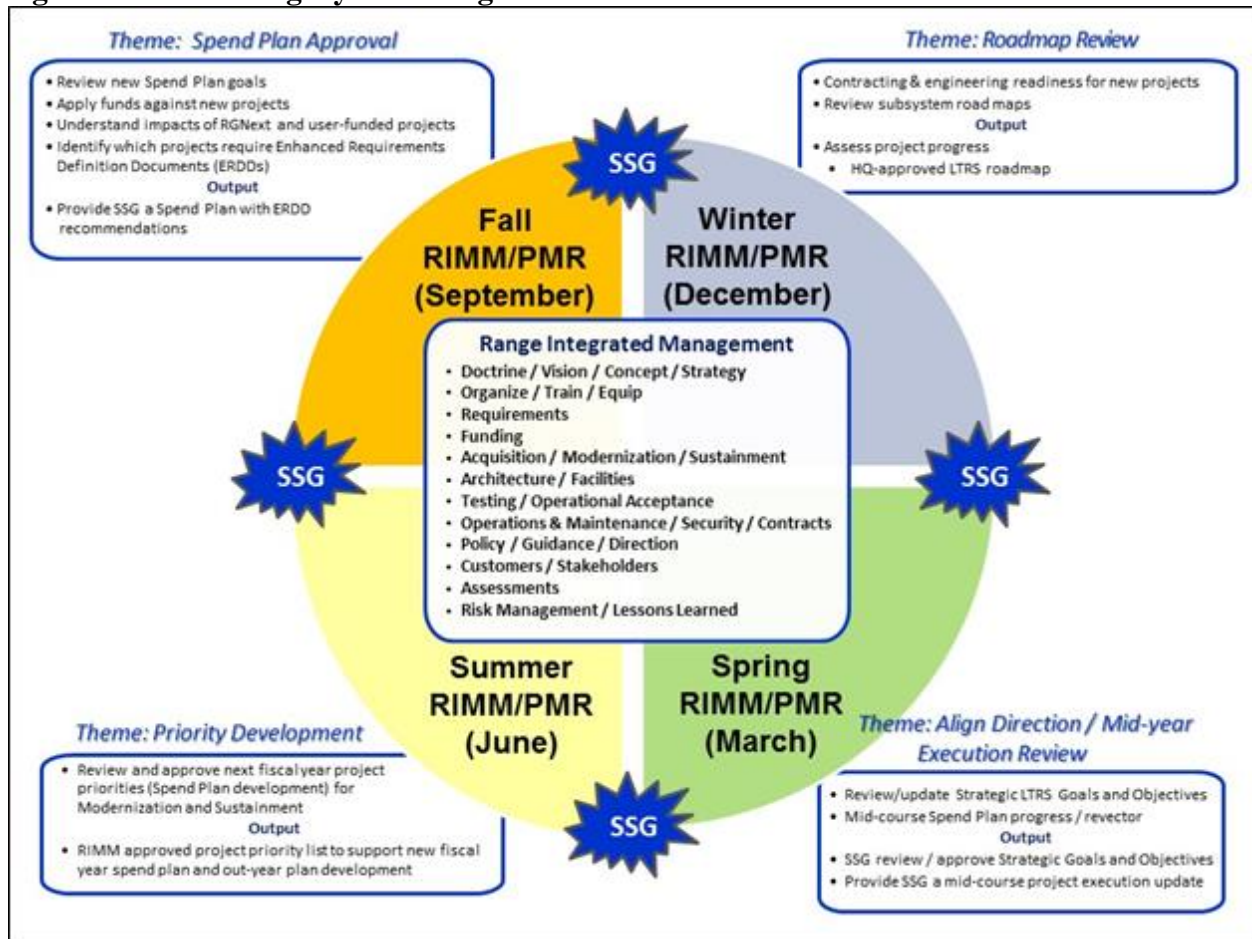
A5.4.1. The SSG, chaired by HQ AFSPC/A2/3/6S, is typically composed of the first O-6 in the RIMM member's organizational hierarchy. The LTRS SSG should serve as the final decision authority for LTRS prioritization and execution issues. If necessary, a General Officer Steering Group (GOSG) can be convened to resolve issues communicated by the SSG. The LTRS GOSG is composed of Center and NAF commanders and general officers leading RIMM-member HQ AFSPC directorates. **Table A5.1.** contains recommended attendees for the RIMM and associated forum memberships.

Table A5.1. LTRS Management Forum Membership.

RIMM	SSG	GOSG
HQ AFSPC/A2/3/6SR	HQ AFSPC/A2/3/6S	HQ AFSPC/A2/3/6
HQ AFSPC/A4US	HQ AFSPC/A4U	HQ AFSPC/A4
HQ AFSPC/SEK	HQ AFSPC/SE	HQ AFSPC/A5/8/9
SMC/RNE	14 AF/A3	SMC/CC (CD)
SMC/RNG	SMC/RN	14 AF/CC (CD)
SMC/RNS	30 OG/CC	
14 AF/A3S	45 OG/CC	
30 OG/TD		
2 ROPS/CC		
45 OG/OGP (TD)		
1 ROPS/CC		
30 OSS/CC		
30 RMS/CC		
45 WS/DO		

A5.5. Process. RIMMs and SSGs will convene quarterly and out-of-cycle on an as-needed basis. HQ AFSPC A2/3/6SR will be the secretariat for the meeting, the duties of which include managing specific meeting details (venue, invitation, conferencing, etc.), distributing the agenda, and publishing meeting minutes. Individual process owners will act as forum lead during the RIMM sessions focused on their topic(s). The RIMM will execute management responsibilities as described in [Figure A5.1](#).

Figure A5.1. Meeting Cycle and Agendas.



A5.5.1. Decisions will be recorded via meeting minutes and by including “Recommendation” and “Polling” charts at the conclusion of each decision briefing. Some issues may require elevation to the SSG and/or GOSG based on lack of consensus, need for visibility at higher levels, etc.

Attachment 6

LOCALLY DEVELOPED RSLP PROCEDURES

A6.1. Approval Process: Use the following approval process for all Rocket Systems Launch Program (RSLP) operations involving 30 SW resources and a similar process for all launch campaign activities not involving 30 SW resources:

A6.1.1. Write local procedures with inputs from subject matter experts and engineers based upon applicable Air Force Technical Orders (T.O.) or other technical data.

A6.1.2. Review and update procedures with the program office, safety personnel, range/base safety office(s) and with external subject matter experts (as applicable).

A6.1.3. Incorporate changes from dry-runs, real-time redlines and recommendations from coordination.

A6.1.4. Gain procedure endorsement by the Squadron/CC, SMC/LEX engineering, 30 SW/SE, and launch site safety concurrence.

A6.1.5. Gain SMC/LE Director approval for use of procedures endorsed by Squadron/CC for the appropriate launch campaign.

A6.1.6. Conduct review of reference technical data (as applicable) immediately prior to performing the procedure for relevant changes.

A6.1.7. For potentially hazardous conditions not covered by procedures, convene a quorum of the above approval authorities to develop procedures to return resources to a safe condition and resume normal operations.

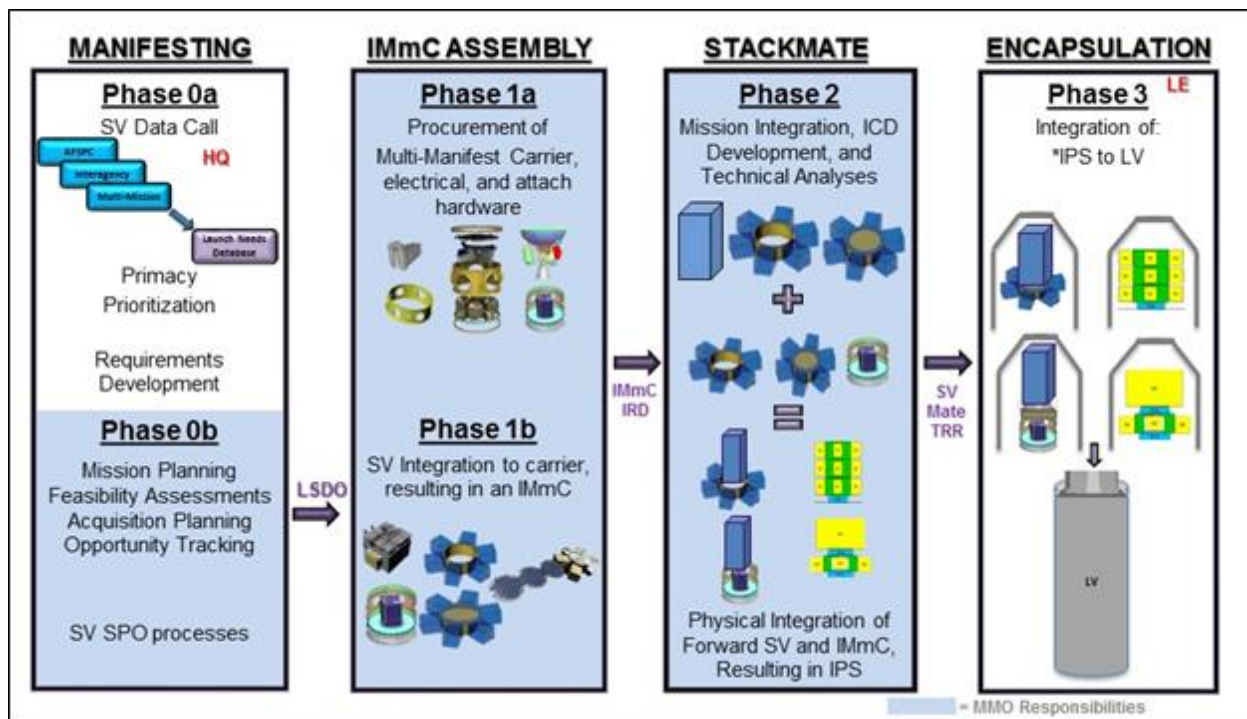
Attachment 7

MULTI-MISSION MANIFESTING OPERATIONS

A7.1. Overview

A7.1.1. The purpose of Multi-mission Manifesting Operations (MMO) is to utilize LV performance to maximize on-orbit capability. The MMO Office identifies DoD/IC/Civil/Commercial launch opportunities to enable and execute multi-mission manifesting mission design. The MMO Office is led by SMC/LE to provide agile and innovative solutions to accomplish Space Warfighter Construct (SWC) and LSDO objectives. **Figure A7.1.** shows the Multi-Mission Integration Phases. The descriptions of each phase of integration are provided in Section **A7.2.** Organizational responsibilities for executing all four phases are captured in Section **A7.3.**

Figure A7.1. Multi-Mission Integration Phases.



A7.2. Multi-Mission Integration Phases.

A7.2.1. Phase 0 – Manifesting

A7.2.1.1. Solicitation of SV data call and development into mission opportunity sets

A7.2.2. Phase 1 – Integrated Multi-Mission Carrier (IMMC) Assembly

A7.2.2.1. SV integration and test to the Multi-Mission Carrier, resulting in an IMMC

A7.2.3. Phase 2 – Stackmate

A7.2.3.1. Standard mission integration including ICD development and analysis leading to the physical mate of the forward SV to the IMMC or the mate of multiple IMMCs into a single flight-ready configuration

A7.2.4. Phase 3 – Encapsulation:

A7.2.4.1. Standard SV processing resulting in the encapsulation within a payload fairing, transportation, integration to the LV, and launch

A7.3. Responsibilities.

A7.3.1. Phase 0

A7.3.1.1. HQ AFSPC A2/3/6S

A7.3.1.1.1. Provide AFSPC mission priorities and operational requirements to SMC/LE.

A7.3.1.1.2. Issue the LSDO IAW 3.1.2.2

A7.3.1.1.3. Coordinate with SMC/LE during mission planning and integration.

A7.3.1.1.4. For all phases, function as the primary HQ AFSPC focal point for Multi-Mission Operations.

A7.3.1.2. SMC/CC

A7.3.1.2.1. Provide recommended mission sets (incl. potential backup SVs) to AFSPC A2/3/6

A7.3.1.2.2. Implement the LSDO.

A7.3.1.3. SMC/LE

A7.3.1.3.1. Coordinate with AFSPC A2/3/6S throughout mission planning and integration

A7.3.1.3.2. Develop potential mission sets based on A2/3/6S-provided operational requirements.

A7.3.1.3.3. Execute Multi-Mission integration actions as directed by the LSDO

A7.3.1.3.4. Develop, disseminate, and enforce standards

A7.3.2. Phase 1

A7.3.2.1. SMC/LE

A7.3.2.1.1. Integrate SVs onto SMC/LE-procured MMCs

A7.3.2.1.2. Assist SV integration onto non-SMC/LE procured MMCs

A7.3.2.2. SV SPOs (to include STP and the prototyping SPO)

A7.3.2.2.1. Assist SV integration onto SMC/LE procured MMCs

A7.3.2.2.2. Integrate SVs onto non-SMC/LE-procured MMCs

A7.3.3. Phase 2

A7.3.3.1. SMC/LE

A7.3.3.1.1. Perform SV to LV integration analyses

A7.3.3.1.2. Mate forward SV with fully-assembled IMMC into an Integrated Payload Stack (IPS)

A7.3.3.2. SV SPOs (to include STP and the prototyping SPO)

A7.3.3.2.1. Assist with SV to LV integration analyses and documentation

A7.3.4. Phase 3 Responsibilities

A7.3.4.1. SMC/LE

A7.3.4.1.1. Ensure IPS and LV integration

A7.3.4.2. SV SPOs (to include STP and the prototyping SPO)

A7.3.4.2.1. Support IPS and LV integration