ADST/TR 94-003276

ADVANCED DISTRIBUTED SIMULATION TECHNOLOGY ADVANCED ROTARY WING AIRCRAFT

SYSTEM/SEGMENT SPECIFICATION VOLUME II of V FLIGHT STATION MODULE

Loral Systems Company
12151-A Research Parkway
Orlando, FL 32826-3283

31 March 1994

Contract No. N61339-91-D-0001
ARWA - Delivery Order No. 0048
CDRL A00E

Prepared for:

Simulation Training and Instrumentation Command
Naval Air Warfare Center
Training Systems Division
12350 Research Parkway
Orlando, FL 32826-3224

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13. ABSTRACT (Maximum 200 words)

The ADST ARWA System/Segment Specification establishes the functional requirements for the Advanced Rotary Wing Aircraft (ARWA) Simulator System (SS). Volume II describes the requirements for the Flight Station Module (FSM). The FSM component provides aircraft simulation for electrical system, fuel management system, hydraulic system, and crew station interfaces associated with the flight station and its functions and control.

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1. SCOPE

1.1 Identification. This System/Segment Specification volume establishes the requirements for the Flight Station module of the Advanced Rotary Wing Aircraft Device (ARWA). This volume is one of three volumes of a System/Segment Specification defining an Advanced Rotary Wing Aircraft Simulation System (ARWA SS) for tactical combined forces aircrew simulation devices. Volume I of this specification contains system level requirements pertaining to system structure, communication architecture, network interface performance, system diagnostic and test, programming language applicability, adaptability and expandability, and other requirements which pertain to the ARWA SS.

1.2 Purpose. The purpose of the Flight Station module is to simulate the functions allocated to the Flight Station module within the ARWA. The module shall contain the following functions:

a. Flight Station Support

b. Electrical System

c. Hydraulic System

d. Fuel Management System

e. Crew Station Interface

Each of the functions identified are processed within the Flight Station module. However, data may be input from, output to and/or shared by other modules via the ARWA global bus.

1.3 Introduction. This System/Segment Specification volume defines unique requirements of the Flight Station module for the ARWA. It contains descriptions of the functions performed within the module, communication interface requirements, module performance requirements, module diagnostic and test requirements, and expandability and adaptability requirements as applicable to the Flight Station module.

2. APPLICABLE DOCUMENTS

2.1 Government Documents. The following documents of the exact issue shown form a part of this specification to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of this specification shall be the superseding requirement.

The Government documents which are applicable to the entire ARWA SS are listed in Volume I of this specification, paragraph 2.1, Government Documents. The following Government documents are in addition to those documents and specifically applicable to the Flight Station module.

None.

2.2 Non-Government Documents. The following documents of the exact issue shown form a part of this specification to the extent specified herein. In the event of conflict between the documents reference herein and the contents of this specification, the contents of this specification shall be the superseding requirement.

The non-Government documents which are applicable to the entire ARWA SS are listed in Volume I of this specification, paragraph 2.2, Non-Government Documents. The following non-Government documents are in addition to those documents and specifically applicable to the Flight Station module.

ATZQ-TDS-SM (70-17d) Memo dated 5 June 1991, Rotary Wing Aircraft (RWA) Requirements for Advanced Distributed Simulation Technology (ADST)

3. REQUIREMENTS

3.1 Module Definition.

3.1.1 Missions. The Flight Station module is intended to provide the Flight Station portion of simulation in tactical operating procedures, and mission procedures for the RAH-66 and AH-64D application aircraft. The crewmember should gain proficiency in executing normal mission procedures, in recognizing malfunctions/abnormal indications, and executing the corresponding emergency procedures. The key features of the ARWA are to be able to shoot, move, communicate, rearm, and be resupplied. The crewmembers will consist of aircraft and crew qualified aviators supporting team tactical mission experiments. In addition, the Flight Station module shall support the mission requirements described in paragraph 3.1.1 of Volume I of this specification.

3.1.2 Threat. Not applicable.

3.1.3 Module Modes and States. The Flight Station module shall support as a minimum the system modes and states as described in paragraph 3.1.3 of Volume I of this specification.

3.1.4 System Functions. The following list summarizes the top level functionality requirements and functions which shall be contained within the Flight Station module.

a. Flight Station Support Function

b. Electrical System Function

c. Hydraulic System Function

d. Fuel Management System Function

e. Crew Station Interface Function

3.1.4.1 Flight Station Support Function.

3.1.4.1.1 Purpose. The Flight Station support function is responsible for providing the module unique support services required for the operation of the Flight Station module in the ARWA environment. The Flight Station support function services shall include the following:

a. Executive Control

b. Initialization

c. ARWA Global Bus Communication

d. Diagnostics and Test

e. Backdoor Interfacing

f. Malfunctions

h. Security Processing

3.1.4.1.2 Physical Characteristics. The following paragraphs describe the physical characteristic requirements applicable to the Flight Station module support function services.

3.1.4.1.2.1 Executive Control. The executive control support service shall provide the Flight Station module-unique hardware required to meet the executive control performance characteristic requirements for the Flight Station module.

3.1.4.1.2.2 Initialization. The initialization support service shall provide the Flight Station module-unique Hardware (H/W) required for initializing the Flight Station module.

3.1.4.1.2.3 ARWA Global Bus Communication. The ARWA global bus communication support service shall provide the Flight Station module-unique H/W required to communicate with other ARWA modules via the ARWA global bus. For the ARWA, H/W required to communicate with the ARWA global bus shall be provided and shall meet the requirements contained in Volume I of this specification, paragraph 3.1.7, Communication Architecture Requirements.

3.1.4.1.2.4 Diagnostics and Test. The diagnostics and test support service shall provide the Flight Station module-unique H/W required to perform the module-unique diagnostics and test requirements.

3.1.4.1.2.5 Backdoor Interfacing. The backdoor interfacing support service shall provide the Flight Station module-unique hardware required to satisfy all Flight Station module backdoor interfaces or interface to any hardware specific to the module other than the computational system hardware. For this application the Flight Station module shall provide the video displays and associated video mixers and symbol generators to emulate the crew station displays.

3.1.4.1.2.6 Malfunctions. The malfunctions support service shall provide the Flight Station module-unique hardware required to satisfy the malfunction performance characteristics for the Flight Station module.

3.1.4.1.2.7 Security Processing. The security processing support service shall provide the Flight Station module unique hardware required to satisfy the security processing performance characteristics for the Flight Station module. The Flight Station Module shall provide the capability to remove classified information to be saved and placed in storage.

3.1.4.1.3 Performance Characteristics. The following paragraphs describe the performance characteristic requirements applicable to the Flight Station module support function services.

3.1.4.1.3.1 Executive Control. The executive control support service shall provide the operational control for the Flight Station module. This functional control shall include execution sequencing of all software and hardware allocated to the Flight Station module, mode and state control and communication between the simulation software and the bus interface unit.

3.1.4.1.3.2 Initialization. The initialization support service shall provide all Flight Station module initialization and control of all initialization processes for the Flight Station module. The capability to initialize to a specific mission or parameter data set shall be provided.

3.1.4.1.3.3 ARWA Global Bus Communication. The ARWA global bus communication support service shall provide the interface between the Flight Station module and the ARWA global bus to allow communication with other modules in the ARWA. The Flight Station module shall communicate with the ARWA global bus in accordance with the requirements contained in Volume I of this specification, paragraph 3.1.7 and the ARWA Simulation System Module (SSM) Interface Design Document (IDD), Appendix A.

3.1.4.1.3.4 Diagnostics and Test. The diagnostics and test support service shall provide the diagnostic and test control and implementation for the Flight Station module. The diagnostic and test requirements for the Flight Station module are as follows:

3.1.4.1.3.4.1 On-Line Diagnostics. The Flight Station module shall be capable of determining and providing an on-line and functional status to the Simulator System module. This status will be provided to the Simulator System module at a periodic rate when requested. The interface for this diagnostic shall be as defined in the ARWA SSM IDD, Appendix A.

3.1.4.1.3.4.2 Off-Line Diagnostics. The Flight Station module shall be capable of performing off-line diagnostics to allow basic debugging and trouble shooting of the hardware and software contained within the Flight Station module. Vendor provided diagnostics for off-the-shelf commercial equipment shall be provided as off-line diagnostics.

3.1.4.1.3.4.3 Remote Controlled Diagnostics. The Flight Station module shall be capable of performing a limited set of remote controlled diagnostics. These diagnostics will be requested by the Simulator System module. The diagnostics shall be a limited set of the off-line diagnostics. The diagnostics shall be as defined in Volume I, paragraph 3.1.3.6 of this specification.

3.1.4.1.3.5 Backdoor Interfacing. The backdoor interfacing support service shall provide the interface for backdoor or other unique hardware/software interfacing for the Flight Station module. The backdoor interfaces for the Flight Station module shall consist of the crew station displays that will be shared with the Visual module.

3.1.4.1.3.6 Malfunctions. The malfunctions support service shall provide the control for the processing and implementation of the malfunctions for which the Flight Station module is responsible. Malfunctions for the ARWA shall be based on damage assessment for any damage which the Flight Station module is responsible. This shall include the degradation of the appropriate systems within the Flight Station module based on the evaluation of the damage severity and location. The malfunction requirements for the Flight Station module shall be as defined in Volume I of this specification, Appendix A.

3.1.4.1.3.7 Security Processing. The security processing support service shall provide for the processing of the security requirements of the Flight Station module.

3.1.4.2 Electrical System Function.

3.1.4.2.1 Purpose. The electrical system function simulates the electrical power generation and distribution system in the ARWA.

3.1.4.2.2 Physical Characteristics. There are no physical characteristic requirements for the electrical system function.

3.1.4.2.3 Performance Characteristics. The electrical system function shall produce outputs to the cockpit indicators and other modules such that the crew shall perceive no more than minor differences between the simulation and the application aircraft performance, operations, or characteristics. These differences shall not detract from the tasks that are supported by the simulation.

The electrical system function shall provide a very simplified electrical power and distribution model whereby AC and DC power is available at all times unless simulated combat damage is incurred. A detailed simulation including circuit breaker simulation shall not be provided.

3.1.4.2.4 Initial Conditions. The electrical system function shall initialize all electrical system parameters to a state representative of the cockpit control positions.

3.1.4.3 Hydraulic System Function.

3.1.4.3.1 Purpose. The hydraulic system function simulates the ARWA hydraulic systems.

3.1.4.3.2 Physical Characteristics. There are no physical characteristic requirements for the hydraulic system function.

3.1.4.3.3 Performance Characteristics. The hydraulic system function shall produce outputs to the cockpit indicators and other modules such that the crew shall perceive no more than minor differences between the simulation and the application aircraft performance, operations, or characteristics. These differences shall not detract from the tasks that are supported by the simulation.

The hydraulic system function shall provide a simplified hydraulic system model whereby hydraulic pressure is available at all times unless simulated combat damage is incurred. A detailed simulation of the hydraulics system including hydraulic system pumps and valves shall not be provided.

3.1.4.3.4 Initial Conditions. The hydraulic system function shall initialize all hydraulic systems to a fully charged state indicative of a fully serviced aircraft.

3.1.4.4 Fuel Management System Function.

3.1.4.4.1 Purpose. The fuel management system function defines the transfer of fuel throughout the application aircraft, including feed to the engines, tank to tank, fuel dump and fuel replenishing from sources external to the aircraft.

3.1.4.4.2 Physical Characteristics. There are no physical characteristic requirements for the fuel management system function.

3.1.4.4.3 Performance Characteristics. The fuel management system function shall produce outputs to the cockpit indicators and other modules such that the crew shall perceive no more than minimal differences between the simulation and the application aircraft performance, operations, or characteristics. These differences shall not detract from the tasks that are supported by the simulation.

The fuel management system function shall provide a simplified fuel supply and distribution model. The simulation shall include total fuel quantity and indication, fuel depletion as a function of engine depletion rate, and ground refueling. The capability to freeze total fuel quantity shall be provided. A detailed fuel system simulation including fuel transfer and boost simulation shall not be provided.

3.1.4.4.4 Initial Conditions. The fuel management system function shall initialize the fuel quantity to a full state as a default. Fuel quantity shall also be initialized as part of the mission initialization.

3.1.4.5 Crew Station Interface Function.

3.1.4.5.1 Purpose. The crew station interface function provides the interface to various simulated and actual aircraft equipment. This function provides a centralized interface for multi-purpose equipment and all equipment which is not time critical. Representative equipment supported by this function include: cockpit controls and displays, aircraft avionics, the crew compartment and aural system hardware.

3.1.4.5.2 Physical Characteristics. Physical characteristic requirements for the crew station interface function are as follows:

a. This function shall provide the reconfigurable crew compartment for the ARWA. This crew compartment shall be reconfigurable to the crew compartments of the AH-64D and RAH-66.

b. For each crew compartment configuration this function shall provide cockpit controls and displays.

c. The entire crew compartment shall fit in an area of 16 feet in length, 16 feet in width, and 16 feet in height.

d. The time required to reconfigure the device shall no greater than 60 minutes.

e. Interface hardware and/or software shall be provided to drive all active controls and displays.

3.1.4.5.3 Performance Characteristics. The performance characteristic requirements for the crew station interface function shall be as follows:

a. The crew station interface function shall produce outputs to the cockpit indicators and other modules and receive inputs from the crew compartment such that the crew shall not perceive any noticeable difference between the simulation and the actual aircraft performance,

operations, or characteristics for the tasks that are supported by the simulation.

b. The crew station interface function shall provide data unit conversion to and from the engineering representation as presented on the ARWA global bus to the electrical and/or data units required for stimulation of cockpit displays and the recording of control input.

3.1.4.5.4 Initial Conditions. The crew station interface function shall initialize all controls and displays to a state which is indicative of the current state of the aircraft.

3.1.5 Module Functional Relationships. The top level functional relationships of the functions within the Flight Station module are shown in Figure 3.1.5-1. As described in paragraph 3.1.4.1, Flight Station Support Function, module control is the sole responsibility of the Flight Station support function. Each function shall operate in a manner which will allow the module, as a system, to satisfy the timing requirements described in Volume I of this specification, paragraph 3.1.5.1.4, Synchronization and Timing. As a minimum, the functions implemented within the Flight Station module shall operate in such a manner which allow the module to meet both module and system level requirements without degradation.

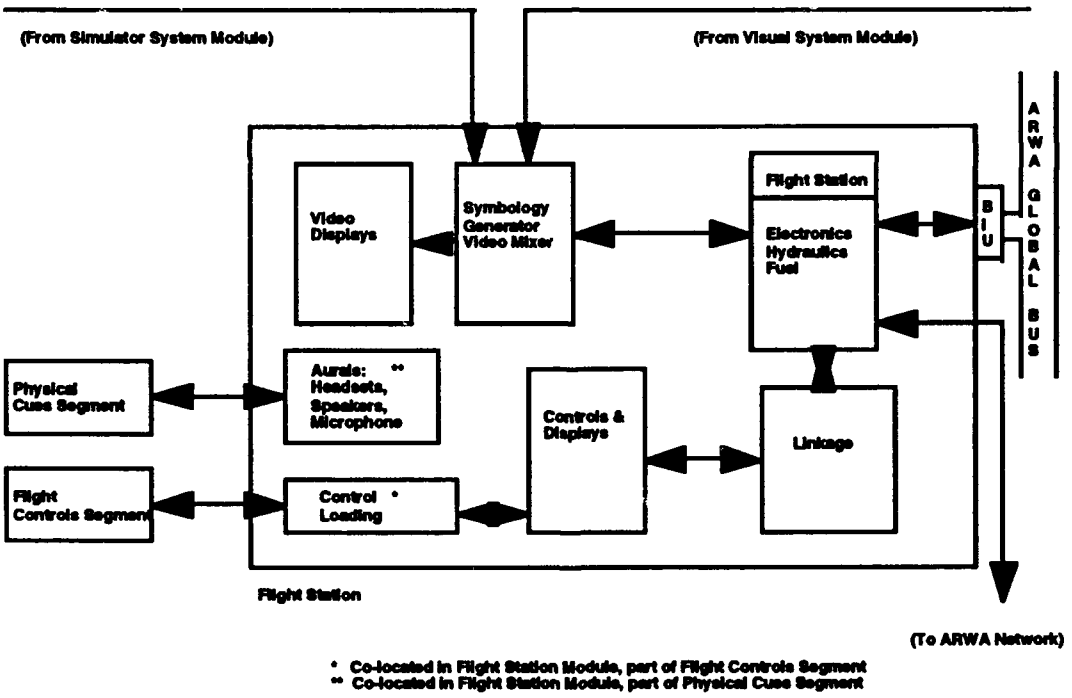

Figure 3.1.5-1 Flight Station Module

3.1.6 Configuration Allocation. In addition to the requirements contained in Volume I of this specification, paragraph 3.1.6, Configuration Allocation, this paragraph defines the configuration allocation requirements which are specific to the Flight Station module. Reference Figure 3.1.6-1 for the internal interface diagram. The FSM hardware and software allocations are as follows:

a. Computational System Software

b. Flight Station Simulation Software

c. Cockpit Input/Output (I/O) Software

d. Computational System Hardware

e. Cockpit I/O Hardware

f. Cockpit

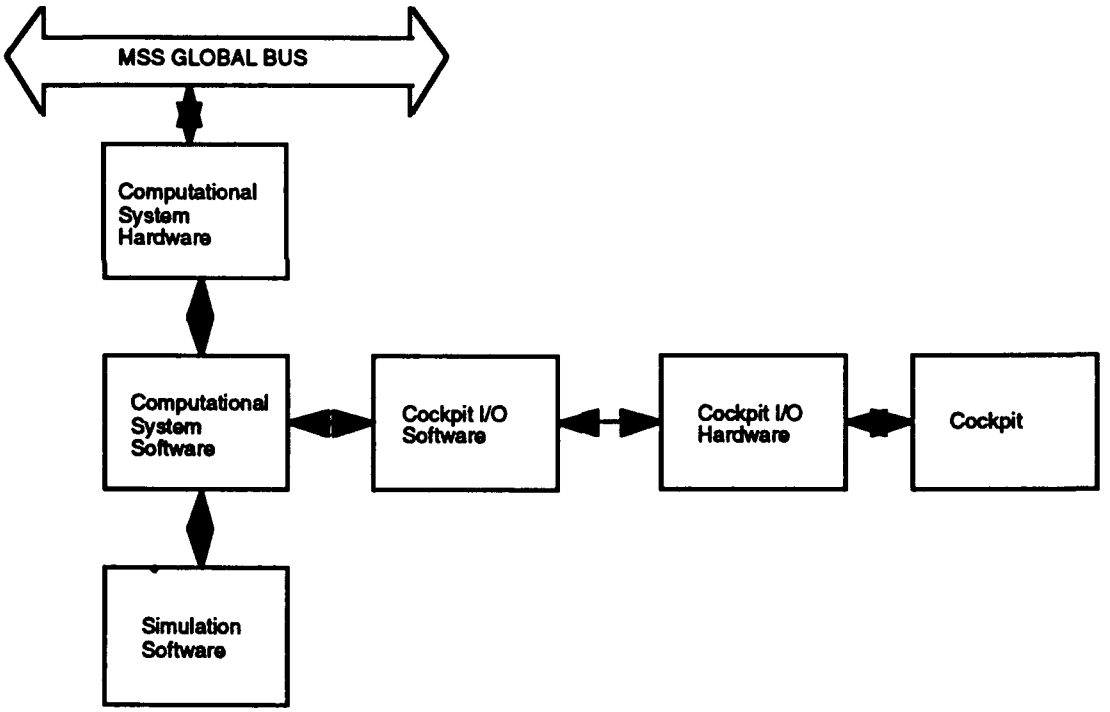

Figure 3.1.6-1 Flight Station Module Internal Interfaces

3.1.6.1 Computational System Software. The computational system software shall include the host computer system software, including the operating system, deliverable computer system diagnostics, compilers, and applicable development and support tools.

3.1.6.2 Flight Station simulation Software. The Flight Station simulation software shall simulate the functional and performance characteristics of the ARWA Flight Station module. The Flight Station module functions contained within this CSCI shall include Flight Station support, electrical system, hydraulic system, fuel management system and crew station interface.

3.1.6.3 Cockpit Input/Output (I/O) Software. The cockpit I/O software shall include all software required to drive the cockpit interface hardware and backdoor crew station displays. This shall include device drivers, conversion routines, calibration routines, and associated diagnostics.

3.1.6.4 Computational System Hardware. The computational system hardware shall include the computer system hardware, including processors, memory, mass storage, peripherals, user terminals, and miscellaneous interface cables, connectors, and chassis.

3.1.6.5 Cockpit I/O Hardware. The cockpit I/O hardware shall include all interface electronics required to stimulate/simulate cockpit indicators and sense cockpit control inputs including the backdoor crew station display hardware.

3.1.6.6 Cockpit. The cockpit shall include the application aircraft cockpit, all simulated or actual aircraft components, and all associated support structures and interface hardware.

3.1.7 Interface Requirements. The Flight Station requires both external and internal interfaces. The following paragraphs describe the interface re.. ments for the Flight Station module.

3.1.7.1 External Interfaces. The external (intermodule) interfaces for the Flight Station module shall consist of the following:

a. ARWA Global Bus Interface. This interface is identified as the interface data which is sent to, or received from, the ARWA global bus. This external interface is composed of input and output data that are passed between the functions contained in the Flight Station module and those functions contained in the other modules comprising the ARWA. The ARWA Global Bus interface which shall be used for the Flight Station module is specified in the ARWA SSM IDD Appendix A and Paragraph 3.1.7 of ARWA System/Segment Specification, Volume I.

b. ARWA Network Interface. This interface is identified as the interface to the ARWA Network bus. This will be a primarily non-real-time interface for software development, maintenance, and download; device boot-up and top-level device control from the Simulation Manager.

c. Aural Interface. This interface will be a physical interface and electrical interface for the aural input/output devices. These devices will include the following: 1) speakers to output environmental sounds created by the Physical Cues segment of the Simulator System module and 2) headsets and microphones for communication, navigation and threat warning audio from the Navigation and ASE segments of the Simulator System module. The Flight Station module shall provide for the mounting of these devices in the crew compartment design.

d. Control Loading Interface. This interface will be a hardware/electronic interface with the Flight Controls segment of the Simulator System module. Although technically part of the Flight Controls Segment, the control loading hardware will be co-located in the Flight Station module. The Flight Station module shall provide power as required for the control loading hardware and the physical interface required to mount the control loading hardware to the crew compartment.

e. Visual and Crew Station Display Interface. This interface will be a video interface between the Visual module and the crew station displays which are backdoor connections to the Flight Station module. The Flight Station module shall provide power as required for the crew station displays, mount the displays in the crew compartment in a location identical to the simulated aircraft, and provide video mixing and symbology generation for the crew station displays.

3.1.7.2 Internal Interfaces. The internal (intramodule) interfaces for the Flight Station module consist of the I/O data that are passed between the functions located within the Flight Station module. The general nature of these interfaces is described in paragraph 3.1.5. There are no specific internal interface requirements for the Flight Station module. However, the internal interfaces shall be designed and well defined to facilitate straight forward updates and revisions of hardware and software and system reconfiguration.

3.1.8 Government Furnished Property. There is no additional government furnished property specifically applicable to the design and or development of the Flight Station module in addition to the Government furnished property defined in Volume I of this specification, paragraph 3.1.8.

3.2 System Characteristics. The system characteristic requirements for the Flight Station module shall be as specified in Volume I of this specification, paragraph 3.2, and all subparagraphs of paragraph 3.2.

3.3 Flight Station Module Processing Resources. The system level processing resource requirements applicable to all modules in the ARWA SS are defined in Volume I of this specification, paragraph 3.3, System Processing Resources. As a minimum, the specific processing resources for the Flight Station module shall include the computational system hardware and software required to design, develop, and test the Flight Station module.

3.4 Quality Factors.

3.4.1 Reliability. The system level reliability requirements applicable to all modules in the ARWA SS are defined in Volume I of this specification, paragraph 3.4.1. There are no additional reliability requirements specifically applicable to the Flight Station module.

3.4.2 Maintainability. The system level maintainability requirements applicable to all modules in the ARWA SS are defined in Volume I of this specification, paragraph 3.4.2. There are no additional maintainability requirements specifically applicable to the Flight Station module.

3.4.3 Flexibility and Expansion. The system level flexibility and expansion requirements applicable to all modules in the ARWA SS are defined in Volume I of this

specification, paragraph 3.4.3. There are no additional flexibility and expansion requirements specifically applicable to the Flight Station module.

3.4.4 Availability. The system level availability requirements applicable to all modules in the ARWA SS are defined in Volume I of this specification, paragraph 3.4.4. There are no additional availability requirements specifically applicable to the Flight Station module.

3.4.5 Portability. The system level portability requirements applicable to all modules in the ARWA SS are defined in Volume I of this specification, paragraph 3.4.5. There are no additional portability requirements specifically applicable to the Flight Station module.

3.5 Logistics. The logistics requirements for the Flight Station module shall be identical to those specified in Volume I of this specification, paragraph 3.5, and all subparagraphs of paragraph 3.5.

3.6 Precedence. The precedence requirements for the Flight Station module shall be as specified in Volume I of this specification, paragraph 3.6.

4. VERIFICATION REQUIREMENTS

4.1 General. The system level general verification events, levels and methods of testing for the Flight Station module are defined in Volume I of this specification, paragraph 4.1 and all subparagraphs of paragraph 4.1. For the Flight Station module operating in the MSS, there are no additional general verification requirements.

4.1.1 Philosophy of Testing. In addition to the testing philosophy identified in Volume I of this specification, paragraph 4.1.1, informal standalone module testing shall be conducted for the flight station module prior to integration with the system. The intent of these tests shall be to identify and resolve any unique module related deficiencies prior to system integration thus reducing integration problems.

4.1.1.1 Testing Events. Scheduled testing shall take place sequentially in the following phases.

4.1.1.1.1 Verification Test. Verification test at a system level shall be conducted as specified in Volume I of this specification, paragraph 4.1.1.1.1. Module level verification testing shall be accomplished prior to shipment of the module to the integration facility and shall ensure that the module meets the functional and performance requirements of this volume of the specification.

4.1.1.1.2 Acceptance Test. Acceptance test at a system level shall be conducted as specified in Volume I of this specification, paragraph 4.1.1.1.2. Module level acceptance testing shall consist of installation and checkout of the module at the integration facility and accomplishment of a subset of the module level verification tests to ensure that the module meets the functional and performance requirements of this volume of the specification in the installed configuration.

4.1.2 Location of Testing. All system level testing shall be accomplished in the locations identified in Volume I of this specification, paragraph 4.1.2. All module level verification testing shall be accomplished at the module builders facility. All module level acceptance testing shall be accomplished at the system integration facility.

4.1.3 Responsibility for Tests. The responsibility for system level testing shall be as defined in Volume I of this specification, paragraph 4.1.3. The responsibility for module level testing shall be allocated to the module builder and system integrator.

4.1.4 Verification Methods. Verification methods shall be as defined in Volume I of this specification, paragraph 4.1.4.

4.2 Formal Tests. Formal test shall consist of functional and performance testing.

4.2.1 Performance Evaluation. Performance evaluations which verify the design and development of the configuration items shall be performed to test that the design and performance of the configuration items meet the requirements specified in paragraph 3.1 of this Volume and Volume I of this specification. Performance evaluation shall consist of inspections, analyses, demonstrations and tests.

4.2.3 Reliability and Maintainability. Reliability and maintainability testing shall not be performed.

4.2.4 Test Equipment. Test equipment requirements applicable to all modules are described in Volume I of this specification, paragraph 4.2.4. There is no additional module unique test equipment required to verify that the configuration items and assembled module meet the requirements specified in paragraph 3, Requirements, of this Volume and Volume I of this specification.

4.3 Formal Test Constraints. The formal test constraints for the ARWA SS system are described in Volume I of this specification, paragraph 4.3. There are no additional formal test constraints unique to the Flight Station module.

4.4 Verification Cross Reference. Table 1, Flight Station Verification Cross Reference Matrix, provides a requirements/verification cross reference guide for the Flight Station module using the definitions provided in Volume I of this specification, paragraph 4.1.4.

Legend: NA-Not Applicable I-Inspection D-Demonstration A-Analysis T-Test						
Section 3 Requirements Reference	Qualification Method(s)					Section 4 Qualification Requirement Reference
	NA	I	A	D	T	
3.	NA					
3.1	NA					
3.1.1				D		4.2.1
3.1.2	NA					
3.1.3				D		4.2.1
3.1.4				D		4.2.1
3.1.4.1	NA					
3.1.4.1.1	NA					
3.1.4.1.2	NA					
3.1.4.1.2.1		I				4.2.1
3.1.4.1.2.2		I				4.2.1
3.1.4.1.2.3		I				4.2.1
3.1.4.1.2.4		I				4.2.1
3.1.4.1.2.5		I				4.2.1
3.1.4.1.2.6		I				4.2.1
3.1.4.1.2.7		I				4.2.1
3.1.4.1.3	NA					
3.1.4.1.3.1				D		4.2.1
3.1.4.1.3.2				D		4.2.1
3.1.4.1.3.3				D		4.2.1
3.1.4.1.3.4	NA					
3.1.4.1.3.4.1				D		4.2.1
3.1.4.1.3.4.2				D		4.2.1
3.1.4.1.3.4.3				D		4.2.1
3.1.4.1.3.5				D		4.2.1
3.1.4.1.3.6				D		4.2.1
3.1.4.1.3.7				D		4.2.1
3.1.4.2	NA					
3.1.4.2.1	NA					
3.1.4.2.2	NA					
3.1.4.2.3				D		4.2.1
3.1.4.2.4				D		4.2.1
3.1.4.3	NA					
3.1.4.3.1	NA					
3.1.4.3.2	NA					
3.1.4.3.3				D		4.2.1
3.1.4.3.4				D		4.2.1
3.1.4.4	NA					
3.1.4.4.1	NA					
3.1.4.4.2	NA					
3.1.4.4.3				D		4.2.1
3.1.4.4.4				D		4.2.1

Table 1. Flight Station Module Verification Cross Reference Matrix

Legend: NA-Not Applicable I-Inspection D-Demonstration A-Analysis T-Test						
Section 3 Requirements Reference	Qualification Method(s)					Section 4 Qualification Requirement Reference
	NA	I	A	D	T	
3.1.4.5	NA					
3.1.4.5.1	NA					
3.1.4.5.2		I				
3.1.4.5.3				D		4.2.1
3.1.4.5.4				D		4.2.1
3.1.5				D		4.2.1
3.1.6		I				4.2.1
3.1.6.1		I				4.2.1
3.1.6.2		I				4.2.1
3.1.6.3		I				4.2.1
3.1.6.4		I				4.2.1
3.1.6.5		I				4.2.1
3.1.6.6		I				4.2.1
3.1.7	NA					
3.1.7.1				D		4.2.1
3.1.7.2		I				4.2.1
3.1.8		I				4.2.1
3.2		I				4.2.1
3.3		I		D		4.2.1
3.4	NA					
3.4.1				D		4.2.1
3.4.2				D		4.2.1
3.4.3				D		4.2.1
3.4.4				D		4.2.1
3.4.5				D		4.2.1
3.5				D		4.2.1
3.6			A			4.2.1

Table 1. Flight Station Module Verification Cross Reference Matrix
[Continued]

5. PREPARATION FOR DELIVERY

The preparation for delivery requirements for the ARWA SS are specified in Volume I of this specification, paragraph 5. There are no additional or specific preparation for delivery requirements applicable to the Flight Station module.

6. NOTES

6.1 Flight Station Module Acronyms. The acronyms contained in this paragraph are unique to the Flight Station module and are in addition to the ARWA SS acronyms contained in Volume I of this specification, paragraph 6.1.

AC	Alternating Current
ARWA	Advanced Rotary Wing Aircraft Device
ARWA SS	Advanced Rotary Wing Aircraft Simulator System
CSCI	Computer Software Configuration Item
DC	Direct Current
DOD	Department of Defense
H/W	Hardware
HWCI	Hardware Configuration Item
I/O	Input/Output
T.O.s	Technical Orders

6.2 Glossary of Flight Station Module Terms. The terms contained in this paragraph are unique to the Flight Station module and are in addition to the ARWA SS terms contained in Volume I of this specification, paragraph 6.2.

NONE