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Operations



AIR FORCE SATELLITE CONTROL NETWORK  
VOICE PROCEDURES

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This instruction implements AFD 10-2, *Air Force Readiness Program* and provides guidance for voice procedures for the Air Force Satellite Control Network (AFSCN). These voice procedures apply to all activities, organizations supporting and/or under operational control of the 50 SW Commander, organizations using the AFSCN common-user resources, and contractors tasked by this instruction as stipulated by contract. Each squadron, detachment, organization, section, or operational area may develop supplements to this instruction. Send one copy of each to 50 OG/OGV, 300 O'Malley Ave, Suite 51, Schriever Air Force Base (SAFB) CO 80912-3051. Send comments and suggested improvements on AF Form 847, Recommendation for Change of Publication, through channels to 50 OG/OGV, 300 O'Malley Ave, Suite 51, Schriever AFB, CO 80912-3051. **NOTE:** NAVSOC Automated Track Supports are exempt from these procedures since there is no voice connectivity between the Satellite Operations Center (SOC) and Remote Tracking Station (RTS).

SUMMARY OF REVISIONS

This instruction will replace the following 50 OG/OGV policy letters: *Multi-Line-Phone Policy, dated 20 Aug 96; 50 OG Telephone Security Policy, dated 1 Oct 02; 50 OG Voice Net Procedure Policy, dated 5 Oct 98; "HOT" Configuration Net Procedures, dated 17 Sep 99.*

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**1. Purpose** The purpose of this instruction is to establish a single, primary source of standard voice procedures for conducting satellite operations in the AFSCN community.

**2. Security. NOTE:** The following security procedures apply to all SOCs (see [Attachment 1](#) for definition of SOC) and RTSSs. All AFSCN External users (NOPS, NOAA, SBIRS, MESA, KING, etc.) must also utilize these procedures or similar local security procedures when using AFSCN resources to conduct satellite operations.

2.1. Each organization is responsible to ensure only personnel with the appropriate security clearances and a need-to-know are permitted access to the secure voice system.

2.2. When personnel are using telephones to discuss classified information, all parties must prepare for secure communications. Individuals about to initiate a classified conversation are responsible to inform everyone on the net that all parties must ensure their area is cleared for classified discussion. The person initiating the secure call will state, **“initiating a secure call,” or similar verbiage**, informing personnel in the room that classified information will be discussed. At this point, personnel will make a physical check of the area, and direct any uncleared personnel to exit the room immediately. Each individual is responsible to inform all parties on the net if their area is not secure or cleared for classified discussion. When personnel are terminating a secure call, the person will state, **“end secure call,” or similar verbiage**.

2.3. It is essential we protect the information associated with DoD satellites by employing proper OPSEC/COMSEC procedures.

2.4. Personnel using administrative telephones in areas where there is a potential for classified/sensitive information to be discussed (e.g., operations floors, Crisis Response Elements (CREs), orbital analysis shops, operations plans, RTSSs, etc.) will utilize open/closed line procedures as defined by this instruction. Whenever personnel use administrative telephones in an operations area, before they pick up the phone they will state **“OPEN LINE.”** informing the entire floor an unsecured phone line is open. When they have completed their call they will state, **“LINE DOWN.”** **NOTE:** Push-to-talk handsets on administrative phones **do not** afford required protection for classified discussions while an unsecured line is open. The push-to-talk handsets on the Integrated Services Telephones (IST) **do** afford required protection for classified discussions.

2.5. If, during a secure call an unsecured phone rings, briefly halt the classified discussion on both ends of the secure phone call, pick up the unsecured phone line and determine whether that phone call has priority over the secure call (e.g., injury, emergency situation, etc.). If the unsecured call is more important, inform the person on the secure call to hold or end the secure phone call, and handle the situation accordingly. If the unsecured phone call is not as important, inform the person on the unsecured line to call back later, hang up the unsecured line and continue with the classified discussion. **NOTE:** Operators should use sound professional judgment when picking up an unsecured phone line. Always coordinate with people having a classified discussion prior to picking up the unsecured phone.

2.6. Secure voice systems will be used to verbally direct 22 SOPS Network Schedulers to alter the Network Tasking Order. Users will use point-to-point Secure Voice (SV) System to call Network Scheduling. Users not equipped with SV systems may pass information to Network Scheduling via Secure Telephone Equipment (STE) or Secure Telephone Unit III (STU III) telephones.

2.7. Personnel discussing sensitive, unclassified information that is mission related should consider using secure communications in order to preclude the compilation of unclassified information potentially revealing mission related activities.

2.8. Additional handsets, headsets and speakers will be disconnected or turned off during classified discussions.

2.9. Interference impacting a satellite contact should be immediately reported to the affected SOC. Use a controlled access secure voice net or a point-to-point secure voice system to report and discuss EMI information.

2.10. The Telephone Connection and Switching Subsystem (TCSS) (see para 16. for additional information), meet-me-nets (MMN), administrative phones, and the Defense Switched Network (DSN) are unsecured systems, intended only for unclassified voice procedures in conducting satellite operations.

### **3. Secure Voice Operators at Onizuka Air Force Station (OAFS) and Schriever Air Force Base (SAFB).**

3.1. Configure the “Hot” net (see para 5. for additional information).

3.2. Coordinate and configure special secure voice operational requirements to support SOC and AFSCN External users.

3.3. Establish configuration of other than nominal configuration nets (e.g., Inter-Nodal Communication (INC)) by the direction of the Satellite Vehicle Operator (SVO), Satellite System Operator (SSO), Ground System Operator (GSO), or Ground Controller (GC), and adding the required personnel to the nets.

3.4. Assist in fault isolation resulting from equipment or system outage.

3.5. Operate and maintain SV recorders.

3.6. Connect AFSCN External users to SV nets as requested by SOCs.

3.7. Perform playbacks of SV recorders in response to SOC and RTS CC/DO requests.

### **4. Eastern Vehicle Checkout Facility (EVCF).**

4.1. Normal operations with OAFS: Operational nets are established using the TCSS through OAFS Voice Control.

4.2. Normal operations with SAFB: SAFB has access to the TCSS via 12 dedicated lines, and EVCF is added to the net for support. All communications run over the administrative telephone. These lines can be Defense Switch Network (DSN) or commercial.

**5. Hot Nets.** The “Hot” net is essentially a party line with all SOCs connected to the selected RTS. “Hot” nets or any nets that you cannot control access to, cannot be used to discuss classified information.

**6. Early Briefings.** Adding the next SOC to the voice net prior to the end of a satellite contact can reduce the amount of time required to configure for the next satellite contact. To eliminate possible confusion that may result from an early addition, the following rules apply:

6.1. In preparation for the next satellite contact the SOC must first obtain permission from the controlling authority before performing the briefing. The SOC for the current satellite contact is the controlling authority for the net. The secure voice operator is the controlling authority for the SVS.

6.2. If granted, the new SOC must ask all personnel if they are ready to copy the briefing for the next satellite contact. Briefings should not be given until all personnel on the net who need to hear the briefing respond, indicating they are ready to copy the briefing. Any operator requesting the SOC to standby must give their call sign (see [Attachment 5](#)) and inform the SOC, at the earliest opportunity, when they are ready to copy their portion of the briefing. Anyone added to the net must be informed of the level of classification.

6.3. If not granted, the controlling SOC will request the new SOC to stand by. The new SOC will monitor the net until the controlling SOC releases the net to the next satellite contact.

6.4. Certain circumstances may require the establishment of a new net while operators are using a different voice net (For example: RTS has a satellite contact with OAFS, and SAFB calls with a new satellite contact). During these circumstances, the controlling authority is the SV operator. Once the new nets are established, the SOC must ask if all personnel are ready to copy a briefing for the next satellite contact. The SV operator should ask the RTS operator if it is permissible to bring up a new net. If the answer is affirmative, then the SV operator has full authority to establish the SV nets as usual. If the answer from the RTS operator is negative, the SV operator should inform the new SOC to call back at the end of the RTS's current satellite contact.

**7. TCSS Nets.** If a problem occurs while bringing up the SV primary net, or a problem occurs after a SV net is established, the SOC will call the NCC at DSN 560-2666 or (719) 567-2666 to bring up a TCSS net. At OAFS, the GC will call the TCSS operator (DSN 561-3661 or (408) 752-3661) to bring up a TCSS net (see para [16](#). for additional information).

**8. Termination Time.** The SOC will release ARTS and WANIU no later than (NLT) Estimated Termination Time (ETT) +30 seconds.

## **9. Checks And Balances.**

9.1. A number of checks and balances are incorporated to increase mission success. These checks and balances rely on teamwork between all participants to confirm the information briefed is correct, all equipment is properly configured, all problems are reported, and the proper steps are taken during problem resolution.

9.2. Set Asynchronous Response Mode (SARM) coordination. The SOC will ask the RTS Operator if he or she is ready to accept a SARM before sending the directive. The SOC will brief any condition that may cause delay or problem with the SARM. The RTS Operator will verify that any condition that may cause a delay or equipment problem is cleared before authorizing SARM transmission. Verification includes ensuring NORAD Element Data Sets (NEDS) is disabled, when appropriate.

9.3. The SOC will announce which links will be connected. When a SARM is received, the RTS Operator will visually verify which communications ports show a connection and then report connection status to the SOC. The RTS Operator will announce if the proper connection is not displayed.

**10. Prepass Briefing.** SOC will clearly brief all the information required to support a satellite contact and any subsequent playback activities. The tempo must be slow enough so the briefing can be fully understood and copied by all parties. The following information will be briefed, and requested in a standard chronological order:

10.1. SOC will ask the RTS for any new problems that occurred during the previous satellite contacts not shown in ESD. The SOC will brief the classification, scheduled satellite contact times followed by a request for station status, system time and controllers name. SOC should be aware of any RTS outages (status) that may affect the support. Outage conditions may require changes to the prepass brief.

10.2. Command/Control/Status (C/C/S) routing and telemetry selection and routing. Include expected telemetry rates for each stream (TLM 1 through TLM 5), and primary and additional routing for both C/C/S and telemetry.

10.3. Automated Remote Tracking Station (ARTS) Inter-Range Operations Number (IRON) configuration information.

10.3.1. The five to seven characters ARTS IRON configuration (PASS ID) for the vehicle to be supported to include the alphanumeric identifier.

10.3.2. Required non-standard equipment configuration information to include ARTS configuration table number changes, modifications to default configuration table parameters, and/or manual equipment routing requirements.

10.4. The SOC Will Brief Vehicle Acquisition and Tracking Information.

10.4.1. Space vehicle acquisition time and antenna angles in both elevation and azimuth. Downlink channel and expected downlink signal strength (if there is a difference between normal and expected values due to a known or possible anomaly).

10.4.2. Approximate expected range number (satellite contact).

10.4.3. Mid-pass time, mid-azimuth antenna angle, maximum elevation, and keyhole instructions (if keyhole is expected).

10.4.4. Fade time and fade-azimuth antenna angle.

10.4.5. Required Element Data Set (ELSET) and time offsets.

10.4.6. Automatic Main Beam Acquisition (AMBA) parameters (if required), to include acquisition azimuth and elevation rates.

10.4.7. Transmitter active and uplink modulation enable instructions to include uplink power and channel.

10.4.8. Loss of Communications Procedures.

10.4.9. Tape disposition not covered by or deviate from the OD.

10.4.10. Request prepass read back and any questions or comments (to include confirmation of soft/hard antenna obscura).

**11. RTS Operator will (time permitting):**

11.1. Read-back the five to seven character ARTS IRON configuration exactly as it appears in the PASS ID field.

11.2. Make any required changes to the ARTS configuration. Once these changes are completed, the RTS Operator will display the appropriate screens and read-back the changes as they appear on the screen.

11.3. Read-back the actual ELSET number in use and time offset entered (if ELSET is available).

11.4. Read-back the actual satellite contact start time as displayed in the Pass Specific Region of the ARTS display. The SOC will confirm that any information read-back from the RTS Operator is correct.

11.5. Any new problems discovered during the satellite contact will be immediately reported on the net. It is critical that all parties accurately and clearly report the symptoms, provide recommendations for problem resolution, and coordinate their actions. Problem resolution will be SOC direction. Either the SOC will ask all parties to standby and take no action, take full control of the problem resolution process, or ask that each area try to locally isolate/resolve/report the problem.

11.6. New problems occurring during a previous satellite contact may not be disseminated in enough time to be of use during the next scheduled satellite contact. The RTS Operator will immediately inform the SOC of all new equipment problems and/or outages, instead of first waiting for receipt of the prepass briefing, when voice contact is established for the next satellite contact.

11.7. Configuration for real-time operations will be by SOC direction. Upon receiving SOC direction, the RTS Operator will ensure all prepass tests have terminated, built-in test equipment is properly configured, antenna is at the briefed point of acquisition, and the uplink modulation is disabled (if appropriate). The RTS Operator will verbally confirm the site is ready for real-time operations.

11.8. Both the SOC and RTS should remain mindful of the estimated time before acquisition. All prepass checks should be completed prior to ETA-30 seconds. At ETA-30 seconds, the RTS Operator will report the site is standing by for vehicle acquisition as a reminder to the SOC. The RTS operator will report when recorders start.

## **12. Prepass Checks.**

12.1. Command, telemetry, and antenna pointing tests will be performed when sufficient time is available to test signal routing and mission equipment.

12.1.1. Command Test: The RTS Operator will report when commands tones are active and any anomalous conditions such as echo check errors or C&S alarms.

12.1.2. Telemetry Test: The RTS Operator will report when a telemetry test directive is received and confirm bit synchronizer lock. The SOC will confirm WANIU channel lock on the appropriate telemetry streams.

12.1.3. Antenna Pointing (Slave Bus) Test: The RTS Operator will report when a C/C/S slave bus is received and the antenna is at the briefed point-of-acquisition. Any differences between the briefed and actual point-of-acquisition antenna angles must be reported to the SOC.

12.2. The SOC will report all prepass test results.

## **13. Pass.** The RTS Operator will:

13.1. Report the time the transmitter active directive was received and visually confirm the transmitter is active (transmitting to the antenna instead of dummy load).

- 13.2. Enable the uplink modulation, as briefed by the SOC, confirm on system summary screen uplink modulation is enabled and report the time uplink modulation was enabled.
- 13.3. Confirm good autotrack status and report acquisition signal strength.
- 13.4. Report range acquisition time and confirm range value (satellite contact).
- 13.5. Monitor all equipment for proper status and report any anomalies.
- 13.6. Report telemetry events, as briefed by the SOC.
- 13.7. During high elevation satellite contacts, take the appropriate steps to minimize data loss by following the briefed keyhole procedure or following the attached voice contingency procedures (keyhole not briefed). Report loss and re-acquisition of downlink signal.
- 13.8. Report loss of downlink signal at fade, as appropriate.

#### **14. Post-Pass.**

- 14.1. The SOC will brief any playback requirement and inform all parties of any problems and scoring (successful, marginal, failed, or lost).
- 14.2. De-configuration of RTS and communication (WANIU/OSR) resources will occur NLT 30 seconds after end of the scheduled satellite contact period.
- 14.3. To prevent accidental disconnection of resources, satellite contact termination will be by SOC direction. The SOC will inform all parties (using the appropriate call signs) when the satellite contact is over, what resources are no longer required, and that reconfiguration for the next satellite contact can take place. Individuals must wait for direction before reconfiguring resources, unless voice communications is lost.
- 14.4. At the end of each satellite contact, the SOC will announce which links and captured WANIU/DCC and ARTS resources will be disconnected, unless the same SOC is immediately scheduled as the next RTS support. Disconnecting ARTS resources allows the RTS Operator to accurately report a good connection during the next satellite contact and aids during loss of communications. The RTS Operator will verbally remind the SOC to release captured WANIU resources if they fail to receive the announcement.

#### **15. Contingency Operations.**

- 15.1. Emergency satellite contacts. It may be necessary, due to a vehicle emergency, for a SOC to take over resources currently in use by another SOC. Any SOC declaring a vehicle emergency must contact 22 SOPS Network Operations and inform them of the situation and requirements. 22 SOPS must resolve the declared emergency based on priority, and then verbally contact all parties involved. If resources are currently in support, 22 SOPS will be added to the voice nets used to support the satellite contact.
- 15.2. Satellite Contacts Not Shown on the Support Schedule. Satellite contacts not shown on the Network Tasking Order (NTO) must be reported to 22 SOPS Network Operations Scheduling, by the SOC, for immediate de-confliction. If a SOC calls for a satellite contact not shown on the schedule, the RTS Operator will:
  - 15.2.1. Inform the SOC the satellite contact is not listed on the NTO.

15.2.2. Query the other parties on the voice net to determine if the satellite contact is shown on a different schedule.

15.2.3. Ask the SOC to immediately contact 22 SOPS Network Operations Scheduling and add Network Scheduling to the voice net. Adding Network Scheduling to the voice net ensures all parties are properly informed of the outcome.

15.2.4. Inform the SOC how much time is available before the anticipated roll call for the next scheduled satellite contact.

15.2.5. Initialize the satellite contact for the requested SOC while waiting for Network Scheduling response.

**16. AFSCN Voice Communications.** The AFSCN utilizes multiple voice switching systems to support operations voice requirements and to provide redundancy in primary and backup capabilities.

16.1. The AFSCN Secure Voice System is the primary operations voice system and is the preferred system used to conduct AFSCN operations between the SOC and RTS. AFSCN Secure Voice is typically available on the primary ATM links, except REEF, which is currently on the additional communication link.

16.2. The AFSCN non-secure voice system, Telephone Connection and Switching Subsystem (TCSS), Defense Switched Network (DSN), Meet-Me-Nets (MMN) and commercial telephone services are non-secure voice back ups to the AFSCN Secure Voice System available to all AFSCN users. Programs that conduct operations with the AFSCN may determine and use the existing AFSCN operations voice system that best meet their operational and security requirements. The determination of which voice system to use must be based on program specific security requirements, need for voice nets and availability of AFSCN Secure Voice at user operations centers.

**17. Voice Communication Failures.**

17.1. A failure to establish voice connectivity, or the loss of voice communications during a satellite contact, may impact the ability to successfully support the mission. Severity depends upon the cause and available contingency procedures. Voice communication failures can be caused by ATM link problems or DRSN equipment problems.

17.2. A lost or degraded ATM link can pose a significant problem to satellite operations, although certain steps can be taken to minimize the impact, to include: session re-initialization to establish an alternate ATM path, fail-over to an alternate link or channel, and allowing autonomous equipment configuration, satellite acquisition, and termination.

17.3. When voice communication problems occur, each party supporting the satellite contact must be able to evaluate the problem, understand what actions must be taken by all to ensure success, and (if required) to autonomously configure and operate equipment. The SOC must make a determination to continue to support or reschedule the satellite contact. Each party must also determine if establishing alternate voice is required, and when to report the problem.

17.4. The SOC is responsible for establishing voice communications for each satellite contact. When a voice communication failure occurs, the SOC must attempt to have the Schriever operator establish the alternate voice link through Onizuka or use the non-secure TCSS net if voice support is critical. Alternate voice must be established for the following:

- 17.4.1. Incorrect ARTS configuration listed on the ESD 24-hour support schedule.
- 17.4.2. Mission impact of an outage is unclear and RTS clarification is required.
- 17.4.3. RTS not provided with adequate voice communication failure procedures. It is the responsibility of each SOC to ensure the RTS understands what coordinated actions to take during a voice communication failure.
- 17.4.4. SARM coordination required. The SOC must verbally coordinate a SARM with the RTS before sending unless, the voice communication failure procedure allows for an autonomous SARM at ETA-5 minutes.
- 17.4.5. SARM failure.
- 17.4.6. Improper RTS status received. After sending a SARM and establishing a link, the SOC should monitor critical RTS status to ensure the antenna is at the proper point-of-acquisition, RWS has timed out and transmitter is active, good autotrack has occurred, and valid range is acquired.
- 17.4.7. Equipment failure detected.
- 17.4.8. Prepass testing required.
- 17.4.9. Communication failure procedures states transmitter active is by SOC direction only.
- 17.4.10. Communication failure procedure states enabling uplink modulation is by SOC direction only.
- 17.4.11. Critical RTS event verification required.
- 17.4.12. Support terminated early or support period extended.
- 17.4.13. **Attachment 2**, Failure to Establish Voice Communications For C/C/S Support, lists actions the SOC and RTS must take when voice communications connectivity is not established.

## **18. Negative Voice Communications and Procedures Common to All Loss of Communications (LOC) Situations.**

18.1. If the SOC has not contacted the RTS by the normal start of prepass tests or by ETA minus 5-minutes (whichever occurs first), the RTS Operator will follow the negative voice communications procedure provided by the applicable program Operations Direction (OD). The RTS Operator will check if primary voice is operational and contact 22 SOPS Network Operations Scheduling to determine if the satellite contact was deleted. If the primary voice is down, contact 22 SOPS Network Operations Scheduling via DSN.

18.2. The SOC has the sole responsibility to ensure voice contact is established or adequate procedures are available for continued support for any voice communication problems.

18.3. **Attachment 3**, Procedures Common to All Loss of Communications (LOC) Situations, lists actions the SOC and RTS should take when voice communication connectivity is lost with the RTS.

## **19. Standard Loss of Communications.**

19.1. Standard LOC procedures identified in this document will be used. Standard approved procedures, for several different LOC situations, are implemented to preclude lengthy briefing periods and potential misunderstandings of the briefing text. Each LOC procedure is assigned a number, as shown

in **Attachment 4**. LOC is defined as the inability of the SOC to communicate with the RTS at any point after a successful prepass briefing until the end of the scheduled satellite contact period.

19.2. All satellite programs will use standard LOC procedures. The SOC will brief the LOC procedure number or alphabetic identifier (program-specific LOC), for a specific satellite contact period, during prepass (e.g., use LOC Procedure Two).

19.3. When a LOC occurs, certain coordinated actions will be taken by both the SOC and RTS to re-establish voice contact (if desired), and then continue to try to support the space vehicle (if desired). During prepass, the SOC must brief the method of re-establishing voice contact by either (1) waiting for the SOC to call the RTS or (2) have all parties dial a meet-me-net. A meet-me-net number must be briefed during prepass for the second option.

19.4. Loss of voice communications does not necessarily mean a loss of the C/C/S connectivity. With continued C/C/S connectivity, the SOC can still SARM, initiate prepass checks, transmit the active directive, monitor RTS equipment status, and go passive.

19.5. To continue supporting the space vehicle, Loss of Communication Procedures must answer the following questions:

19.5.1. Should the RTS Operator and SOC continue to support, if C/C/S is still connected, or should the RTS Operator manually go active, enable the uplink modulation, and go passive?

19.5.2. How does the RTS Operator verify C/C/S connectivity to the SOC? Is having a C/C/S slave bus available an adequate check for C/C/S connectivity?

19.5.3. When should the RTS Operator go active and enable the uplink modulation?

19.5.4. How should the RTS Operator acquire the space vehicle (manually, NEDS, C/C/S slave bus, etc.)?

19.5.5. What should the RTS Operator do with telemetry (route primary circuit only, route both primary and alternate circuits, etc.)?

19.5.6. When should the RTS Operator go passive?

19.5.7. When should the RTS Operator terminate the satellite contact?

19.5.8. When are the SOC actions during a LOC?

SUZANNE M. VAUTRINOT, Colonel, USAF  
Commander, 50 Space Wing

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

*AFPD 10-2*, Air Force Readiness Program

AFSCN System Operations Protection Guide, 21 Jul 1998

***Abbreviations and Acronyms***

**AFSCN**—Air Force Satellite Control Network

**AMBA**—Automatic Main Beam Acquisition

**ARTS**—Automated Remote Tracking Station

**ATM**—Asynchronous Transfer Mode

**C/C/S**—Command/Control/Status

**C&S**—Control and Status

**COMSEC**—Communications Security

**DRSN**—The Defense Red Switch Network

**DSN**—Defense Switch Network

**ELSET**—Element Data Set

**EMI**—Electromagnetic Interference

**ESD**—Electronic Schedule Dissemination

**GC**—Ground Controller

**GSO**—Ground System Operator

**IRON**—Inter-Range Operations Number

**IST**—Integrated Sources Telephones

**LOC**—Loss of Communications

**MMN**—Meet-Me-Net

**MLP**—Multi-Line Phones

**MCC**—See SOC

**NCC**—Network Control Center

**NEDS**—NORAD Element Data Sets

**NORAD**—North American Air Defense

**NOC**—Network Operations Center

**NTO**—Network Tasking Order

**OAFS**—Onizuka Air Force Station

**OD**—Operations Directive

**OPSEC**—Operations Security

**OSR**—Operational Switch Replacement

**RTS**—Remote Tracking Station

**RWS**—Radiate Warning System

**SAFB**—Schriever Air Force Base

**SARM**—Set Asynchronous Response Mode

**SOC**—Satellite Operations Center (synonymous with AFSCN External User and Mission Control Complex (MCC))

**SSO**—Satellite System Operator

**STE**—Secure Telephone Equipment

**STU III**—Secure Telephone Unit III

**SV**—Secure Voice

**SVO**—Satellite Vehicle Operator

**TCSS**—Telephone Connection and Switching Subsystem

**TLM**—Telemetry

**WANIU**—Wide Area Network Interface Unit

## Attachment 2

## FAILURE TO ESTABLISH VOICE COMMUNICATION FOR A C/C/S SUPPORT

**Figure A2.1. Voice Communication Failure  
PREPASS START TIME**

SOC Actions	RTS Actions
Initialize session to establish a Wide Area Network Interface Unit (WANIU) connection. Follow NOC override procedure if required resources are not available. If non-standard equipment configurations are required, the voice communication failure procedure must provide written direction either (1) instructing the RTS to wait for establishment of voice communications before configuring or (2) giving permission for autonomous configuration.	Initialize the ARTS configuration listed on the ESD 24-hour support schedule. Make any non-standard configuration changes.
Report fatal or degrading communication problem to the NCC.	Enable RWS (Radiate Warning System).
Bypass prepass testing.  The voice communication failure procedure must provide written direction when a coordinated SARM is required.	Ensure NEDS is disabled if a coordinated SARM is required.
	Wait for establishment of alternate voice while monitoring equipment status. Immediately report any new fatal or degrading RTS problems to the NCC.
	Monitor ESD for a Schedule change. Terminate or extend the satellite contact as required.
	Monitor WANIU resources availability (channel maps). Check ESD for scheduled change if maps not established.

ETA-5 Minutes

Transmit SARM Directive. Validate a successful SARM and active C/C/S link.	Look for a SARM and C&S port connection.
Transmit antenna-pointing angles.	Monitor for SOC generated antenna-pointing angles (C/C/S Slave bus).

Determine to continue with or terminate satellite contact.	Ensure uplink modulation is disabled unless otherwise stated in the OD.
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## ETA-2 Minutes

Verify antenna at point-of-acquisition.	Enable NEDS if C/C/S Slave bus is not available. Ensure (1) cable unwrap completed (Waiting for ETA displayed in the ARTS Tracking Event Window), and (2) antenna is at the predicted point-of-acquisition.
Verify RWS status.	Verify RWS timeout complete and transmitter able to go active. Monitor for the active directive.

## ETA-0 Minutes

Send transmitter active directive (antenna/dummy load). Verify transmitter status.	Active directive received – enable uplink modulation if voice communication failure procedure states to enable after active.
Verify autotrack status.	Ensure space vehicle acquisition and autotrack.
Verify valid range.	Enable uplink modulation if voice communication failure procedures states to enable uplink modulation after good autotrack. Verify valid range acquisition.
Voice communication procedure must provide written direction detailing when to break autotrack, slave the antenna, and re-acquire the space vehicle.	Keyhole. Slave antenna and re-acquire the space vehicle per the briefing. If the RTS Operator fails to receive a briefing prior to a loss of voice communications, then the ARTS operator (1) monitors antenna performance when elevation angle reaches 10 degrees prior to E-max (maximum sustainable autotrack elevation), (2) slave the antenna at the start of acceleration lag or loss of autotrack, and (3) re-acquire the space vehicle with good tracking error after mid-pass.

## Scheduled Support Termination Time

Send disconnect directive and release WANIU resource.	Fade the active ARTS configuration at scheduled termination time.
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## Attachment 3

## PROCEDURES COMMON TO ALL LOSS OF COMMUNICATIONS (LOC) SITUATIONS

Figure A3.1. Procedures Common to All LOC Situations

<b>SOC Actions:</b>	<b>RTS/ARTS Actions:</b>
<p>1. Attempt to re-establish communications with RTS.</p> <p>2. The SOC will continue with normal support functions as much as possible.</p> <p><b>Actions for all net participants:</b></p> <p>1. Continue to announce actions taken on the nets until nets are working again. This will ensure actions are documented on tape and keeps the far end aware of what is happening in the event that the communication failure is on the local end receive side only.</p>	<p>1. Verify C/C/S Capabilities: Check that good slave angles are being received from the SOC.</p> <p>2. Support terminations: Terminate satellite contact at the briefed termination time (if a satellite contact termination time is briefed by the SSO/GSO) or at the scheduled stop time (satellite contact termination not briefed by the SSO/GSO).</p>

## Attachment 4

Figure A4.1. LOSS OF COMMUNICATIONS (LOC) PROCEDURES

	<b>PROCEDURE 1</b>	<b>PROCEDURE 2</b>	<b>PROCEDURE 3</b>
WANIU Resources.	Attempt to Connect Resources.	Do Not Attempt to Connect Resources.	Attempt to Connect Resources.
NOC Override.	IAW 22 SOPS procedures.	IAW 22 SOPS procedures.	IAW 22 SOPS procedures
SARM	Ensure NEDS is disabled until C&S port connection.	N/A.	Ensure NEDS is disabled until C&S port connection.
Establish Alternate Voice.	SOC will attempt to establish.	SOC will attempt to establish.	SOC will attempt to establish.
Non-Standard Equipment Configurations.	Configure IAW Vehicle Folder if Not Briefed.	Configure IAW Vehicle Folder if Not Briefed.	Configure IAW Vehicle Folder if Not Briefed.
Antenna Pointing Angles/Vehicle Acquisition.	Acquire Space vehicle via C/C/S Slavebus, if available. NEDS may be used in the absence of a C/C/S Slavebus if current LSET is available. Manually acquire using briefed or locally printed angles when appropriate.	Do Not Attempt.	Acquire Space vehicle via C/C/S Slavebus, if available. NEDS may be used in the absence of a C/C/S Slavebus if current LSET is available. Manually acquire using briefed or locally printed angles when appropriate.

Transmitter Passive/ Active.	C/C/S Slavebus Present: If passive wait for the SOC to go active at the brief time. Manually go active by ETA+30 seconds if active directive not received. If active, remain active. Manually go passive one minute prior to end of support if passive directive not received. C/C/S Slavebus Not	If passive, remain passive. If active, go passive.	If passive, remain passive. If active, go passive.
<b>PROCEDURE 1</b>		<b>PROCEDURE 2</b>	<b>PROCEDURE 3</b>
	Present: If passive, remain passive. If active, remain active. Manually go passive one minute prior to end of support if passive direct not received.		
Uplink Modulation	Enable 10-Seconds After Going Active. Disable After Passive.	Do not Enable.	Do Not Enable.
Autotrack.	ETA+0	Do Not Attempt.	ETA+0
Telemetry.	Transmit telemetry both primary and alternate links. Record through end of support time.	N/A	Transmit telemetry both primary and alternate links. Record through end of support time.

Keyhole.	Slave antenna and reacquire the space vehicle per the briefing. If the RTS operator fails to receive a briefing prior to a loss of voice communications, then the ARTS operator (1) monitors antenna performance when elevation angle reaches 10 degrees prior to E-Max (maximum sustainable autotrack elevation), (2) slave the antenna at the start of acceleration lag or loss of autotrack, and (3) re-acquire	Slave antenna and reacquire the space vehicle per the briefing. If the RTS operator fails to receive a briefing prior to a loss of voice communications, then the ARTS operator (1) monitors antenna performance when elevation angle reaches 10 degrees prior to E-Max (maximum sustainable autotrack elevation), (2) slave the antenna at the start of acceleration lag or loss of autotrack, and (3) re-acquire	Slave antenna and reacquire the space vehicle per the briefing. If the RTS operator fails to receive a briefing prior to a loss of voice communications, then the ARTS operator (1) monitors antenna performance when elevation angle reaches 10 degrees prior to E-Max (maximum sustainable autotrack elevation), (2) slave the antenna at the start of acceleration lag or loss of autotrack, and (3) re-acquire
	PROCEDURE 1	PROCEDURE 2	PROCEDURE 3
	the space vehicle with good tracking error after mid-pass	the space vehicle with good tracking error after mid-pass	the space vehicle with good tracking error after mid-pass

**EVENT VERIFICATION.**

Support Termination	Monitor for C&S port disconnection. Manually disconnect C&S port(s) and fade active ARTS configuration at scheduled time.	Monitor for C&S port disconnection. Manually disconnect C&S port(s) and fade active ARTS configuration at scheduled time.	Monitor for C&S port disconnection. Manually disconnect C&S port(s) and fade active ARTS configuration at scheduled time.
	<b>PROCEDURE 4</b>	<b>PROCEDURE 5</b>	<b>PROCEDURE 6</b>
WANIU Resources	Attempt to Connect Resources.	Attempt to Connect Resources	Attempt to Connect Resources
NOC Override	IAW 22 SOPS Procedures	IAW 22 SOPS Procedures.	IAW 22 SOPS Procedures.

SARM	Ensure NEDS is disabled until C&S port connection.	Ensure NEDS is disabled until C&S port connection.	Ensure NEDS is disabled until C&S port connection.
Establish Alternate Voice	SOC will attempt to establish.	SOC will attempt to establish.	SOC will attempt to establish.
Non-Standard Equipment Configuration	Configure IAW Vehicle Folder if Not Briefed.	Configure IAW Vehicle Folder if Not Briefed.	Configure IAW Vehicle Folder if Not Briefed.
Antenna Pointing Angles/Vehicle Acquisition	Acquire space vehicle via C/C/S Slavebus, if available. NEDS may be used in the absence of a C/C/S Slavebus if current LSET is available. Manually acquire using briefed or locally printed angles when appropriate.	Acquire space vehicle via C/C/S Slavebus, if available. NEDS may be used in the absence of a C/C/S Slavebus if current LSET is available. Manually acquire using briefed or locally printed angles when appropriate.	Acquire space vehicle via C/C/S Slavebus, if available. NEDS may be used in the absence of a C/C/S Slavebus if current LSET is available. Manually acquire using briefed or locally printed angles when appropriate.
Transmitter Passive/Active	C/C/S Slavebus Present: If passive, wait for the SOC to go active at the briefed time. Manually go active	C/C/S Slavebus Present: If passive, wait for the SOC to go active at the briefed time. Manually go active	C/C/S Slavebus Present: If passive, wait for the SOC to go active at the briefed time. Manually go active
	<b>PROCEDURE 4</b>	<b>PROCEDURE 5</b>	<b>PROCEDURE 6</b>
	by ETA+30 seconds if active directive not received. If active, remain active. Manually go passive one minute prior to end of support if passive directive not received. C/C/S Slavebus Not Present: If passive, remain passive. If active go passive.	by ETA+30 seconds if active directive not received. If active, remain active. Manually go passive one minute prior to end of support if passive directive not received. C/C/S Slavebus Not Present: If passive, remain passive. If active go passive.	by ETA+30 seconds if active directive not received. If active, remain active. Manually go passive one minute prior to end of support if passive directive not received. C/C/S Slavebus Not Present: If passive, remain passive. If active go passive.

Uplink Modulation	Enable 10-Seconds After Going Active. Disable After Passive.	Enable 10-Seconds After Going Active. Disable After Passive.	Enable After Solid Autotrack.
Autotrack	ETA+0.	ETA+0.	At Turn-On.
Telemetry	Transmit telemetry both primary and alternate links. Record through end of support time.	Transmit telemetry both primary and alternate links. Record through end of support time.	Transmit telemetry both primary and alternate links. Record through end of support time.
Keyhole	Slave antenna and reacquire the space vehicle per the briefing. If the RTS Operator fails to receive a briefing prior to a loss of voice communications, then the ARTS operator (1) monitors antenna performance when elevation angle reaches 10 degrees prior to E-max (maximum sustainable <u>PROCEDURE 4</u> autotrack elevation), (2) slave the antenna at the start of acceleration lag or loss of autotrack, and (3) re-acquires the space vehicle with good tracking error after misspass.	Slave antenna and reacquire the space vehicle per the briefing. If the RTS Operator fails to receive a briefing prior to a loss of voice communications, then the ARTS operator (1) monitors antenna performance when elevation angle reaches 10 degrees prior to E-max (maximum sustainable <u>PROCEDURE 5</u> autotrack elevation), (2) slave the antenna at the start of acceleration lag or loss of autotrack, and (3) re-acquires the space vehicle with good tracking error after misspass.	Slave antenna and reacquire the space vehicle per the briefing. If the RTS Operator fails to receive a briefing prior to a loss of voice communications, then the ARTS operator (1) monitors antenna performance when elevation angle reaches 10 degrees prior to E-max (maximum sustainable <u>PROCEDURE 6</u> autotrack elevation), (2) slave the antenna at the start of acceleration lag or loss of autotrack, and (3) re-acquires the space vehicle with good tracking error after misspass
Event Verification		If so briefed, verify turnoff of subcarrier 30-seconds after transmitter passive.	

Support Termination	Monitor for C&S port disconnection. Manually disconnect C&S port(s) and fade active ARTS Configuration at scheduled stop time.	Monitor for C&S port disconnection. Manually disconnect C&S port(s) and fade active ARTS Configuration at scheduled stop time.	Monitor for C&S port disconnection. Manually disconnect C&S port(s) and fade active ARTS Configuration at scheduled stop time.
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## Attachment 5

## CALL SIGNS

Figure A5.1. Call Signs

<b>Remote Tracking Station</b>	<b>Call Sign</b>
Colorado Tracking Station (CTS)	PIKE
Diego Garcia Tracking Station (DGS)	REEF
Guam Tracking Station (GTS)	GUAM
Hawaii Tracking Station (HTS)	HULA
New Hampshire Tracking Station (NHS)	BOSS
Telemetry Command Station (TCS)	LION
Thule Tracking Station (TTS)	POGO
Vandenberg Tracking Station (VTS)	COOK
ARTS Operator	ARTS
Antenna/SGLS (GARE) Area (TCS)	RTS
Eastern Vehicle Checkout Facility (EVCF)	BEACH
<b>Satellite Operations Centers</b>	<b>Call Sign</b>
1 SOPS (SOC 11)	HAWK
1 SOPS (SOC12)	HAWK
2 SOPS (SOC 21)	HAWK
3 SOPS (SOC 31)	HAWK
3 SOPS (SOC 32)	HAWK
3 SOPS (BACKUP TO NAVSOC)	ANKR
4 SOPS (SOC 41)	HAWK
4 SOPS (SOC 42)	HAWK
6 SOPS (SOC 61/DMSP)	PEAK
21 SOPS (SOC 51/SOC 52)	DICE
<b>AFSCN External Users</b>	<b>Call Sign</b>
NOPS	ROCK
CERES (SOC 96)	KING
RSC (KIRTLAND AFB)	MESA
NAVSOC POINT MUGU & DET D	HELM
2 <sup>nd</sup> SWS (BUCKLEY AFB)	WEST
NOAA SOCC	CAPS
B/U & SOFTWARE DEV FOR 2 SWS	WILD

<b>OAFS Communications</b>	<b>Call Sign</b>
Secure Voice Operator (SV)	Secure Voice
TCSS Operator	Voice Control
Communication Manager	OAFS Comm Control
Onizuka Tech Control Operator	Tech Control
Onizuka NASA Comand Formatter	Onizuka NCF
Onizuka PTP Operator	Onizuka PTP
<b>Schriever AFB Communications</b>	<b>Call Sign</b>
Secure Voice Operator Schriever (SVS)	Schriever Secure Voice
Schriever Communications Controller	SC
Schriever Comm Controller	Schriever Comm Control
Distributive Tech Control	DTC
Schriever NASA Command Formatter	Schriever NCF # _____