

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

**50TH SPACE WING INSTRUCTION  
33-101**



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***Communications and Information***

***AFSCN COMMUNICATIONS OUTAGE  
RESOLUTION***

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This publication implements Air Force Technical Order 00-33A-1001, *General Communications Activities Management Procedures and Practice Requirements* and provides guidance for all Air Force Satellite Control Network (AFSCN) and applies to all organizations listed in **Table 1** on resolving AFSCN outage conditions. 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. This does not apply to Air National Guard (ANG) and Air Force Reserve (AFRC) units. Refer recommended changes and questions about this publication to the OPR listed above using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). This publication may be supplemented at any level, but all supplements must be routed to the Office of Primary Responsibility (OPR) listed above for coordination prior to certification and approval.

***SUMMARY OF CHANGES***

Changes incorporated into this document include: revising the Overview paragraph; revising certifying official; removing any references to specific carrier agencies, equipment models, and communications types; adding responsible work centers and their responsibilities thereof; redefining roles and responsibilities of work centers; adding references to 50SWI10-224, *AFSCN Outage Reporting System*; correcting technical reference titles, minor spelling errors and some language usage.

## 1. Overview.

1.1. This chapter provides an overview of the AFSCN organizations, systems, products, and terminology. The AFSCN is a global ground and space-based network comprised of two Operational Control Nodes (OCNs), land and space based Defense Information Systems Agency (DISA) communications connectivity, seven Remote Tracking Stations (RTSs) and one test resource facility dedicated to support Department of Defense (DOD) communications, weather, research and development and intelligence gathering space programs. Operational Switch Replacement (OSR) is a dynamic communication environment that uses inter-dependent and redundant communications systems and links. Due to this network implementation, user coordination for Fault Detection/Fault Isolation and fault recovery activities between the OCNs and RTSs is of paramount importance to resolve network communications outages.

## 2. Organizations.

2.1. The various agencies, facilities and work centers involved in outage resolution are described in [Table 1](#)

2.2. Many agencies and work centers coordinate efforts on shared voice nets or voice conferences. Call-signs are used to help distinguish between organizations on a net. The organizational descriptions in [Table 1](#) include call signs used by those agencies.

**Table 1. Organizations and Call Signs.**

Organization	Work Center	Call-sign
21 SOPS	AFSCN Network Control Center (ANCC)	Comm Control
21 SOPS	Crypto Operations	Dice Comm
21 SOPS	AFSCN System Administrator	Dice Sys Admin
21 SOPS	Patch and Test Facility (PTF)	Dice Tech
21 SOPS	Vandenberg Tracking Station (VTS)	Cook
21 SOPS, Det 1	Diego Garcia Tracking Station (DGS)	Reef
21 SOPS, Det 2	Guam Tracking Station (GTS)	Guam
21 SOPS, Det 3	Hawaii Tracking Station (HTS)	Hula
22 SOPS	AFSCN Crew Commander (CMDR)	Crew Commander
23 SOPS	New Hampshire Tracking Station (NHS)	Boss
23 SOPS, Det 1	Thule Tracking Station (TTS)	Pogo
23 SOPS, OL-A	Oakhanger Telemetry and Command Station	Lion
50 SCS	Tech Control Facility (TCF)	Schriever Tech
50 SCS	Telecommunications Control Center (TCC)	TCC
50 SCS	AFSCN System Administrator	SAFB Sys Admin

**3. Coordination Procedures.** To ensure all actions that could affect AFSCN communications are properly coordinated, there are specific coordination procedures that must be followed. These coordination procedures are included in [Attachment 2](#). **NOTE:** Many coordination procedures are used during the resolution of communication outages, but some coordination procedures will occur on a regular basis as a part of preventative maintenance, scheduled downtimes and crypto operations. These coordination procedures must be followed to prevent any communication outages.

3.1. All coordination procedures follow these basic precepts:

3.1.1. Any action that will affect the normal operation of OSR communication equipment requires prior coordination with 22 SOPS, 50 SCS and 21 SOPS.

3.1.2. All those involved in an OSR communication effort will meet on the OSR Tech Net before taking any action.

3.1.2.1. If the OSR Tech Net becomes unavailable, all parties will make all efforts to coordinate with the applicable parties through whatever means are available.

3.1.3. If any anomaly or outage condition occurs during a routine crypto operation, administrative change or maintenance effort, all further actions will be suspended while 21 SOPS and 50 SCS investigate the cause of problem.

#### **4. OSR Tech Net.**

4.1. The OSR Tech Net is a conference that facilitates coordination between agencies while troubleshooting is in progress. It is established on the Vandenberg Air Force base (VAFB) Conference Bridge.

4.1.1. 30 SW tenant performs routine maintenance on the VAFB Conference Bridge located in building 12006.

4.2. ANCC will continuously monitor the Tech Net when connected with the VAFB Conference Bridge and will oversee, assist and coordinate in any technical effort.

4.3. AFSCN communication work centers have direct access to the OSR Tech Net via administrative phones. When needed, ANCC will contact the work center to have the area access the OSR Tech Net.

4.4. 21 SOPS and 50 SCS will request AFSCN work centers and users to join the OSR Tech Net as needed to aid troubleshooting efforts.

4.5. All agencies and work centers can access the respective OSR Tech Nets by dialing directly into the Schriever Air Force Base (SAFB) Conference Bridge at commercial (719) 567-1117 or DSN 312-560-1117, and entering the conference with 2666#, or by dialing into the VAFB Conference Bridge at commercial (805) 606-9960 or DSN 276-9960, and entering the conference with 2666#.

4.5.1. Should ANCC not be readily available on the OSR Tech Net, immediately contact ANCC directly at commercial (805) 605-3840 or DSN 312-275-3840.

4.5.2. ANCC will ensure net discipline is maintained on the OSR Tech Net by all parties during the troubleshooting effort.

#### **5. Responsibilities.**

##### **5.1. AFSCN Users:**

5.1.1. Contact 22 SOPS CMDR immediately upon identification of an outage condition. Failures are to be reported as soon as possible, but no later than 15 minutes after occurrence or outage declaration.

5.1.2. Note anomalies during sorties and report them to 22 SOPS CMDR within 15 minutes for tracking and analysis. Ref: 50SWI 10-217 Chapter 6

**5.2. 21 SOPS AFSCN Network Control Center (ANCC):**

- 5.2.1. Primary maintenance authority for all AFSCN communication outages that affects both SAFB and VAFB OCNs
- 5.2.2. Monitors AFSCN communications.
- 5.2.3. Coordinates with 50 SCS TCF for any SAFB OSR troubleshooting efforts.
- 5.2.4. Reports AFSCN Outage Conditions IAW 50SWI10-224.
- 5.2.5. Coordinates with 22 SOPS to obtain any needed windows or downtimes required to perform restoration actions or troubleshooting efforts.
- 5.2.6. Responsible for submitting downtime requests for VAFB AFSCN Defense Red Switch Network (DRSN) crypto updates.

**5.3. 50 SCS Technical Control Facility (TCF):**

- 5.3.1. Acts as a backup to the ANCC in the event of a failure or operations transfer.
- 5.3.2. Monitors AFSCN communications.
- 5.3.3. Reports communication outage conditions to the ANCC.
- 5.3.4. Coordinates with ANCC for any OSR troubleshooting efforts.
- 5.3.5. Responsible for submitting downtime requests for 50 SCS crypto material changes.

**5.4. 22 SOPS Plans and Scheduling:**

- 5.4.1. Track AFSCN resource status for real-time scheduling.
- 5.4.2. Ensures up-to-date AFSCN resource status is available to all AFSCN elements.
- 5.4.3. Processes real-time and forecasted downtime requests.

**5.5. Remote Tracking Station Communication Areas:**

- 5.5.1. Contact ANCC immediately upon identification of any communication outage condition. Failures are reported as soon as possible, but no later than 15 minutes after occurrence or outage declaration.
- 5.5.2. Note anomalies during sorties and report them within 15 minutes for tracking and analysis.
- 5.5.3. Join ANCC and TCF on the OSR Tech Net to assist in any OSR troubleshooting efforts involving that site.
- 5.5.4. Contact ANCC and TCF prior to performing any maintenance on OSR equipment or crypto updates.

**5.6. 50 SCS Technical Control Center (TCC):**

- 5.6.1. Responsible for maintenance support on SAFB and External User's Wide Area Network Interface Units (WANIUs)
- 5.6.2. Coordinates with 50<sup>th</sup> Job Control for work authorization prior to conducting maintenance.

5.6.3. Contacts ANCC prior to conducting any AFSCN communication segment maintenance.

5.6.4. Administer AFSCN domain login credentials.

**5.7. AFSCN System Administrator:**

5.7.1. Perform systems administration services in support of operating systems software, applications software, systems management software, systems security software and supporting software structure to include firmware.

**5.8. 21 SOPS Patch & Test Facility:**

5.8.1. Provides on-site capability for patch and test, crypto operations and OSR maintenance.

**5.9. SAFB DRSN Switch:**

5.9.1. Assists in troubleshooting any loss of AFSCN SAFB secure voice services.

5.9.2. Responsible for updating/reloading secure voice crypto material.

**5.10. VAFB DRSN Switch:**

5.10.1. Assists in troubleshooting any loss of AFSCN VAFB secure voice services.

5.10.2. Responsible for updating/reloading secure voice crypto material.

**6. Restoration Checkouts:**

6.1. After restoration of any AFSCN communications, ANCC will ensure that all services have been restored to nominal levels prior to closing network outages IAW 50SWI10-244.

6.1.1. Prior to an outage being closed any service affected or potentially affected by a communication outage should be tested to ensure nominal capability is restored.

JENNIFER L. GRANT, Colonel, USAF  
Commander

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

**Air Force Technical Orders (T.O. 00-33A-1001)**, *General Communications Activities Management Procedures and Practice Requirements*, 14 Jul 16

**Air Force Manual 33-363**, *Management of Records*, 1 March 2008

**50SWI 10-224**, *AFSCN Outage Reporting System*, 24 June 2013, incorporating Change 1, 11 Oct 2016.

**50SWI 10-217**, *AFSCN Users' Operations Instructions*, 17 May 2013, incorporating Change 4, 8 May 2017

***Prescribed Forms***

None

***Adopted Forms***

**AF 847**, *Recommendation for Change of Publications*

***Abbreviations and Acronyms***

**ANCC**—AFSCN Network Control Center

**AFSCN**—Air Force Satellite Control Network

**DCC**—Distributed Communications Controller

**DET**—Detachment

**DRSN**—Defense Red Switch Network

**FD/FI**—Fault Detection/Fault Isolation

**CDR**—Crew Commander

**OCN**—Operational Control Node

**OSR**—Operational Switch Replacement

**SAFB**—Schriever Air Force Base

**SCS**—Space Communications Squadron

**SOPS**—Space Operations Squadron

**TCF**—Technical Control Facility

**RTS**—Remote Tracking Stations

**VAFB**—Vandenberg Air Force Base

**WANIU**—Wide Area Network Interface Unit

## Attachment 2

### COORDINATION PROCEDURES

**A2.1. Crypto Operations.** All crypto operations coordination procedures apply to the following six agencies: 21 SOPS Network Director (ANCC), 50 SCS TCF (Schriever Tech), 21 SOPS Crypto Operations (Dice Comm), Schriever/Vandenberg DRSN Switch personnel and a Remote Tracking Station Communications area (RTS Comm).

A2.1.1. Additional Path Aggregate Crypto Material Changes: RTS Comm, Dice Comm and SAFB TCF will initiate this coordination procedure based on the given schedule for crypto material changes. Coordination is required on a situational basis as normal Crypto Material Changes for Firefly Vector Set Keying Material could occur at different dates for different locations.

A2.1.1.1. ANCC, Schriever Tech, RTS Comm, will meet on the OSR Tech Net. NOTE: Should any anomalies or outage conditions occur during the crypto material change, RTS Comm will inform ANCC and Schriever Tech. Crypto material changes will be suspended while ANCC and Schriever Tech investigate.

A2.1.1.2. RTS Comm will coordinate with Schriever Tech and Dice Comm for the required crypto material change as per local procedures.

A2.1.1.3. RTS Comm will notify Schriever Tech and/or ANCC when the crypto material change has been accomplished successfully.

A2.1.1.4. ANCC and/or Schriever Tech will coordinate the restoration of any required connections that were dropped earlier.

A2.1.1.5. Secure Voice Crypto Material Changes. RTS Comm will initiate this coordination procedure based on the given schedule for crypto material changes.

A2.1.2. Schriever Tech, RTS Comm, and Schriever/Vandenberg DRSN personnel will coordinate with RTS Comm to update Secure Voice crypto material changes. NOTE: Should any anomalies or outage conditions occur during the crypto material change, RTS Comm will inform ANCC. Crypto material changes will be suspended while ANCC investigates.

A2.1.2.1. RTS Comm will request ANCC coordinate the restoration of the DRSN connections if there is a loss of connectivity. Once connections have been restored, Schriever Tech and/or ANCC will inform RTS Comm that they may proceed.

A2.1.2.2. RTS Comm will coordinate with Schriever Tech and Dice Comm the required crypto material change as per local procedures.

A2.1.2.3. RTS Comm will notify Schriever Tech and/or ANCC when the crypto material change has been accomplished successfully.

A2.1.2.4. ANCC will coordinate restoral of secure voice connections that were dropped for the crypto material change, if required.



A2.1.3. Crypto Restarts. ANCC and Schriever Tech will initiate this coordination procedure based on a given outage condition. Should a routine maintenance action require a crypto restart to take place, ANCC and Schriever Tech will be contacted to coordinate. **NOTE:** Any work center discovering a crypto down will immediately notify ANCC and Schriever Tech. ANCC and Schriever Tech will investigate and direct further action.

A2.1.3.1. ANCC, Schriever Tech, RTS Comm and Dice Comm will meet on the OSR Tech Net.

A2.1.3.2. ANCC and Schriever Tech will direct the restart of the crypto.

A2.1.3.3. ANCC and Schriever Tech will ensure full capability is restored.

A2.1.4. Crypto Material Reload. ANCC and Schriever Tech will initiate this coordination procedure based on a given outage condition. If a routine maintenance action requires a crypto material reload to take place, ANCC and Schriever Tech will be contacted to coordinate the reload.

A2.1.4.1. ANCC, Schriever Tech, RTS Comm and Dice Comm will meet on the OSR Tech Net.

A2.1.4.2. ANCC and Schriever Tech will direct the reload and restart of the crypto.

A2.1.4.3. ANCC and Schriever Tech will ensure full capability is restored.

A2.1.5. Crypto Replacement. ANCC and Schriever Tech will initiate this coordination procedure based on a given outage condition. Should a routine maintenance action require a crypto replacement to take place, ANCC and Schriever Tech will be contacted to coordinate.

A2.1.5.1. ANCC and Schriever Tech will ensure that an AFSCN outage or scheduled downtime exists prior to conducting any maintenance that will or may disrupt AFSCN mission traffic.

A2.1.5.2. ANCC, Schriever Tech, RTS Comm and Dice Comm will meet on the OSR Tech Net.

A2.1.5.3. ANCC and Schriever Tech will direct the replacement, reload and restart of the crypto.

A2.1.5.4. ANCC and Schriever Tech will ensure full capability is restored.

**A2.2. Communication Equipment.** All communication equipment coordination procedures involve the following agencies: ANCC, Dice Comm, Schriever Tech, and a RTS Comm.

**A2.3. WANIU Reboot, Power Down and Power Up, or Configuration Reload/Restoration.** ANCC and TCC will initiate this coordination procedure based on a given outage condition. Should a routine maintenance action require a WANIU power down or configuration change, ANCC and TCC will be contacted to coordinate.

A2.3.1. ANCC, affected RTS Comm(s) will meet on the OSR Tech Net. If a VAFB WANIU is affected, Dice Maintenance will join the OSR Tech Net. If a SAFB WANIU is affected, TCC will join the OSR Tech Net.

A2.3.2. ANCC and TCC will ensure that an AFSCN outage or scheduled downtime exists prior to conducting any maintenance that will or may disrupt AFSCN mission traffic.

A2.3.3. ANCC will direct the reboot, power down, any appropriate maintenance and/or power up of designated WANIU equipment.

A2.3.4. ANCC and TCC will ensure full capability is restored.

**A2.4. AFSCN Router/Switch- Power Up/Down, Configuration Reload/Restoration.** ANCC and AFSCN System Administrator will initiate this coordination procedure based on a given outage condition. If a routine maintenance action requires an AFSCN Router/Switch power down or configuration change, ANCC and AFSCN System Admin will be contacted to coordinate or schedule a downtime with 22 SOPS Range/Plans.

A2.4.1. ANCC, affected RTS Comm(s), and AFSCN System Administrator will meet on the OSR Tech Net. If the VAFB AFSCN Router/Switch is affected, Dice Sys Admin will join the OSR Tech Net. If a SAFB AFSCN Router/Switch is affected, SAFB Sys Admin will join the OSR Tech Net.

A2.4.2. ANCC and AFSCN System Administrator will ensure that an AFSCN outage or scheduled downtime exists prior to conducting any maintenance that will or may disrupt AFSCN mission traffic.

A2.4.3. ANCC will direct the power down, appropriate maintenance actions, and/or power up of affected equipment.

A2.4.4. ANCC and AFSCN System Administrator will ensure full capability is restored.

**A2.5. AFSCN Router/Switch/Server Module Hot Swap.** ANCC and AFSCN System Administrator will initiate this coordination procedure based on a given outage condition. If a routine maintenance action requires an AFSCN Router/Switch module swap, ANCC and AFSCN System Administrator will be contacted to coordinate.

A2.5.1. ANCC, affected RTS Comm(s), and AFSCN System Administrator will meet on the OSR Tech Net. If a VAFB module is being swapped, Dice Maintenance will join the OSR Tech Net. If a SAFB module is being swapped then the AFSCN System Administrator may include the TCC, if deemed necessary.

A2.5.2. ANCC and AFSCN System Administrator will ensure that an AFSCN outage or scheduled downtime exists prior to conducting any maintenance that will or may disrupt AFSCN mission traffic.

A2.5.3. ANCC and AFSCN System Administrator will ensure the module is free of any traffic.

A2.5.4. ANCC and AFSCN System Administrator will direct the module swap.

A2.5.5. ANCC and AFSCN System Administrator will ensure full capability is restored.

**A2.6. Miscellaneous Communications Equipment Power Down and Power Up or Configuration Reload/Restoration.** ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will initiate this coordination procedure based on a given outage condition. Should a routine maintenance action require a power down or configuration change then ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will be contacted to coordinate.

A2.6.1. ANCC, affected RTS Comm, Schriever Tech, TCC and/or AFSCN System Administrator will meet on the OSR Tech Net. If VAFB equipment is affected, Dice Maintenance will join the OSR Tech Net.

A2.6.2. ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will ensure that an AFSCN outage or scheduled downtime exists prior to conducting any maintenance that will or may disrupt AFSCN mission traffic.

A2.6.3. ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will direct the power down, appropriate maintenance actions and/or power up of affected equipment.

A2.6.4. ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will ensure full capability is restored.

**A2.7. Miscellaneous Communications Equipment Card Reset.** ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will initiate this coordination procedure based on a given outage condition. Should a routine maintenance action require a card reset, ANCC and Schriever Tech will be contacted to coordinate.

A2.7.1. ANCC, affected RTS Comm(s), and Schriever Tech, TCC and/or AFSCN System Administrator will meet on the OSR Tech Net. If a VAFB card is affected, Dice Maintenance will join the OSR Tech Net.

A2.7.2. ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will ensure that an AFSCN outage or scheduled downtime exists prior to conducting any maintenance that will or may disrupt AFSCN mission traffic.

A2.7.3. ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will direct the card reset.

A2.7.4. ANCC, Schriever Tech, TCC and/or AFSCN System Administrator will ensure full capability is restored.

**A2.8. Path Procedures.** All path procedures involve the following AFSCN agencies: ANCC, Schriever Tech and any appropriate carrier agency for the communications path.

**A2.9. Serial Communications Testing or Downtime.** ANCC and Schriever Tech will initiate this coordination procedure based on a given outage condition or scheduled downtime. ANCC and Schriever Tech do this to prevent AFSCN traffic from routing over the serial communications given over to the carrier agency for testing during an outage or for scheduled maintenance.

A2.9.1. ANCC, affected RTS Comm(s) and SATCOM(s) and Schriever Tech will meet on the OSR Tech Net.

A2.9.2. ANCC and Schriever Tech will ensure the serial communication ports are free of traffic.

A2.9.3. ANCC and Schriever Tech will contact the carrier agency to proceed with testing or downtime.

A2.9.4. ANCC and Schriever Tech will ensure full capability is restored upon return of service from the carrier agency.

**A2.10. Inter-nodal Communications Testing or Downtime.** ANCC and Schriever Tech will initiate this coordination procedure based on a given outage condition or scheduled carrier agency downtime. ANCC and Schriever Tech takes this action to prevent AFSCN traffic from routing over inter-nodal communications given over to the carrier agency for testing during an outage or for scheduled maintenance.

A2.10.1. ANCC, Dice Tech and Schriever Tech will meet on the OSR Tech Net.

A2.10.2. ANCC and Schriever Tech will ensure inter-nodal communication is free of traffic.

A2.10.3. ANCC and Schriever Tech will direct the shutdown of both inter-nodal communication interfaces to prevent any new traffic.

A2.10.4. ANCC and Schriever Tech will contact the carrier agency to proceed with testing or their downtime.

A2.10.5. ANCC and Schriever Tech will direct the restoration of the interface upon return of service from the carrier agency.

A2.10.6. ANCC and Schriever Tech will ensure full capability is restored.