

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

50TH SPACE WING INSTRUCTION 10-220

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Incorporating Change 1, 16 July 2015

Operations

***AIR FORCE SATELLITE CONTROL
NETWORK (AFSCN) OPERATIONS
PERFORMANCE SCORING***

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This instruction implements AFI 10-1201, *Space Operations* and AFD 63-5, *Quality Assurance* by establishing requirements, responsibilities, products, and interfaces involved in the management and conduct of Air Force Satellite Control Network (AFSCN) operations. This instruction applies to all activities and organizations supporting and/or under the control of the 50 SW Commander using AFSCN Common User Elements (CUE) and Mission Unique Equipment which are AFSCN controlled resources. This publication does not apply to Air Force Reserve Command (AFRC) Units. Contractor personnel requirements and responsibilities contained within this instruction may be modified for a specific purpose through a validated Performance Work Statement (PWS). The PWS must indicate specific paragraphs that are being modified. References to satellite support scoring in this document refer to internal AFSCN scoring as it pertains to AFSCN Remote Tracking Station (RTS) contractor operations performance scoring, not the support score provided by the satellite operations squadron or satellite operations center in reference to the Mission Impact Report (MIR). Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*. Submit requests for waivers to the Publication OPR for non-tiered compliance items.

SUMMARY OF CHANGES

This interim change revises 50SWI 10-220 by (1) allowing Remote Tracking Station (RTS) Operator performance scoring requirements and responsibilities stated within the instruction to be modified for specific purpose through a validated Performance Work Statement (PWS). This will facilitate AFSCN testing while limiting contractor liability when test requirements contradict or conflict with RTS Operator performance scoring requirements as stated within the content of this instruction. (2) modifying the Opening paragraph to meet updated AFI 33-360 requirements for publication supplementing guidance, waiver request, Records Management statement and change request process. A margin bar (|) indicates newly revised material.

1. Introduction. The objective of the AFSCN is to provide uninterrupted support for space operations. All operational elements must achieve the highest possible standards of performance to meet this objective. The Government Contract established a method of monthly operations performance evaluation for each remote tracking station (RTS) to ensure the contractor performs operations at the highest standards. Telemetry and Commanding Station (TCS) Oakhanger contractor is not part of that contract and is not contractually required to meet a minimum standard. However, site leadership closely monitors the scores and considers 99.6% to be the minimum acceptable standard. The operations performance score is based on the point award scoring system for satellite supports.

2. General. This section describes the criteria used to evaluate mission success and standardization of related practices. It contains terms and definitions that standardize terminology through the AFSCN for all network operations. Satellite support scoring is a key metric used by the 50 SW to assess contractor operations performance. All satellite support resources will be scored using the criteria contained in this instruction. Scoring is derived from MIRs filed against lost or failed supports that are directly attributed to the contractor personnel or equipment. See [Table 1](#) for satellite support definitions.

Table 1. Satellite Support Definitions

Lost Support	<p>Problems were encountered during the satellite support that resulted in not meeting all mission objectives defined by operational directives or pre-established by the unit, and the user, responsible for mission payload data was impacted.</p> <p>Some examples of a lost support include:</p> <ul style="list-style-type: none"> -Time-critical or time-specific commanding could not be performed on time that results in user impact such as a loss or degradation of communication satellite capability or the postponement of a satellite maneuver and cannot be rescheduled. - Mission data is lost or unrecoverable within user specified time limits (i.e. loss of mission payload data such as Defense Meteorological Satellite Program (DMSP) imagery data, various programs Infrared (IR) data, Intelligence-Surveillance-Reconnaissance (ISR) data, and other mission payload data) or is unusable. A data loss can be a direct result of site equipment failure, communications malfunction/failure, space vehicle problem, procedural error, or personnel error.
Failed Support	<p>Problems were encountered during the support resulting in the failure to meet all planned mission objectives of the support defined by operational directives or pre-established by the unit, but the user was not impacted.</p> <p>Some examples of failed supports include:</p> <ul style="list-style-type: none"> - Unit unable to comply with Operational Requirements Document (ORD) (State of Health, Track, critical space vehicle equipment adjustments, Delta V & I, etc.) due to support problems, but can accomplish the requirements at a later time without impact to the user (i.e. only loss of state of health telemetry data, ranging, etc).
Marginal Support	<p>Problems were encountered during the support but all mission objectives were met and the user was not impacted.</p> <p>Some examples of marginal supports include:</p> <ul style="list-style-type: none"> - Any equipment problems that occurred during the support that required a substitution at the RTS, communications segment, or at the satellite operations center (SOC), to include any significant mission impacting equipment, AFSCN problems, or communications problems. - Problems sending commands on time but mission objectives still met.
Nominal Support	<p>100% of all mission objectives were successful. No problems were encountered during pre-pass, pass and post pass.</p>

3. Satellite Types. The criteria for satellite types are based on the difficulty for the RTS to contact the vehicle. A Type 1 satellite is usually designated as a low earth orbiting satellite. A Type 2 satellite orbit is a semi-synchronous or highly elliptical orbit. A Type 3 satellite is in a geosynchronous or geostationary orbit. A satellite will be designated as Type 1 in pre-launch and early orbit, and will hold that designation until it reaches its designated orbit. Each Satellite Operations Center (SOC) or Mission Control Complex (MCC) must send a letter depicted in **Attachment 2**, to 22 SOPS/MAF whenever a satellite's type changes, such as launch, early orbit and final orbit. If a letter is not received from the user to 22 SOPS typing the respective satellite(s), those vehicles will not be typed and subsequently not scored. Playbacks will be scored 1 point regardless of inter-range operations number (IRON) Type.

4. Satellite Support. Defined as an event for the reception and/or transmission of information between a space vehicle (SV) and the SOC or MCC. A support consists of a Prepass and Pass. All playbacks will be scored separately. The specific related "Function Codes" that are shown on the Network Tasking Order are identified in Table 2.

Table 2. Function Codes

FLT	A flight activity of an on-orbit satellite as compared to a non-flight activity such as maintenance
PART	Each satellite is visible at certain antennas for a period of time and will support that satellite for a portion of its visibility
PASS	Will support that satellite for its entire visibility, horizon to horizon
P/B	Playback, used to play back recorded information from the RTS to a customer

5. Major Modifications. If a site is down due to a major modification, the side of the site will be scored after the RTS Commander has signed Operations and Maintenance Responsibility Transfer (OMRT) with concurrence of 22 SOPS/CC. OMRT is defined in the 50th Space Wing Supplement to AFSCN TR-9000. Mission impact reports MIR will be submitted prior to OMRT and used for tracking problems only and will not be included into the operational performance scoring process.

6. Equipment Outages.

6.1. Reported before Estimated Time of Acquisition (ETA) -25 minutes. If a station does not meet success criteria during a support due to an amber or red equipment outage reported earlier than 25 minutes before the scheduled start time, the support affected is considered successful, and no points will be deducted. MIRs will still be reported and accepted by the Network Operations Center (NOC). Successful support is defined as "Nominal" described in Table 1.

6.2. Reported after ETA -25 minutes. Outages reported less than 25 minutes before the scheduled start time will have an effect on scoring, unless the outage meets scoring exception criteria identified in paragraphs 6.3 and 6.4; that is, points may be given if success criteria were met, or deducted if success criteria were not met.

6.3. Backup, Redundant, and Nonstandard Equipment. The unavailability of backup or redundant equipment does not exempt a support from being scored. However, if a site is required to support with nonstandard hardware or non-AFSCN facilities, the support will be

scored successful, if a failure is due to the nonstandard hardware or non-AFSCN facility. Nonstandard hardware is hardware that is installed for a particular mission, will be pulled out after that mission is completed and has not gone through the Space and Missile Systems Center (SMC) configuration control board. Non-AFSCN facilities are facilities, such as the Naval Satellite Operations Center (NAVSOC) or National Oceanic and Atmospheric Administration (NOAA) that have not had their equipment approved by the SMC configuration control board.

6.4. Test Support. A test support is scheduled to investigate or verify hardware, software, communications, procedural problems or solutions. These supports may also be used to accomplish other mission objectives. Test supports will not be scored. A MIR is required for lost, failed, or marginal test supports and 22 SOPS/MAF uses the MIR for tracking and trending network problems.

7. Support Scoring. 22 SOPS/MAF scores all scheduled activity as successful unless a lost or failed MIR has been submitted. This includes situations where the MCC/SOC deletes routine procedural steps (i.e. pre-pass checks, read-backs, etc.) and elects to have the Automated Remote Tracking Station (ARTS) operator conduct nonstandard configurations that could have prevented the problem support.

7.1. A Type 3 satellite is scored as one point, a Type 2 satellite is scored two points, and a Type 1 satellite is scored three points. If a satellite support has been supported and the support provided does not meet mission success criteria (due to contractor personnel or equipment) 22 SOPS/MAF will deduct points.

7.2. Scoring Exceptions. Problems caused by circumstances outside of the direct control of the contractor or TCS Oakhanger Operations contractor will not be scored against an RTS. This includes intermittent Control & Status (C&S) software problems that cannot be resolved by level 2 software support; failure to meet mission requirements due to hardware or software design deficiencies; problems caused by the loss of facility equipment (Uninterruptible Power Supply (UPS), Heating, Ventilation, and Air Conditioning (HVAC) etc., not maintained by the contractor or TCS Oakhanger Operations contractor; problems resulting from faulty spares removed from supply; NAVSOC Automated Track Supports; and, problems resulting from non contractor or TCS Oakhanger Operations contractor action (Depot level maintenance personnel, etc.).

7.3. Short and Negative Turnaround Support Scoring. A support is scored successful if the standard station-turnaround time, defined in the Operations (OPS) Directive (OD) document for the IRON concerned is not available and, as a result, the support was lost or failed. If the lack of success was due to a station personnel error or equipment failure unrelated to the short turnaround, further review of the support circumstances will be taken into consideration to determine if points will be deducted.

8. Scoring Percent Calculation. 22 SOPS/MAF calculates the score for each RTS at the end of each month to provide a quantitative evaluation of each site's operational performance. The operational scores are computed using the equation in following figure:

Figure 1. Operations Performance Scoring

Operational Performance Scores	=	$\frac{(\text{Total Possible Points}) - (\text{Total Point Loss})}{(\text{Total Possible Points})}$
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8.1. Percentages will be rounded to the nearest thousandth (for example, 0.9954 would be rounded to 0.995). An RTS must maintain a monthly minimum score of 0.996 and a yearly score of 0.998.

8.2. If an RTS has less than 500 points per month with a score lower than .996, overall site performance will be examined to determine if performance meets Statement Of Work (SOW) requirements. A decision for fee reduction will be made IAW inspection of the service clause. This does not apply to TCS Oakhanger.

9. Scoring Conflict Resolution. 22 SOPS/MAF and the contractor's Office of Primary Responsibility (OPR) will conduct routine discussions to resolve any scoring conflict. Any scoring conflict that can't be resolved are elevated to the 50 NOG Program Management Office (PMO), who is the final resolution authority. The PMO then forwards this decision to the contracting officer for any deduction of the contractor's award fee. This does not apply to TCS Oakhanger, except the site works directly with 22 SOPS/MAF to resolve any scoring conflicts.

10. Monthly Summaries. 22 SOPS/MAF prepares a monthly and annual scoring summary for the contracting officer and the contractor. 22 SOPS/MAF mails information copies to each site commander.

WAYNE R. MONTEITH, Colonel, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 10-1201 *Space Operations*, 25 July 1994

AFI 63-5 *Quality Assurance*, 25 August 2003

AFSCN TR-9000, Air Force Satellite Control Network Turnover Plan for SMC/CW Developed Products, 25 March 1998

Abbreviations and Acronyms

AFSCN—Air Force Satellite Control Network

C&S—Control and Status

CUE—Common User Element

DLT—Data Link Terminal

ETA—Estimated Time of Acquisition

HVAC—Heating, Ventilation, and Air Conditioning

IRON—Inter-Range Operations Number

MCC—Mission Control Complex

MIR—Mission Impact Report

MUE—Mission Unique Equipment

NOAA—National Oceanic and Atmospheric Administration

NAVSOC—Naval Satellite Operations Center

NOC—Network Operations Center

OD—Operations Directive

OMRT—Operations and Maintenance Responsibility Transfer

PMO—Program Management Office

RTS—Remote Tracking Station

SMC—Space and Missile Systems Center

SOC—Satellite Operations Center

SOW—Statement of Work

SV—Space Vehicle

TCS—Telemetry and Commanding Station

UPS—Uninterruptible Power Supply

Attachment 2

SPACECRAFT TYPE SAMPLE LETTER

Figure A2.1. Sample Letter

	<p>DEPARTMENT OF THE AIR FORCE 50TH SPACE WING (AFSPC)</p>
<p>MEMORANDUM FOR 22 SOPS/MAF</p>	<p>06 May 2004</p>
<p>FROM: ORGANIZATION/OFFICE</p>	
<p>SUBJECT: Designation of Spacecraft Type (IRON XXXX)</p>	
<p>1. For the purpose of Operations Performance scoring, please designate IRON XXXX a "type one" space vehicle from 22/0000Z 10 May 2004 until 28 May 2004. After this Launch and Early Orbit Period, please designate IRON XXXX as a "type three" space vehicle.</p> <p>2. Please direct any questions to my POC, NAME/RANK/ORGANIZATION/PHONE.</p>	
<p>(Signed) NAME/RANK/ORGANIZATION TITLE</p>	