

**BY ORDER OF THE COMMANDER
50TH SPACE WING**

50 SPACE WING INSTRUCTION 10-1208

10 SEPTEMBER 2009



Operations

**LAUNCH READINESS AND
RESPONSIBILITIES**

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This instruction implements AFPD 10-2, Air Force Readiness Programs. The instruction establishes 50 Space Wing (50 SW) units' roles and responsibilities relating to the launch readiness review process and incorporates information previously found in 50 SWI 10-206, Satellite Launch Operations. The instruction applies to all 50 SW units, attached units, tenant organizations, and contractors, as stipulated by contract, using 50 SW assets and resources in support of 50 SW Satellite Launch Operations. This instruction is applicable to Air Force Reserve personnel when in duty status. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, Management of Records and disposed of in accordance with the the Air Force Records Disposition Schedule (RDS) located at <https://afrims.amc.af.mil/>. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF IMT 847, Recommendation for Changes of Publications; route AF IMT 847s from the field through the appropriate organizational chain of command. This instruction will be updated as needed to reflect the most current roles and responsibilities as future capabilities and concepts become operational.

SUMMARY OF CHANGES

50 SWI 10-206, Satellite Launch Readiness, will be rescinded with the publication of this instruction. A new control number (50 SWI 10-1208) was assigned. With the reorganization of the 50 Network Operations Group (50 NOG), briefings normally provided to the 50 Operations

Group Commander (50 OG/CC) are now provided to all three 50 SW Group Commanders. Contents of some attachments were updated and other attachments were deleted. Administrative changes were made. Each squadron, detachment, organization, section or operational area may develop supplements, but the supplements must be submitted to 50 Operations Group/OGV (50 OG/OGV) for review and approval. Unit supplements will not be less restrictive or contradict this instruction. This instruction also covers other activities and responsibilities of 50 SW units that provide support to the success of 50 SW satellite launch readiness. Instructions on accessing/using the Launch Nets Conferencing System (LNCS) were added and are located in Attachments 7 and 8. These changes require review of this instruction in its entirety. **Note:** L-20, L-30 etc., refers to L minus 20 days, L minus 30 days, etc., hours are depicted as L minus 28 hours, L minus 5 hours, etc.

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1. Launch Readiness.

1.1. Launch readiness is a process used to notify the 50 Space Wing Commander (50 SW/CC) of pending satellite launches and launch preparation activities. Launch readiness provides the 50 SW/CC with information necessary to assess the 50 SW's readiness to support satellite launches, such as those which the 50 SW holds Satellite Control Authority (SCA). Launch readiness applies to launches requiring payload or booster support from a 50 SW unit.

2. Responsibilities.

2.1. The 50 SW Space Vehicle Operations Director (50 SW/SVOD) will be appointed from any 50 SW unit with SCA during a launch. The 50 SW/SVOD will be responsible for briefing the 50 SW/CC on the readiness of the 50 SW to support launch activities.

Note: The 50 SW/SVOD provides the leadership and management to successfully accomplish Launch and Early Orbit (LEO) responsibilities.

3. Operational Readiness Review (ORR) for SCA, Payload, or Booster Launches.

3.1. The purpose of the ORR is twofold. First, it informs the 50 SW/CC of the upcoming launch and the 50 SW's role in the launch. Second, it certifies to the 14th Air Force Commander (14 AF/CC) the 50 SW's readiness for launch.

3.2. Notification of an upcoming ORR is sent by 14 AF. This message specifies the date and time of the ORR and notifies the 50 SW of suspense(s). Upon receipt of this message, the appropriate 50 SW agency will begin preparations for the briefing. If a 50 OG Space Operations Squadron (SOPS) has primary responsibility for the launch, they are responsible for preparing the briefing, if not, 22 SOPS will be the lead agency.

3.3. For launches that involve a payload where a 50 OG SOPS has SCA during LEO (e.g., Global Positioning System (GPS) launches), the 50 SW/SVOD will be the lead for the ORR. The 50 SW/SVOD is responsible for developing the ORR. The ORR briefing will cover, as needed: an overview on the purpose of the mission, launch specifics, mission timelines, SOPS' launch preparations (status of hardware, software, database, documentation, personnel), risk assessments involved, SOC freeze, 50 SW Network Control Center (50 SW/NCC) and 21 SOPS/NCC communications links, secure/non-secure voice, backup communications, 50 Mission Support Group (50 MSG) support equipment status (power generation, air compressors, chillers, boilers, etc.), status of the Air Force Satellite Control Network (AFSCN), Go/No-Go criteria, status of 50 SW units' readiness to support launch, applicable pre-launch test concerns, and any other information the 50 SW/SVOD deems necessary.

3.3.1. The 50 SW/SVOD will be responsible for organizing a pre-brief of the ORR to inform the 50 SW/CC of the upcoming launch. Prior to the 50 SW/CC's pre-brief, the 50 SW/SVOD will be responsible for briefing the 50 OG/CC. The 50 SW/SVOD will prepare and submit the ORR slides to the 50 OG/CC prior to the 50 SW/CC's pre-brief for approval. Mandatory attendance for the ORR pre-brief to the 50 SW/CC includes: 50 OG/CC, 50 MSG/CC, 50 NOG/CC, 22 SOPS/CC, 50 SW Chief of Maintenance (COM) and 50 SW Safety (50 SW/SE) or designated representatives.

3.3.2. In the case of a launch slip, the 50 SW/SVOD will re-accomplish the pre-brief as requested by the 50 SW/CC. If the launch is rescheduled, the 50 SW/SVOD will re-accomplish the pre-brief, unless otherwise directed by the 50 SW/CC.

4. Operations Requirement Letter (ORL).

4.1. For any satellite launch, support activity and readiness must be communicated to the launch community via the ORL.

4.2. NLT 25 days before launch (L-25), the 50 SW/SVOD will develop and disseminate the ORL to 50 SW units with primary responsibility for the launch. The letter will identify

AFSCN requirements. As a minimum, it will include: a brief description of requirements to include date/window of the launch, Inter-Range Operations Number (IRON), mandatory and required AFSCN sites, security classification of launch activities to include references used to determine classification, the satellite/booster communication link description, specific Automated Remote Tracking Station (ARTS) or the Remote Block Change (RBC) equipment configuration requirements, communication (primary/alternate) configuration, resource configuration requirements, technical control configuration requirements, S-Band track and record requirements, pre-launch testing requirements, date/time when the All Station Conference (ASC) will be held, and a description of data products required to support the launch.

5. 50 SW Units Other Activities and Responsibilities.

5.1. 50 SW units supporting the launch are responsible for providing the 50 SW/SVOD with status of hardware, software (to include database installs), etc., Go/No-Go criteria and expected status at time of launch.

5.2. The 50 SW/SVOD is responsible for ensuring the LNCS (see Attachments 7 and 8) is activated and operational.

5.2.1. The 50 SW/SVOD will be responsible for submitting a Radiation restriction (RAD) schedule request during any/all launch activities.

5.3. The 22 SOPS Network Crew Commander (NCMDR) is responsible for immediately notifying the 50 SW/SVOD of any changes to the AFSCN that may adversely affect the launch.

5.4. Any changes to the 50 SW readiness or Go/No-Go status will be handled real-time by the 50 SW/SVOD and the information will be passed over the LNCS. The squadron commander with primary responsibility for launch support will advise the 50 SW/CC and group commanders of any changes.

5.5. The 50 SW Go/No-Go status and required criteria will be developed by the 50 OG unit with primary responsibility for launch support (see Attachment 2). The information will be developed and coordinated with the 50 SW/SVOD. Attachment 2 will be coordinated through the 50 OG/CC, 50 NOG/CC, and 50 MSG/CC and approved by the 50 SW/CC at L-30 days prior to the scheduled launch. Go/No-Go criteria for individual satellite systems should not change for each launch, however, the criteria for launch activities may change based on unusual launch events.

5.6. Go/No-Go criteria will address the following:

5.6.1. Include information on the 50 SW/NCC and 21 SOPS/NCC equipment status, System Capability (SYSCAP), Operations Capability (OPSCAP), status of primary and secondary control centers (if applicable), and status on all data and communications links that would result in a No-Go for launch support.

5.6.2. 22 SOPS will consider and report on the health of the AFSCN, i.e., status on all the RTS equipment that would result in a No-Go for launch. 22 SOPS must coordinate with 21 SOPS (as applicable) to ensure previously scheduled significant maintenance activities do not adversely impact the planned launch date. All launch and significant AFSCN maintenance conflicting activities must be resolved NLT L-10; otherwise, they

will be included in the Go/No-Go notice. Reason(s) will be provided on why conflicts cannot be resolved and recommendations will be made. 22 SOPS will ensure the RTS involved with launch activities has advised the host commander of anticipated requirements (resources).

5.6.3. 50 SW units will include any on-orbit conditions, such as a major satellite anomaly, with the existing constellation that would result in a No-Go for launch support.

5.6.4. Identify the impacts and the actions being taken to resolve any concerns or issues with supporting the launch. Go/No-Go criteria will also list ways to mitigate the risk and identify back-up plans.

5.6.5. The 50 SW/SVOD will coordinate with 50 SW Safety Office on space safety and include it in the mission brief.

5.6.6. Include any information that would result in a No-Go for launch support.

5.7. 50 SW Chief of Maintenance (COM), 50 SCS/SCQ will provide current status of ground equipment and communications links supporting launch operations. 50 SW COM will provide maintenance action information as well as an Estimated Time Return to Operations (ETRO) for ground equipment or communications link outage situations that would impact launch operations.

6. Operational Directives (OD).

6.1. NLT L-120 the 50 SW/SVOD will review the applicable OD. The 50 SW/SVOD will ensure 22 SOPS and supporting agencies have the current OD and provide any changes to the document NLT L-25. In addition, NLT L-120 the 50 SW/SVOD will ensure the user has been assigned an IRON IAW 22 SOPS OI 10-1 (22 SOPS Inter-range Operation Number (IRON) Management. NLT L-120 22 SOPS will ensure they have an OD for new programs. 22 SOPS will be responsible to ensure the RTS have an up-to-date OD and the vehicle folder has been created by the applicable RTS contractor to support the launch.

7. AFSCN Network Resource Loading.

7.1. NLT L-21, the 50 SW/SVOD will submit to 22 SOPS the AFSCN Network Resource Loading letter to ensure all AFSCN required assets are added to the Automated Scheduling Tools for Range Operations Electronic Scheduling Dissemination (ASTRO/ESD).

7.2. The 50 SW/SVOD will coordinate with the National Reconnaissance Office Operations Squadron (NOPS) on all AFSCN support requests to reduce scheduling conflicts.

7.3. NLT L-5, the 50 SW/SVOD will schedule an ASC. Mandatory attendance: all 50 SW units supporting the launch activities. The 50 SW/SVOD is responsible for briefing all launch requirements to the participants. As applicable, the briefing will include: a valid and up-to-date OD, contents of the ORL, freeze documents available to the 50 SW units, search and acquisition procedures, review tape shipment and retention requirements, RTS database version and IRON configuration, review of any manual configuration changes, notification of test support requirements, review of any special requirements for the launch such as recordings, and a review of all contingency requirements such as launch slip information, contingencies and space safety planning. The 50 SW/SVOD will ensure the ASC appears in the 24-hour ESD.

7.4. The 50 SW/SVOD will be responsible for immediately disseminating a Launch Slip Message (LSM) to all 50 SW units supporting launch activities and any changes to the launch date and time (outside the scheduled launch window). If the date or time changes, up to 14 days, a rewrite of the ORL and Freeze Letters is not required, however, a slip past 14 days requires a complete rewrite of the ORL and Freeze Letters. The 50 SW/SVOD will state in the LSM that both the ORL and the Freeze Letters are not required since the slip is within the 14 day criteria.

7.5. The 50 SW/SVOD will be responsible for obtaining launch range weather forecast and probabilities of constraint violations due to the weather.

7.6. NLT L-30, the 50 SW/SVOD is responsible for coordinating with 22 SOPS on all significant scheduled AFSCN maintenance activities that will adversely impact launch activities, otherwise, a freeze will be required for AFSCN equipment.

7.7. NLT L-30, the 50 SW/SE will coordinate the nomination of the Interim Safety Board (ISB) President, and provide the 50 SW/CC signed memo to the 50 SW/SVOD. The ISB President must be either the Squadron Commander or Director of Operations from an operations squadron (not from the launch responsible squadron), or a 50 OG/CD. The ISB President must be present during launch activities and must take the required training provided by the 50 SW Orbital Safety Office.

7.7.1. IAW AFI 91-204, para 2.7.4.1, do not appoint personnel involved in the mishap to the ISB.

7.8. The 50 SW/SVOD will test the unsecured LNCS (see Attachments 7 and 8 for procedures in using this system), conduct Pre-Launch and Early Orbit (LEO) testing with the spacecraft, verify the condition of the satellite and ensure the squadron can support the spacecraft. Ensure meetings are held during all phases of launch planning to exchange pertinent information, i.e. kickoff meeting, normally held by the squadron commander or his/her authorized representative. This type of meeting covers mission and flight number, time of launch, plane, slot, AFSCN status, manning, and any other topic which may affect the overall LEO process. Pre-Coordination Meeting – the lead planner and contractor Technical Advisors (TAs) hold informal pre-coordination meetings about one hour before Pass Plan Briefings (PPB), to ensure command plan packages are correct and ready for the PPB. The PPB is held every 24 hours to brief pass plans for a specified time period, discuss the status on the health of the AFSCN, etc.

Note: Tech Advisors (TAs) provide satellite expertise during launch operations. They generate planning products in parallel with the launch squadron to verify accuracy and completeness. The 50 SW/SVOD will ensure rehearsals are conducted.

7.9. NLT L-15, the 50 SW/SVOD will contact the 50 Space Communication Squadron/SCOK, Wing Knowledge Operations, to provide the NASA transponder channel the ability to view the launch, if possible. The 50 SW/SVOD will tie in the operations nets to the 50 SW Command Post and the affected SOC. This setup is used for monitoring purposes only, but if this setup interferes with real-time operations, the monitor nets will be dropped.

7.10. The 50 SW/SVOD will be responsible for ensuring emergency checklists are current and readily available. The 50 SW/SVOD will be responsible for implementing appropriate emergency response procedures (i.e., bomb threat, fire, security, etc.) and overseeing

response actions during launch activities, in coordination with the Mission Commander/Mission Chief.

7.11. The 50 SW/SVOD will be responsible for ensuring anomaly checklists are readily available and ensure they are utilized during emergency situations, in coordination with the Situation Assessment and Recovery Team (SART).

7.12. The 50 SW/SVOD will maintain an events log. The log is used to record events during launch and emergencies or mission critical events. The log is also used for reconstruction of events during an investigation. Crewmembers must attempt to keep as accurate a log as possible, but logging events does not take priority over an emergency.

8. Other Responsibilities and Activities.

8.1. As applicable, all 50 SW units supporting launch activities must provide the 50 SW/SVOD with:

8.1.1. Satellite Information, which includes: mission overview, payload description (include mission life and design enhancements), launch date/time (to include window), final station, and early orbit timeline.

8.1.2. Early Orbit Timeline, which includes: liftoff, SCA transfer, acquisitions, maneuvers, major spacecraft component deployment, start of on-orbit testing and payload initialization.

8.1.3. Personnel Readiness, which includes: minimum personnel required for a launch, to include training/certification readiness of SOC personnel.

8.1.4. Procedures which include: pre-launch testing, rehearsals, training, exercises, and pass plans, etc.

8.1.5. The 50 SW/COM will provide status of Schriever AFB and AFSCN link status that are supporting launch operations to the 50 SW/SVOD and 22 SOPS. This includes Primary, Alternate, Internodal, and Voice links.

8.1.6. All units (i.e. NOPS, 2 SOPS, etc.) will avoid (if possible) scheduling critical contacts within one hour of a scheduled launch window except for launch related contacts. This is a consideration that each unit will use in their internal scheduling process.

8.1.7. The 50 OG/CC is responsible for determining the readiness of the 50 OG to support each launch mission. To facilitate the development of standard launch procedures within the 50 SW, the Chief of Standardization and Evaluation (50 OG/OGV) will appoint by letter a 50 OG/OGV member to be present in the SOPS to observe launch events.

8.1.8. For any launch that requires AFSCN support for an external SOC, 22 SOPS will be responsible for developing and briefing the 50 SW's portion of the ORR.

8.1.8.1. The ORR briefing will cover, as needed: AFSCN mandatory/required sites of support, Remote Tracking Station (RTS) status, communication link status, any changes made to the AFSCN baseline since the previous AFSCN supported launch, and any additional information deemed necessary.

- 8.1.8.2. Unless directed by the 50 SW/CC, a pre-brief of the ORR described in para 8.1.8 and 8.1.8.1 is not required. The 50 NOG/CC, or designated representative, will represent the 50 SW at the ORR.
- 8.1.9. The Senior Contract Representative (SCR) at the RTS will ensure RTS antennas are ready to support the launch upon request. The SCR will immediately report any activity that adversely impacts their ability to support the launch via ESD.
- 8.1.10. NLT L-30 the 50 SW/SVOD will ensure an orbital request is sent to the 22 SOPS/DOUA, this will ensure all orbital requirements are met to support the launch. Orbital products provided by 22 SOPS/DOUA are determined by the launch agency and may include predictive RFI, generating satellite visibilities, two line mean element sets (2LMES) data, support of early-orbit determination, and space object identification.
- 8.1.11. NLT the last day of each month 50 SW units and external AFSCN customers requiring AFSCN launch support will send their 180-day forecasts to the 22 SOPS Mission Support Flight and the 22 SOPS Maintenance Officer (22 SOPS/MA).
- 8.1.12. 22 SOPS will be responsible for providing the 50 SW/SVOD with launch readiness of 21, 22, 23 SOPS and/or AFSCN. 22 SOPS will provide required AFSCN status for the ORR message. 22 SOPS will coordinate with the launch responsible squadron on space safety issues, status on outages, OPSCAP, hardware, and software.
- 8.1.13. 22 SOPS is responsible for providing the 50 SW/SVOD with AFSCN (RTS) information on all alternative path missions.
- 8.1.14. 21 SOPS will provide 22 SOPS with status on all 21 SOPS AFSCN communications links supporting launch operations, to include primary and alternate voice links, and other related AFSCN status.
- 8.1.15. NLT L-30 the 50 SW/SVOD will submit an orbital request and provide launch and early orbit information to 22 SOPS. Orbital parameters must be supplied IAW System Interface Specifications 509.
- 8.1.16. 22 SOPS Orbital Analysis section will be responsible for disseminating launch documents and space safety requirements to include: Radio Frequency Interference predictions for early orbit satellite maneuvers and Electromagnetic Interference analysis.

9. Assets/Resources Launch Freezes.

9.1. Launch freezes are applicable to all SCA, payload, or booster supported by the 50 SW. Assets/resources (configuration) freezes are imposed to minimize the risk to LEO activities and other periods of critical operations. Freezes include: Declaring and Requesting, Implementing and Waivers. There are three types of asset freezes: SOC, SAFB and AFSCN.

9.2. Responsibilities - Freeze Assets (declaring and requesting).

9.2.1. Once a unit determines which assets or resources will be either dedicated to the launch or deemed critical for mission success, the unit will declare a need for those assets and submit a request to freeze them to the 50 SW/SVOD. Assets can either be under the auspices and authority of the 50 OG/CC, 50 MSG/CC or 50 NOG/CC. All equipment must be Mission Capable; otherwise, the equipment is a candidate for No-Go. **Note:**

Disputes over mission priority (Mission Needs) will be forwarded immediately by the 50 SW/SVOD to the 50 SW/CC for resolution. The decision of the 50 SW/CC shall be final and conclusive. Other cases of disputes, such as denial of waiver requests that cannot be resolved, will be forwarded through functional chains of command for resolution. All information concerning the dispute will be included.

9.2.2. The 50 SW/SVOD will coordinate all freeze requests with all the units affected by the freeze. The freeze request(s) will be submitted to the 50 SW/CC, or designated representative, with concurrence from the 50 OG/CC, 50 NOG/CC and 50 MSG/CC, requesting approval or disapproval of the freeze request (only attachments 4 and 5 apply, attachment 3 is advisory). If the freeze is approved, only those assets/resources dedicated for the launch are frozen until critical operations have been completed. If disapproved on the basis of mission need, the freeze request will be sent back to the 50 SW/SVOD for rework (see note regarding disputes) and the process starts over again.

Note: When declaring a freeze, the freeze request is a candidate for Go/No-Go consideration if the freeze is not granted.

9.3. Implementation.

9.3.1. SOC freeze goes into affect NLT 24 hours prior to the dress rehearsal and continues until all LEO or critical operations have been completed.

9.3.2. SAFB freeze goes into affect NLT L-5 through completion of LEO activities and critical operations. However, mission needs dictate when the freeze will take effect.

9.3.3. Freeze of AFSCN resources go into effect at L-48 hours in support of LEO activities. 22 SOPS/CC, or the authorized representative, will be responsible for reviewing scheduled activities at AFSCN locations and determine if activities have a possible impact on launch readiness or other critical operations.

9.3.4. See Attachments 3, 4 and 5, sample Freeze Request letters for SOC, SAFB and AFSCN.

9.3.5. The 50 SW/SVOD will send a representative to the De-conflict meeting (DM) and the Utilities Outage meeting(s) (UOM) to ensure any activities presented at the DM and UOM do not affect frozen assets. If so, the 50 SW/SVOD and the 50 NOG/CC or designated representative, in concert with the appropriate/affected systems expert(s), will be responsible for recommending said activities be rescheduled and advising the requester to submit a waiver request if frozen assets/activities cannot be rescheduled.

9.3.6. The 50 SW/SVOD will ensure freeze messages are provided to the 22 SOPS Mission Support and 22 SOPS Maintenance Officer (22 SOPS/MA), as well as termination of frozen assets.

Note: The release of one freeze does not affect a freeze imposed by another agency for other reasons.

9.4. Freeze Waivers.

9.4.1. Freeze waivers will be submitted to the 50 SW/SVOD before performing any upgrades or changes to the operations configuration of a frozen asset, prior to installation of an Engineering Change Proposal, Temporary Configuration Change, Form 19

installation or Temporary Change Modification Waiver Request, etc. RTS will coordinate freeze waiver(s) with 22 SOPS before submitting the request to the 50 SW/SVOD. Units requesting a waiver will conduct a thorough risk assessment of the activity requested and present the result to the 50 SW/SVOD. 50 SW units must ensure that whenever a freeze is imposed, it will not affect assets not under the operational control of the unit who initiated the freeze. As such, all waiver requests must be reviewed by the unit requesting the freeze to ensure that no action is taken that could directly impact current operations. Accomplish all freeze waiver requests as specified in the sample template in Attachment 6.

9.4.2. Exceptions to a freeze include maintenance urgently needed to protect safety of equipment and personnel, activities such as training, Preventive Maintenance Inspections, Programmed Depot Maintenance (PDM) (unless the PDM activities change the normal operational configuration, or significantly impact operations as defined by the unit), performing launch vehicle updates required for launch, and performing corrective maintenance needed to restore operational capability of mission critical equipment. The unit commander will validate the urgency of need for maintenance activities during freeze periods. The 50 SW Chief of Maintenance (COM), will make a decision as to which activities are performed without a need for a waiver, which activities require a waiver and which activities can be delayed until after the freeze. In the event that it cannot be determined which activity has an impact on the operational mission, a waiver is required.

9.4.3. Waiver approval will reside with the agency/unit(s) controlling the frozen asset(s). The 50 SW SVOD will route the approved waiver(s) to the 50 SW Chief of Maintenance (50 SCS/SCQ), 22 SOPS/CC, and 50 CES/CC for coordination or information. The 50 NOG/CC is the final approval authority for freeze waivers.

WAYNE R. MONTEITH, Colonel, USAF
Commander, 50th Space Wing

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 10-2, Air Force Readiness Program

AFI 91-204, Safety Investigations and Reports

AFMAN 33-363, Management of Records

AFSPCI 10-1208, Spacelift Operations

22 SOPS OI 10-1, (22 SOPS Inter-Range Operation Number (IRON) Management) 12 Mar 07

Abbreviations and Acronyms

AFSCN—Air Force Satellite Control Network

ARTS—Automated Remote Tracking Station

ASC—All Station Conference

ASTRO/ESD—Automated Scheduling Tool for Range Operations Electronic Scheduling Dissemination

CS—Communication System

DM—De-conflict meeting

COM—Chief of Maintenance

ESD—Electronic Schedule Dissemination

GPS—Global Positioning System

IRON—Inter-Range Operations Number

LEO—Launch and Early Orbit

LNCS—Launch Nets Conferencing System

L-30—30 days before launch

MCB—Modification Control Board

NCC—50 SW Network Control Center

NCMDR—Network Crew Commander

NOG—50 Network Operations Group

NOPS—National Reconnaissance Office Operations

OD—Operational Directive

ORL—Operations Requirement Letter

ORR—Operational Readiness Review

OPSCAP—Operations Capability

RAD—Radiation

RBC—Remote Block Change

PPB—Pass Plan Briefings

RTS—Remote Tracking Stations

SCA—Satellite Control Authority

SCS—Space Communication Squadron

SOC—Space Operations Center

SOPS—Space Operations Squadron

50 SW/SVOD—Space Vehicle Operations Director

SYSCAP—Systems Capability

TAs—Technical Advisors

UOM—Utilities Outage meeting(s)

Terms

Air Force Satellite Control Network (AFSCN)—A global, inter-command configuration of space vehicle command, control, and communications resources operating in concert to support Department of Defense and other assigned space missions. Loss of a mandatory resource would likely scrub a launch. Required Site-A loss of a required resource may be waived by the Satellite Control Authority.

AFSCN-Freeze—Resources used by many organizations. The length of time these resources remain frozen should be kept to a minimum. As with a base freeze, a general or detailed list (if known) should be included with the request and the agencies that maintain operational control over those assets ensures the proper equipment is put into a freeze condition. These assets may be comprised of, but are not limited to: Remote Tracking Stations operated by 50 NOG detachments, 22 SOPS, 23 SOPS, and the communications system required for launch, both at the primary and the alternate node.

AFSCN Resource Schedule—Daily schedule of approved non-flight AFSCN activities.

Automated Scheduling Tool for Range Operations (ASTRO) Scheduling System—A computer based scheduling system used by 22 SOPS to publish network tasking orders.

Base Freeze—Many of the assets considered under a base freeze may need to be frozen at different times and for different lengths of time. When a base freeze is requested, a general or detailed list of the resources that need to be frozen must be included in the memorandum requesting the freeze. Agencies maintaining operational control of those assets are to determine the exact resources needed for the launch and the time period necessary to freeze them. These assets may be comprised of, but are not limited to: base communications systems used by the launch program, base utilities (Power, HVAC, etc.), and activities that could have an impact on operations. The freeze is applicable only to the location specified (i.e., a Schriever AFB freeze does not automatically freeze 21 SOPS assests).

Corrective Maintenance—Corrective maintenance are performed on equipment that is in need of immediate repair, or poses a safety or health hazard.

Critical Operations—All operations deemed critical to LEO of a satellite program, or operations deemed critical to national security or national defense. Operations that are necessary to stabilize the health of a satellite to prevent its loss, and/or a change in configuration that might have serious consequences to current operations.

Deconfliction Meeting—Allows the operations community to review all proposed activities prior to inclusion on the module resource schedule and the AFSCN resource schedule. Coordinates and schedules access to modules for both interference and non-interference actions. This meeting is the primary method for all users to obtain information concerning activities and freeze schedules.

Dedicated System—A dedicated system that supports one specific space program.

Freeze—A hold put on all configuration changes to the specified system databases, hardware, software, communications, ceiling/under-floor activities, and all base utilities required for operations. This includes all work for Engineering Change Proposals (ECP), Temporary Configuration Changes (TCC), Temporary Change Modification (TCM), and facility work. Database files necessary for daily on-orbit operations (e.g., schedule records, Contact Support Plans (CSP), Vehicle Ephemeris Identifications (VEID), etc.) are excluded. Corrective maintenance to hardware or communications equipment that is critical to mission success is considered exempt from the freeze waiver process.

Freeze Release—The removal of all restrictions imposed by a freeze. The date and time (ZULU) of the freeze release shall be included with the letter/message that initiated the freeze with the understanding that at any time prior to that date and time the freeze release can be changed. The change of date and time can be done verbally, but requires a follow up memorandum/message. If no change to the original date is received, then the freeze is automatically released on that date.

Freeze Waiver—A memorandum or waiver request form developed by the requester allowing changes to be performed on assets that are frozen. All waiver requests are considered on an individual basis. Waivers must be coordinated with agencies/units controlling the frozen assets.

Mandatory RTS—Any RTS used to support a launch where a change in status affects “Go/No-Go” launch criteria.

Module Resource Schedule—A daily schedule of approved non-flight module activity. All activities that have the potential to impact mission hardware availability must be on the module resource schedule.

Preventive Maintenance Inspection (PMI)—This is work that is normally performed at the unit level and can include a wide range of activities. The unit performing a PMI should decide which activities are performed without the need of a freeze waiver, which activities require a waiver, and which activities should be delayed until after the freeze. In the event that it cannot be determined if an activity has an impact on the operational mission, a waiver or Freeze Response Letter is required. **Note:** A Free Response Letter is a memorandum to the launch agency stating why a requested freeze cannot be placed on an asset.

Programmed Depot Maintenance (PDM)—This work is considered above unit level maintenance. This maintenance includes a wide range of activities and is performed by a Depot Level Traveling Team. These activities do not include any configuration changes. When the PDM is tasked to do an ECP, TCC, or TCM, a freeze waiver request or Freeze Response Letter is required. **Note:** A Free Response Letter is a memorandum to the launch agency stating why a requested freeze cannot be placed on an asset.

Required RTS—Any RTS used to support launches where a change in status does not affect “Go/No-Go” launch criteria.

SOC—Includes all equipment maintained at the squadron level to include main system computers, consoles, under floor, above roof, SVS (Internet), etc.

SOC Freeze—Freezes the SOC assets, including the primary node and any assets deemed critical for mission success located at the backup nodes.

Space Vehicle Operations Director (50 SW/SVOD)—The 50 SW/SVOD provides leadership and management to successfully accomplish Launch and Early Orbit operations. This involves guiding and directing the activities of the squadron and contractor personnel, keeping the group focused as a team and coordinating LEO activities with outside agencies. When a decision must be made that affects operations planning or execution, the 50 SW/SVOD, contractors and crew will convene as a team. The team gathers information, evaluates the situation and recommends a course of action. The 50 SW/SVOD is responsible for providing input regarding the feasibility of the squadron’s ability to support the recommended course of action. The information, evaluation and recommendation are channeled by the 50 SW/SVOD through the chain of command for approval then down to the crews for execution.

Utility Outage Meeting—A weekly meeting that allows the operations community to review all proposed utility outages. Attendees agree on impact and how the community should handle the outage prior to the activity being put on the Utility Outage Schedule.

Utility Outage Schedule—Daily schedule of approved utility outages.

Attachment 2

SAMPLE OF GO/NO-GO CRITERIA SUBMISSION FORMAT



DEPARTMENT OF THE AIR FORCE
 50TH SPACE WING (AFSPC)
 SCHRIEVER AIR FORCE BASE, COLORADO 80912

7 Jul 2009

MEMORANDUM FOR 50 OG/CC

FROM: 2 SOPS/CC

SUBJECT: Recommended GPS II-R Launch Criteria Go/No-Go Criteria

1. Recommend the 50 Space Wing adopt the (Satellite System) launch Go/No-Go criteria given in paragraphs a through f.
2. Before a (Satellite System) launch, the below criteria will be evaluated against current status.

<u>LAUNCH SUPPORT CRITERIA</u>	<u>STATUS</u>	<u>50 SW LAUNCH</u>
a. Control Center/Equipment Status SOC (##) and SOC (##)	OPSCAP RED (note 1) Unable to support 3 simultaneous LEO supports	NO-GO NO-GO
b. Staffing Status Launch Officer Crew Commander Satellite System Operator	Less than 2 Less than 5 Less than 6	NO-GO NO-GO NO-GO
c. Air Force Satellite Control Network Status Reef, Guam-A, Guam-B AFSCN	OPSCAP RED (note 2) (note 3)	NO-GO NO-GO
d. Data/Communication Links Primary and Alternate Primary Secure Voice, Backup Secure voice	OPSCAP RED (note 4) OPSCAP RED (note 5)	NO-GO NO-GO
e. On-Orbit Operations Major Satellite Anomaly	(note 6)	NO-GO
f. Other: N/A		

Notes:

1. Telemetry, tracking, and commanding must be available in either SOC (##) or SOC (##).
2. At least one of these sites must be available for first acquisition tracking, telemetry, and commanding.
3. The launch team will review AFSCN site coverage prior to launch. The team will determine if adequate AFSCN support is available. No hole in coverage of greater than 6 hours can be tolerated. Any holes in coverage, regardless of time length, that jeopardize the safety of the spacecraft will result in a No-Go determination. A determination that inadequate coverage is provided will result in a No-Go.
4. Require at least one Primary or Alternate data link from criteria C to Schriever AFB (SAFB).
5. Require Primary Secure Voice, Backup Secure Voice, or TCSS.
6. There must be no major satellite anomaly in progress for a vehicle in the satellite constellation. Any major anomalies which conflict with launch operations will result in a No-Go determination.
7. Satellite Contractor at Cape Canaveral will be provided the 50th Space Wing Go status through the 50 SW/SVOD.
8. Any changes in the status of the above criteria will be reported immediately to the 50th Space Wing Command Post for up-channeling launch status to AFSPC/CC.
9. If you have any questions, please direct them to (POC) (ext).

(SQ/CC), Lt Col, USAF
Commander

1st Ind, To 2 SOPS/CC, 7 Jul 2007, SOPS GPS II-R Launch Criteria Go/No-Go Criteria
50 OG/CC
Memorandum for 50 NOG/CC
Concur/Non-Concur

(OG/CC), Colonel, USAF
Commander, 50th Operations Group

2nd Ind, 50 OG/CC
Memorandum for 50 MSG/CC
Concur/Non-Concur

(50 NOG/CC), Colonel, USAF
Commander, 50th Network Operations Group

3rd Ind, 50 MSG/CC
Memorandum for 50 SW/CC

(50 MSG/CC), Colonel, USAF
Commander, 50th Mission Support Group

4th Ind, 50 SW/CC
Memorandum For 50 OG/CC, 50 NOG/CC, 50 MSG/CC
Approve/Disapprove

(50 SW/CC)
Colonel, USAF
Commander

Attachment 3

SAMPLE SOC FREEZE REQUEST MEMORANDUM



DEPARTMENT OF THE AIR FORCE

50TH SPACE WING (AFSPC)
SCHRIEVER AIR FORCE BASE, COLORADO 80912

1 Jul 2009

MEMORANDUM FOR 50 OG/CC
50 NOG/CC
50 MSG/CC
50 SW/CC
IN TURN

FROM 2 SOPS/CC

SUBJECT: 2 SOPS GPS II-R Launch SOC Freeze Request

1. Request a SOC freeze to commence at 0001Z on 11 Jul 2007. Frozen assets will include SOC 33 and SOC 42 along with terminals and terminal support equipment, the COR (Modules 17A, 17B and 15), and any support equipment for those assets. This freeze is to support UHF F/O Flight 7 LEO.
2. The freeze affects all hardware, software, and database configuration changes and any facility work requiring entry under the floor and above the ceiling.
3. The freeze will be lifted by 50 OG/CC on or about 20 Jul 2007. Questions should be directed to Capt Smith, DSN 560-3622 or Lt Brown at DSN 560-3625.

JOHN DOE, Lt Col, USAF
Commander

Attachment 4

SAMPLE SCHRIEVER AFB FREEZE REQUEST MEMORANDUM



DEPARTMENT OF THE AIR FORCE
50TH SPACE WING (AFSPC)
SCHRIEVER AIR FORCE BASE, COLORADO 80912

1 Jul 2009

MEMORANDUM FOR 50 OG/CC

FROM 3 SOPS/CC

SUBJECT: Schriever AFB Freeze

1. Request a configuration freeze for Schriever AFB effective 0600Z on 17 Jul 2007 in support of the 19 Oct 2007 UHF/F/O Flight 9 launch. The freeze includes the 50 SW/Network Control Center (Communications Segment MOD 3/4), Secure Voice, and all related maintenance activities such as communications and utility work.
2. A waiver is required before performing any upgrade, preventive maintenance, or other activity that has the potential to impact the mission or change the normal physical or operational configuration of an asset. A waiver is not required to perform corrective maintenance needed to restore operational capability of mission critical equipment.
3. There is an anticipated end date of 28 Jul 2007, 0600Z. If you have any questions, please contact Capt Jones at DSN 560-2241.

JOHN DOE, Lt Col, USAF
Commander

1st Ind, 3 SOPS, 1 Jul 2007, Schriever AFB Freeze
50 OG/CC
Memorandum for 50 NOG/CC
Concur/Non-Concur

(50 OG/CC), Colonel, USAF
Commander, 50th Operations Group

2nd Ind, 50 OG/CC
Memorandum for 50 MSG/CC
Concur/Non-Concur

(50 NOG/CC), Colonel, USAF
Commander, 50th Network Operations Group

3rd Ind, 50 MSG/CC
Memorandum for 50 SW/CC
Concur/Non-Concur

(50 MSG/CC), Colonel, USAF
Commander, 50th Mission Support Group

4th Ind, 50 SW/CC
Memorandum for 50 OG/CC, 50 NOG/CC, 50 MSG/CC
Approve/Disapprove

(50 SW/CC)
Colonel, USAF
Commander

Attachment 5

SAMPLE AFSCN FREEZE REQUEST MEMORANDUM



DEPARTMENT OF THE AIR FORCE
50TH SPACE WING (AFSPC)
SCHRIEVER AIR FORCE BASE, COLORADO 80912

9 Jul 2009

MEMORANDUM FOR 50 OG/CC

FROM 3 SOPS/CC

SUBJECT: AFSCN Resource Freeze Request

1. Request a freeze of AFSCN resources effective 17 Jul 2007, 0600Z to support critical SOC 31 and SOC 42 operations. At this time do not implement modifications or schedule downtime of any AFSCN resources which could affect SOC 31 and SOC 42 operations. This freeze affects the following AFSCN resources: all AFSCN Remote Tracking Stations, TVCF/EVCF, PRIS, PRIO, B/L, PSVS, PSVO (as applicable), all AFSCN Common User Elements, SAFB and 22 SOPS.

2. The following equipment should be protected under this freeze:

- a. Primary Communication Links at SAFB and links under 21 SOPS auspices (as applicable)
- b. Alternate Communications Links at SAFB and links under 21 SOPS auspices (as applicable)
- c. Secure Voice at SAFB and 21 SOPS secure voice (as applicable)
- d. All AFSCN Common User Elements
- e. Schriever AFB Control and Internodal

3. There is an anticipated end date of 28 Jul 2007, 0600Z. Exception: The freeze on RTS BOSS, LION and REEF will be lifted on 29 Jul 2007, 0600Z. The freeze on BEECH will be lifted immediately after lift-off. If you have any questions, please contact Capt Jones at DSN 560-2241.

JOHN DOE, Lt Col, USAF
Commander

1st Ind, to 3 SOPS/CC, 9 Jul 2007, AFSCN Resource Freeze Request
50 OG/CC
Memorandum for 50 NOG/CC
Concur/Non-Concur

(50 OG/CC), Colonel, USAF
Commander, 50th Operations Group

2nd Ind, 50 OG/CC,
Memorandum for 50 MSGG/CC
Concur/Non-Concur

(50 NOG/CC), Colonel, USAF
Commander, 50th Network Operations Group

3rd Ind, 50 MSG/CC
Memorandum for 50 SW/CC
Concur/Non-Concur

(50 MSG/CC), Colonel, USAF
Commander, 50th Mission Support Group

4th Ind, 50 SW/CC
Memorandum for 50 OG/CC, 50 NOG/CC, 50 MSG/CC
Approve/Disapprove

(50 SW/CC)
Colonel, USAF
Commander

Attachment 6

SAMPLE AFSCN FREEZE WAIVER MEMORANDUM



DEPARTMENT OF THE AIR FORCE
50TH SPACE WING (AFSPC)
SCHRIEVER AIR FORCE BASE, COLORADO 80912

7 Jul 2009

MEMORANDUM FOR 50 OG/CC
50 NOG/CC
50 MSG/CC
50 SW/CC
IN TURN

FROM 2 SOPS/CC

SUBJECT: Request Approval of Freeze Waiver

1. Request approval of Freeze Waiver effective 17 Jul 2007, to support critical operations in SOC 31 and SOC 42. The downtime is required to implement software modifications that if not implemented will affect SOC 31 and SOC 42 operations.

- a. Description of Activity:
- b. Proposed Date:
- c. Downtime Required:
- d. Recovery Time:
- e. Contractor Involvement:
- f. Risk Involved:
- g. Benefits if completed:
- h. Justification of urgency:

2. Questions should be directed to Capt Smith at DSN 560-3622 or Lt Brown at DSN 560-3625.

JOHN DOE, Lt Col, USAF
Commander

Attachment 7

LAUNCH NETS CONFERENCING SYSTEM (LNCS)

A7.1. Purpose.

A7.1.1. **The LNCS is used to conduct launch support activities.**

A7.2. Security.

A7.2.1. **The LNCS is an unclassified system.** This system utilizes push-to-talk handsets to reduce background noise from entering the system. It is the responsibility of each user of this system to use it at the unclassified level.

A7.3. System Initialization.

A7.3.1. **The LNCS consists of five nets with five listening devices.** The system is activated by the launch agency or by facility personnel. Once activated, the nets come up in the listen (monitor) mode. When the system is activated, all LNCS speakers located throughout the SOCs will automatically begin receiving communications. The speakers can be turned off by turning the volume control wheel off. If 2-way voice connectivity is required, follow the steps in para 7.4 (steps 7.4.1 through 7.4.4). **Note:** Only the SOC(s) having an active part in launch activities are authorized to establish 2-way voice connectivity, all others can listen to launch activities.

A7.4. Accessing Various Nets to Enable 2-way Voice Connectivity.

A7.4.1. **Remove the handset from the cradle.**

A7.4.2. **Listen for a dial tone.**

A7.4.3. **Press the line button associated with the net required to speak.**

A7.4.4. **By pressing the “#” key, the conference net is established.** The connectivity allows two-way conversation.

Note: If 2-way voice connectivity is needed with any of the other nets, place the net you established on hold and follow the steps in para 7.4. (steps 7.4.1 through 7.4.4).

A7.5. Manual Activation If Unable to Establish Voice Connectivity as Outline In Para 7.4.

A7.5.1. **Remove the handset from the cradle.**

A7.5.2. **Listen for a dial tone.**

A7.5.3. **Dial:** DSN 560-1190 or commercial (719) 567-1190.

A7.5.4. **Listen for the “Welcome” announcement.**

A7.5.5. Dial the desired net number in Attachment 8.

A7.5.6. **Press the “#” key.** You are now connected to the net and have the ability to talk.

A7.5.6.1. **Examples:** to access Net 1. Dial DSN 560-1190 or commercial (719) 567-1190, enter 22731#.

A7.5.6.2. **To access Net 5:** Dial DSN 560-1190 or commercial (719) 567-1190, enter 22735#.

A7.6. Accessing a Net by AFSCN External Users.

A7.6.1. **Remove the handset from the cradle.**

A7.6.2. **Listen for a dial tone.**

A7.6.3. **Dial:** DSN 560-1190 or commercial (719) 567-1190.

A7.6.4. **Listen for the “Welcome” announcement.**

A7.6.5. **Dial the desired net number in Attachment 8, figure A8. 1.**

A7.6.6. **Press the “#” key.** You are now connected to net and have the ability to talk.

A7.7. Releasing the Launch Nets (Disconnecting 2-way Voice Connectivity). Once the launch is completed and the nets are no longer needed, the launch agency or facility personnel will initiate the required procedures to ensure the nets are taken down. **Note:** Personnel who are just listening to any of the launch nets take no action, however, those that established the 2-way connectivity must release the nets, failure to do so will hang-up the system.

A7.7.1. **Remove the handset from the cradle.**

A7.7.2. Press the line button associated with the conference with which you are established.

A7.7.3. **Press the “RLS” (release) key on the telephone.**

A7.7.4. **Repeat steps 7. 7.1 thru 7.7.3** for each conference you established 2-way voice communications.

A7.7.5. **Hang up the hand set.**

A7.8. LNCS Trouble Reporting.

A7.8.1. Contact the Schriever AFB Maintenance Control to report any outages or problems with the LNCS at DSN 560-2666, or commercial (719) 567-2666 (non-secure line). The back-up number is DSN 560-6957, or commercial (719) 567-6957 (secure line).

Attachment 8**LAUNCH NETS CONFERENCING SYSTEM (LNCS) NET AND NET NAMES****Table A8.1. Launch Nets Conferencing System (LNCS) Net and Net Names.**

NETS	NET NAMES	NET NUMBERS
Net 1	Air Force Management to SAFB	22731
Net 2	Spacecraft-3 to SAFB	22732
Net 3	Spacecraft-1 to SAFB	22733
Net 4	Launch Operations to SAFB	22734
Net 5	Tie line to SAFB	22735