

Exhibit Two

NATO AWACS Mid Term Upgrade Program NE-3A Mode S Concept of Use

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NE-3A MODE S CONCEPT OF USE

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1.0 Introduction

This paper describes a Concept of Use for a Mode S upgrade to the NATO E-3A (NE-3A) IFF system for the NATO Midterm Enhancement Program. This Concept of Use was developed to define a baseline functionality for the purposes of pricing the EMD and Production phases of the program. This document is applicable to the NATO Midterm interrogator only. Any additional system acquisition or subsequent user inputs will be tracked as a delta to the baseline established by this document.

2.0 Overview of Mode S

Mode Select (Mode S) is a combined secondary surveillance radar beacon system with ground-air-ground and air-air data link capability. It includes a 24-bit aircraft technical address which provides more than 16 million unique addresses, allowing the interrogator to select then interrogate a specific aircraft of interest. Each discrete interrogation contains the unique address of the aircraft for which it is intended and elicits a response dependent upon the level of capability of the corresponding transponder.

Civil aircraft have a permanently assigned technical address. Military aircraft can change technical addresses before a flight. Standards and Recommended Practices (SARPs) for Mode S have been defined by the International Civil Aviation Organization (ICAO) and are published in ICAO Annex 10.

3.0 Advantages of Mode S

Implementation of a Mode S interrogation capability on the NE-3A will improve the existing IFF system in the following ways:

- Aircraft state (heading, speed, etc.) and aircraft intent information is available via Mode S selective interrogations.
- Adaptive reinterrogation will significantly improve the probability of detecting an aircraft that is in a marginal signal condition.
- The Mode S signal structure will provide improved error detection and correction.
- More than sixteen million transponder addresses will allow unique identification of all aircraft.
- Refined range and position accuracy made possible via Mode S GPS squitter and/or Mode S datalink.

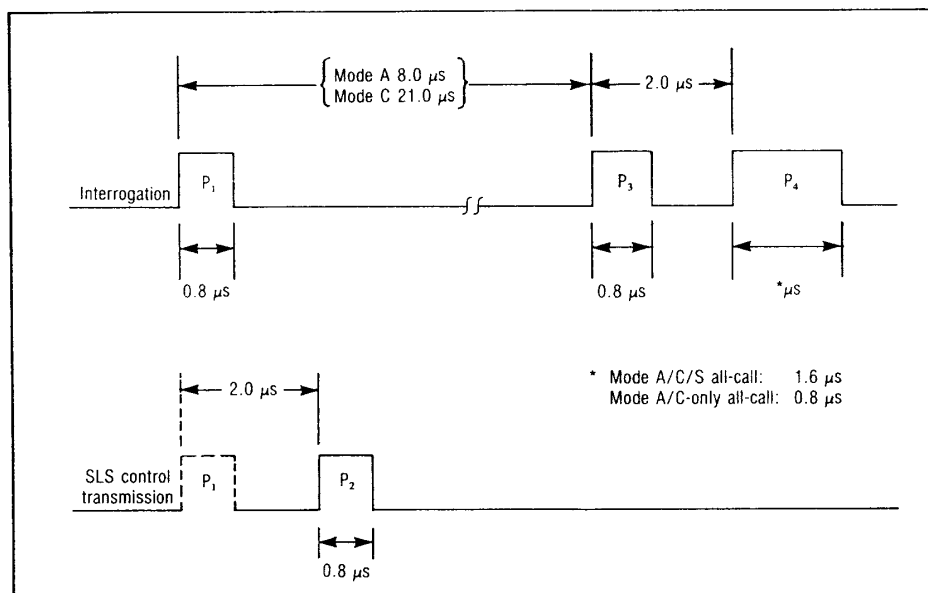
4.0 Mode S Characteristics

4.1 Signal Characteristics

Mode S is fully backwards compatible with the existing Air Traffic Control Radar Beacon System (ATCRBS). Mode S transponders respond to both Mark X/XII interrogations and Mode S interrogations. Mode S interrogators can interrogate ATCRBS or Mode S transponders. Both systems use the same interrogation and reply frequencies (1030 MHz and 1090 MHz, respectively).

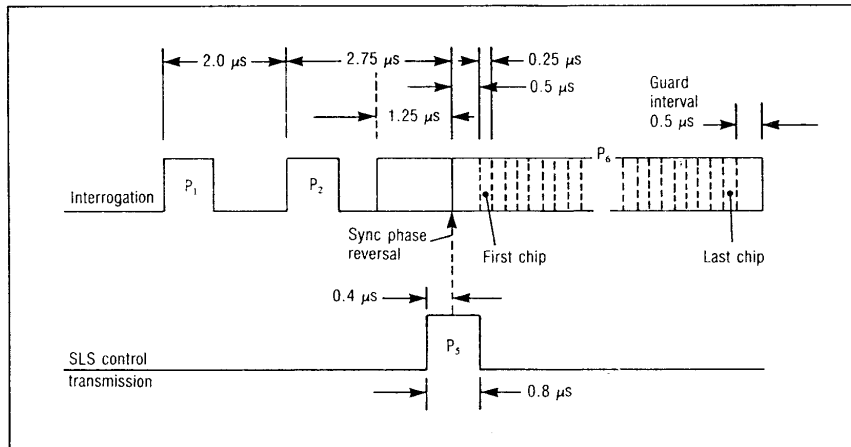
Mode S-only interrogations use binary differential phase shift keying modulation (DPSK) at 4 MB/sec and Mode S replies have binary pulse position modulation (PPM) at 1 MB/sec. The Mode S coding structure provides enhanced error detection and correction (less than 1 undetected error in 10^{28} messages). Mode S is neither secure nor jam-resistant and is not intended to replace the encrypted military Mode 4.

4.1.1 Signal Structure

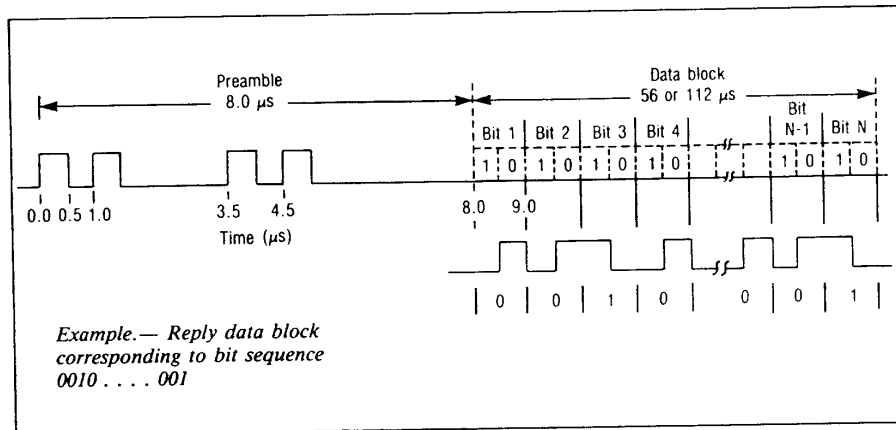


Intermode (Mode A/C and S) Interrogation Pulse Sequence
Figure 4.1.1-1

Note: The Intermode capability is not provided on the NE-3A.



Mode S Interrogation Pulse Sequence
Figure 4.1.1-2



Mode S Reply
Figure 4.1.1-3

4.1.2 Message Formats

Mode S has two basic message lengths; 56 bits and 112 bits. The 56 bit surveillance formats include a 32 bit command field and a 24 bit address field. 112 bit communication formats include a 32 bit command field, a 56 bit data field and a 24 bit address field. The 112 bit extended length message formats include an 8 bit command field, an 80 bit data field and a 24 bit address field. Uplink (Interrogation) formats are defined in figure 4.1.2-1. Downlink (Reply) formats are defined in figure 4.1.2-2.

4.2 Interrogation Process

Fully operational Mode S interrogators or clusters of interrogators are allocated an interrogator identification (II) code which in conjunction with the unique aircraft technical address, enables linking between the interrogator and the aircraft of interest.

All-call interrogations are sent to all aircraft in a region to obtain the corresponding 24-bit technical addresses. These addresses are maintained in an internal data base and once the address is obtained, the all-call acquisition doesn't need to be repeated for that aircraft.

Upon receiving the technical address, the interrogator sends a lockout message to inhibit the corresponding transponder from replying to further Mode S all-call interrogations from any sensor with that interrogator identification code. Lockout is refreshed each antenna scan as part of the normal surveillance protocol and time-out occurs in 18 seconds if no further lockout commands are received. The interrogator also has the provision ("lockout override") to command a transponder to respond regardless of the lockout status in effect.

Once it has the unique transponder address, the interrogator can selectively interrogate to obtain altitude and Mode 3/A codes for Mode S to Mark XII correlation or other useful information. Within a full Mode S environment, the aircraft will transmit conspicuity codes which will not allow individual code correlation. A correlation to the primary radar data on IFF position will be required.

Format No.	UF	RL:1	AQ:1						
0	00000	3	4	18		AP:24			Short air-air surveillance (ACAS)
1	00001			27 or 83		AP:24			
2	00010			27 or 83		AP:24			
3	00011			27 or 83		AP:24			
4	00100	PC:3	RR:5	DI:3	SD:16	AP:24			Surveillance, altitude request
5	00101	PC:3	RR:5	DI:3	SD:16	AP:24			Surveillance, identity request
6	00110			27 or 83		AP:24			
7	00111			27 or 83		AP:24			
8	01000			27 or 83		AP:24			
9	01001			27 or 83		AP:24			
10	01010			27 or 83		AP:24			
11	01011	PR:4	II:4	19		AP:24			Mode S only all-call
12	01100			27 or 83		AP:24			
13	01101			27 or 83		AP:24			
14	01110			27 or 83		AP:24			
15	01111			27 or 83		AP:24			
16	10000	3	4	18		56	AP:24		Long air-air surveillance (ACAS)
17	10001			27 or 83		AP:24			
18	10010			27 or 83		AP:24			
19	10011			27 or 83		AP:24			
20	10100	PC:3	RR:5	DI:3	SD:16	MA:56	AP:24		Comm-A, altitude request
21	10101	PC:3	RR:5	DI:3	SD:16	MA:56	AP:24		Comm-A, identity request
22	10110			27 or 83		AP:24			
23	10111			27 or 83		AP:24			
24	11	RC:2	NC:4		MC:80		AP:24		Comm-C (ELM)

- Notes.— 1. **XX:M** denotes a field designated “XX” which is assigned M bits.
2. **N** denotes unassigned coding space with N available bits. These shall be coded as ZERO's for transmission.
3. For uplink formats (UF) 0 to 23 the format number corresponds to the binary code in the first five bits of the interrogation. Format number 24 is defined as the format beginning with “11” in the first two bit positions while the following three bits vary with the interrogation content.
4. All formats are shown for completeness, although a number of them are unused. Those formats for which no application is presently defined remain undefined in length. Depending on future assignment they may be short (56 bits) or long (112 bits) formats. Specific formats associated with Mode S capability levels are described in later paragraphs.

Mode S Interrogation/Uplink Formats
Figure 4.1.2-1

Format No.	DF	VS:1										
0	00000	7	RI:4	2	AC:13	AP:24	 Short air-air surveillance (ACAS)					
1	00001	27 or 83				P:24						
2	00010	27 or 83				P:24						
3	00011	27 or 83				P:24						
4	00100	FS:3	DR:5	UM:6	AC:13	AP:24	 Surveillance, altitude reply					
5	00101	FS:3	DR:5	UM:6	ID:13	AP:24	 Surveillance, identity reply					
6	00110	27 or 83				P:24						
7	00111	27 or 83				P:24						
8	01000	27 or 83				P:24						
9	01001	27 or 83				P:24						
10	01010	27 or 83				P:24						
11	01011	CA:3	AA:24			PI:24	 All-call reply					
12	01100	27 or 83				P:24						
13	01101	27 or 83				P:24						
14	01110	27 or 83				P:24						
15	01111	27 or 83				P:24						
16	10000	VS:1	7	RI:4	2	AC:13	56	ff	AP:24	Long air-air surveillance (ACAS)		
17	10001	27 or 83				P:24						
18	10010	27 or 83				P:24						
19	10011	27 or 83				P:24						
20	10100	FS:3	DR:5	UM:6	AC:13	MB:56	ff	AP:24	Comm-B, altitude reply			
21	10101	FS:3	DR:5	UM:6	ID:13	MB:56	ff	AP:24	Comm-B, identity reply			
22	10110	27 or 83				P:24						
23	10111	27 or 83				P:24						
24	11	1	KE:1	ND:4	MD:80			ff	AP:24	 Comm-D (ELM)		

- Notes.— 1. **XX:M** denotes a field designated "XX" which is assigned M bits.
P:24 denotes a 24-bit field reserved for parity information.
2. **N** denotes unassigned coding space with N available bits. These shall be coded as ZERO's for transmission.
3. For downlink formats (DF) 0 to 23 the format number corresponds to the binary code in the first five bits of the reply. Format number 24 is defined as the format beginning with "11" in the first two bit positions while the following three bits may vary with the reply content.
4. All formats are shown for completeness, although a number of them are unused. Those formats for which no application is presently defined remain undefined in length. Depending on future assignment they may be short (56 bits) or long (112 bits) formats. Specific formats associated with Mode S capability levels are described in later paragraphs.

Mode S Reply/Downlink Formats
Figure 4.1.2-2

4.3 Datalink Capability

Mode S includes a data link capability designed to facilitate surveillance and communication between interrogators (ground & airborne) and airborne transponders.

There are two main types of data link processors required by Mode S:

- a Ground Data Link Processor (GDLP) which interfaces with the ground Mode S sensor
- a Mode S Transponder Aircraft Data Link Processor (ADLP)

The Mode S data link message formats are defined (See 4.1.2.), but register contents and format elements are not fully defined or accepted by the ICAO.

4.4 Levels of Transponder Capability

The International Civil Aviation Organization has defined the following five levels of Mode S transponder capability:

Level 1 permits surveillance based upon pressure-altitude reporting and the Mode A identity code.

Level 2 has the capability of a level 1 transponder and in addition provides for Standard Length Message (SLM), with 56 bits data communications (both Comm A interrogations and/or Comm B replies), data link capability and aircraft identity reporting.

Level 3 has the capabilities of a level 2 transponder and in addition has facilities for Extended Length Message (ELM), with 80 bits data for ground to air communications. This enables level 3 transponder-equipped aircraft to make use of the data link capabilities of Mode S through the retrieval of data from ground-based data banks and other air traffic services.

Level 4 has the capabilities of a level 3 unit plus facilities for ELM communication from air to ground. This enables ground ATC authorities to access airborne data sources and the aircraft to transmit to the ground other data required by air traffic services.

Level 5 has the capability of level 4 plus it permits Comm-B and extended length data communications with multiple interrogators without requiring the use of multisite reservations.

The official NATO military position is that tactical aircraft will comply with Level 2 Mode S requirements and transport-type aircraft will comply with Level 3 when available.

Transport type aircraft are defined as those that regularly access the civilian route structure. (NE-3A's are considered transport type aircraft) (See Reference 1.).

4.5 Lockout Issues

Two Mode S interrogators with the same interrogator identification code operating in an overlapping coverage area have the ability to "lock out" transponder replies to all-call interrogations from each other. In the overlapping region, neither interrogator has a complete surveillance picture. Full Mode S implementation for the NE-3A would require assignment of an interrogator identification code for lockout management or coordination with the civilian (ground-based) air traffic control system.

There currently exist only fifteen non-zero interrogator identifier (II) codes and all are planned for use by civilian interrogators in high density airspace. The ICAO has recognized the need for an increase in the number of lockout codes and standards are under development to provide for additional codes. These codes will not be available for use until all transponders in a region are modified to include them.

4.6 Interrogator Identifier (II) Code

When Mode S interrogators use II codes between 1 and 15, they are permitted to perform all Mode S data link transactions.

When Mode S interrogators use an II code of zero, certain transactions are not allowed, including the following:

- Retrieval of Comm-B broadcasts
- Air Initiated Comm-B
- Comm-A standard length messages of more than 1 segment
- Extended length messages

5.0 NATO Midterm Mark XII IFF with Mode S Concept of Use

5.1 Overview

An operational concept for the NE-3A when equipped with Mark XII IFF with Mode S is to perform identification and surveillance using Mark XII System (AIMS) with Mode S providing supplemental information. Mode S is not intended to replace the surveillance capability of the current Mark XII. Modes S can provide unique target identification and selected target information such as position, flight plan and flight dynamics. Mode S interrogations will be performed so that interference with other civil and military Mode S surveillance functions is minimized. Because it is not secure, Mode S usage is limited to civilian identification and verification. IFF Mode 4 will have priority over Mode S at all times, but Mode 4 will be used only during conflict and during exercises.

5.2 Operational Concept

The operation of Mode S on NE-3A will utilize Stochastic Acquisition with Lockout Override running in a background mode. Discrete interrogations may be initiated automatically or by operator requests for information.

Two separate modes will be available to be independently assigned to sectors as designated by the operator. These modes are the following:

1. Mark XII only
2. Interleaved Mark X/Mode S

Mode S interrogations include a 24-bit acquisition address and a data link. During normal Mode S operation, target acquisition using Mode S all-calls, either stochastic acquisition with lockout protocol (only when the II code is greater than 0) as described in ICAO Annex 10 Vol 4, or Stochastic Acquisition with Lockout override (only when the II code = 0) as described in the SARPS (Ref. 2) and tailored in section 7.3, as selected by the operator, will be running in a background mode. Intermode capability is not provided. Coordination with nearby NE-3A platforms and ground interrogators is necessary to prevent mutual interference.

The passive reception of Mode S squitter DF 11 and DF 17 (Mode S address and GPS location) to support target acquisition can occur during the receive portion of the Mode S active modes. However, due to narrow NE-3A IFF beam width, this Mode S capability is expected to be of limited utility in the NE-3A environment.

It is recognized that mode S transaction capacity is limited by Mode S beamdwell time, interrogator set duty cycle, target environment and movements, and operator-initiated command loading.

An operational concept for Mode S implementation for the NE-3A can be defined as follows:

- Perform surveillance and identification using existing Mark XII Modes 1, 2, 3/A, 4 and C.
- In the Mark X/Mode S interleaved mode, the Mode S technical address (24-bits) will be obtained for each aircraft in a sector of interest by issuing Mode S only (Uplink Format 11) all-call interrogations.
- To control synchronous garble, the Stochastic Acquisition Process will be used in which all-call interrogations specify a commanded probability of reply established by the density of aircraft within the azimuth region of interest and limited to a value of less than or equal to a maximum value as specified by the operator.
- When using the Stochastic Acquisition with Lockout Override method of target acquisition, discretely addressed interrogations using interrogator identifier code zero (II Code = 0) and using limited selective lockout of previously acquired aircraft can be used in a high garble zone to more quickly obtain the technical address of the remaining targets when accelerated aircraft acquisition is required.
- The Mode S technical address will be correlated and maintained to the aircraft in track by using IFF Mode 3 and Mode C information.
- Discretely addressed Mode S interrogations using the corresponding technical address may be automatically initiated to support target acquisition, data link transactions (including Air Initiated Comm-B), downlink broadcast, or track file maintenance, or initiated by the operator to obtain or transfer operator-specified data.

5.3 Mode S Data Requests

When the Mode S system is operational, requests for Mode S information on targets of interest is obtained by one of the two approaches listed below:

AUTOMATIC OPERATION – Automatic operation is defined as the automatic performance of the following capabilities:

- Acquire, store, correlate with SIF, and report Mode S target addresses.
- Mode S target location tracking.
- Detect target requests for downlink broadcast and extract and report messages.
- Detect and report target requests for data transaction and extract and report messages.
- Detect extended squitter (DF 17) and report messages.

SELECTIVE INTERROGATION REQUEST BY OPERATOR – Selective interrogations are Mode S interrogations that are initiated by operator input. The operator can confirm target identification or obtain additional information (for example Ground Initiated Comm-B/Mode S specific protocols) from an individual target or all targets in a sector.

5.4 NE-3A Mode S Level 2 Enhanced Definition

The NE-3A shall be capable of performing the following Mode S functions per the referenced documents:

- A. Stochastic acquisition with lockout protocol, only with the II code greater than 0 (ICAO Annex 10 Vol 4, para 3.1.2.5 (Reference 5)), using the Lockout protocols, (ICAO Annex 10, Vol. 4, para. 3.1.2.6.9)
- B. Stochastic Acquisition with Lockout override using II code = 0 (Ref. 2) as described in section 7.3
- C. Addressed surveillance altitude and identity transactions (ICAO Annex 10, Vol. 4, paras. 3.1.2.6.1, 3.1.2.6.3, 3.1.2.6.5, 3.1.2.6.7)
- D. Basic data protocols (ICAO Annex 10, Vol. 4, para. 3.1.2.6.10)
- E. Squitter detection (ICAO Annex 10, Vol. 4, para. 3.1.2.8.4)
- F. GPS Squitter using DF 17 (as described in “Extended Squitter Formats”, SC186 WG2/SG3, Rev 1.1, dated 18 July 1996 (Reference 7))

G. Standard Length Communications

(ICAO Annex 10, Vol. 4, para. 3.1.2.6.2, 3.1.2.6.4, 3.1.2.6.6, 3.1.2.6.8, and 3.1.2.6.11) per section 4.6, including:

1. Ground-initiated Comm B

(ICAO Annex 10 Vol 4, para. 3.1.2.6.11.2) to obtain the following information from transponder BDS registers (Manual on Mode S Specific Services):

- Magnetic heading
- Speed
- Roll Angle
- Track Angle Rate
- Vertical Rate
- True Track Angle/Ground Speed
- Extended squitter
- Way points
- Next Waypoint
- Level-off altitude
- Aircraft type
- Data link capability report
- Aircraft identification

2. Air initiated Comm B

(ICAO Annex 10 Vol 4, para. 3.1.2.6.11.3)

3. Standard Length Message frame transmit and receive capability

(ICAO Annex 10 Vol 3 (Reference 5), Chapter 5), consisting of the following Mode S Specific Protocols:

- Dataflash (Uplink MSP channel 6 and Downlink MSP Channel 3, as defined in the Manual on Mode S Specific Services)

4. Capability to perform Comm-A Broadcasts

(ICAO Annex 10 Vol. 4, para. 3.1.2.6.11.1.2).

5. Comm-B broadcast (ICAO Annex 10 Vol 4, para. 3.1.2.6.11.4),

consisting of the following Mode S Broadcasts Protocols:

- Downlink broadcast data link capability report (Manual on Mode S Specific Services)
- Downlink broadcast aircraft identification (Manual on Mode S Specific Services (Reference 6))

6.0 Functional Requirements

To implement limited Mode S surveillance for the NATO Midterm Enhancement Program, the following IFF functional capabilities are necessary.

6.1 Interrogator Functional Requirements

Interrogator Set-level requirements

- The interrogator set shall be capable of performing either Stochastic Acquisition with Lockout Override (using II code=0), or Stochastic Acquisition with Lockout using II code >0, as commanded by the NE-3A.
 - The interrogator set shall maintain at all times a minimum Mode S all-call rate of at least one Mode S only all-call every 9 IRPs, when Mode S is enabled and active.
 - The interrogator set shall transmit an NE-3A-provided SLM frame, consisting of up to four Comm-A segments* (one segment for II=0), to the target. The interrogator set shall report to the NE-3A over the report bus if a technical acknowledgment was received from the target that the SLM frame was received. The interrogator set shall report to the NE-3A over the report bus if transmission of the SLM frame was not successful.
 - The interrogator set shall have the capability to automatically extract a downlinked SLM frame received from a target, consisting of up to four Comm-B segments* (II>0). The interrogator set shall send the extracted SLM frame to the NE-3A over the report bus, if it was received correctly.
 - The interrogator set shall be able to automatically recognize an Air-Initiated Comm-B and Comm-B broadcasts from a target during roll-call, automatically obtain the Comm-B messages when the II code (II > 0) of the AICB matches the II code NE-3A used in that sector and close out the transaction. The interrogator shall provide the messages to the NE-3A using the report bus.
 - The NE-3A shall provide to the interrogator set a broadcast message, an indication that the message is a broadcast, and the sector in which the broadcast is to be made. The broadcast message shall be no more than 56 bits, and shall be contained in an MA field. The interrogator set shall broadcast the message at least once every 12 IRPs in the defined sector. The interrogator set shall not have to meet performance requirements while the broadcast messages are transmitted.
-
- “Segments” is defined in ICAO Annex 10, Vol III.

Processor/Controller:

- Perform monopulse processing to obtain an accurate Mark XII azimuth with fewer interrogation and reply sequences.
- Perform reply to reply correlation.
- Process Mode S interrogation and replies for Mark XII.
- Select appropriate stochastic reply probability and schedule Mode S all-call interrogations within the appropriate beamwidth.
- Monitor ungarbled all-call replies and correlate them with aircraft of interest.
- Schedule discrete Mode S interrogations to elicit desired supplementary information and obtain altitude and ATCRBS 4096 code for correlation confirmation.
- Store acquired 24-bit addresses in a track file.
- Generate Mode S reports.
- Schedule Mode S and MK XII interleave interrogations.
- Perform Scan-to-Scan Correlation of reports.

Receiver:

- Receive Mode S and Mark XII replies.
- Receive squitter emissions

Transmitter:

- Dual transmitters are required for Mode S sidelobe suppression (P5 and P6 are transmitted at the same time).
- Accommodate the higher duty cycle required for Mode S over MK XII.

6.2 System Level Requirements

- Mission system user interface for initiating Mode S interrogations
- New target report format to include the Mode S reply information

7.0 Document Tailoring

The following Mode S Services, as defined in ICAO Annex 10, Amendment 71, Vol. 4, are not applicable to the NE-3A:

- Intermoder
 - Mode A and Mode C by way of Intermoder protocol
- Note: Mode A and Mode C are provided as defined in DOD-AIMS-65-1000B
- Extended Length Communications
- ACAS Air to Air Transactions (except for Acquisition Squitter and Extended Squitter)

Data Processing and Interfaces of the Essential System Characteristics of the SSR Mode S Transponder, as defined in ICAO Annex 10, Amendment 71, Vol. 4, are not applicable to the NE-3A.

For ICAO Annex 10, Amendment 71, Vol. 3, only Uplink Frames and Downlink Frames of the Mode S Subnetwork Characteristics are applicable to the NE-3A.

7.1 ICAO Annex 10, Volume 4 Modifications

3.1.2.1.5.1 and associated subparagraphs deleted (Intermoder Interrogations)

3.1.2.5.1 deleted (Intermoder Transactions)

3.1.2.6.9.2 deleted (Non-selective all-call lockout)

3.1.2.6.11.3.2 Only multisite-directed Comm-B capability shall be supported

3.1.2.6.11.3.3 and associated subparagraphs deleted (Non-selective AICB)

3.1.2.6.11.3.4 and associated subparagraphs deleted (Enhanced AICB)

3.1.2.7 and associated subparagraphs deleted
(Extended Length Communication Transactions)

3.1.2.8.1 and associated subparagraphs deleted
(Short Air-to-Air Surveillance Uplink Format 0)

3.1.2.8.2 and associated subparagraphs deleted
(Short Air-to-Air Surveillance Downlink Format 0)

3.1.2.8.3 deleted (Air-to-Air Transaction Protocol)

3.1.2.10.3.7.3 and associated subparagraphs deleted
(Minimum Mode S ELM peak reply rate)

7.2 ICAO Annex 10, Volume 3 Modifications

5.2.2.1.2 deleted (ELM Frame)

5.2.9 and associated subparagraphs deleted (Data Link Capability Format)

7.3 **SARPS Modifications**

Section 1 containing paragraph 3.8.2.5.2.1.2: This is a note and not a requirement.

Section 2 containing paragraph 3.8.2.5.2.1.2, change to read as follows:

Paragraph 3.1.2.5.2.1.2:

“Modify the paragraph as follows:

3.1.2.5.2.1.2 II: Interrogator Identifier. This 4-bit (10-13) uplink field shall contain an interrogator identifier code. These II codes shall be assigned to interrogators in the range of 0 to 15. An II code value of zero shall only be used in conjunction with acquisition based on lockout override (3.1.2.5.2.1.3) except when using limited selective lockout to acquire aircraft in garble zones.”

Section 3 containing new paragraph 3.8.2.5.2.1.3, change to read as follows:

New paragraph 3.1.2.5.2.1.3:

“3.1.2.5.2.1.3 Operation based on lockout override for an interrogator without an assigned interrogator code will be in accordance with subparagraphs 3.1.2.5.2.1.3.1 through 3.1.2.5.2.1.3.3.

3.1.2.5.2.1.3.1 Maximum Mode S-only All-Call Interrogation Rate.

The maximum number of Mode S-only all-call interrogations made by an interrogator using acquisition based upon lockout override shall depend on the reply probability as follows:

- a) For a reply probability equal to 1.0:
the smaller of 3 interrogations per 3dB sum beam dwell
or 30 interrogations per second.*
- b) For a reply probability equal to 0.5:
the smaller of 5 interrogations per 3dB sum beam dwell
or 60 interrogations per second.*
- c) For a reply probability equal to 0.25 or less:
the smaller of 10 interrogations per 3dB sum beam dwell
or 125 interrogations per second.*

3.1.2.5.2.1.3.2 Unused

3.1.2.5.2.1.3.3 Field Content for a Selectively Addressed Interrogation.

Selectively addressed interrogations used in connection with acquisition using lockout override shall have interrogation field contents restricted as follows:

- UF equal to 4, 5, 20, or 21*
- PC equal to 0*
- RR not equal to 16 if RRS=0*
- DI equal to 7*
- IIS equal to 0*
- LOS equal to ZERO except when using limited selective lockout to acquire aircraft in garble zones*
- TMS equal to 0”*

Section 4 containing new paragraph 3.8.2.5.2.1.4: These are notes and recommendations and are not requirements.

8.0 **References** – Applicable to the extent stated herein.

1. IMSM-KEC-382-95, dated 16 October 1995 and the enclosure to that memo.
2. SSR Improvements and Collision Avoidance Systems Panel, SSR Mode S System Working Group-1, System SARPS and Guidance Material Changes for Mode S Acquisition Using Lockout Override SCASP/WG-1, WP/1/528, Attachment 1, dated 25 November 1996.
3. Not Used
4. NATO Military Concept of Use for Mode S, Draft dated 26 April 1996.
5. International Standards, Recommended Procedures for Air Navigation Services, Aeronautical Telecommunications - International Civil Aviation Organization (ICAO) Annex 10, First Edition of Volume 4, section 3.1.2., dated July 1995, Amendment 71; First Edition of Volume 3, chapter 5, dated July 1995, Amendment 71.
6. Manual of Mode S Specific Services, ICAO Doc. 9688-AN/952, dated 1997 (First Edition)
7. Extended Squitter Formats, SC186 WG2/SG3, Rev 1.1, dated 18 July 1996