

SECRET/NOFORN				
ID	Object Number	Object Text	Software RAM	Hardware RAM
FCR-3504	3.7.2.5.0-4	(U) The MAP shall have the capability to [REDACTED] b(3)	MAP	
FCR-1066	3.7.2.5.0-5	[REDACTED] b(1)	MAP	
FCR-1123	3.7.2.5.0-6	(U) The MAP software shall have the capability to [REDACTED] b(3)	MAP	
FCR-3208	3.7.2.5.0-7	(U) The MAP software shall perform position and orientation estimation and data alignment / registration incorporating data from a [REDACTED] b(3)	MAP	
FCR-858	3.7.2.5.0-8	[REDACTED] b(3)	MAP	
FCR-3505	3.7.2.5.0-9	(U) The MAP software shall have the capability [REDACTED] b(3)	MAP	
FCR-3506	3.7.2.5.0-10	(U) The MAP software shall [REDACTED] b(3)	MAP	
FCR-857	3.7.2.5.0-11	(U) The MAP software automatic [REDACTED] b(3) shall be dependent on the radar configuration as provided by the CPG.	MAP	
FCR-3292	3.7.2.5.0-12	(U) The MAP software shall [REDACTED] b(3)	MAP	

SECRET/NOFORN				
ID	Object Number	Object Text	Software RAM	Hardware RAM
FCR-3293	3.7.2.5.0-13	(U) The MAP software shall command b(3)	MAP	
FCR-3427	3.7.2.5.0-14	b(1)	MAP	
FCR-3500	3.7.2.5.0-15	(U) The MAP software shall respond b(3)	MAP	
FCR-3507	3.7.2.5.0-16	(U) The MAP software shall have the capability to support calibration/recalibration of the hardware.	MAP	
FCR-3467	3.7.2.6.0-1	b(3)	b(3) DDU	
FCR-3468	3.7.2.6.0-2	b(3)	b(3) DDU	
FCR-3469	3.7.2.6.0-3	b(3)	b(3) DDU	
FCR-3581	3.7.2.6.0-4	b(3)	b(3) DDU	
FCR-3582	3.7.2.6.0-5	b(3)	b(3) DDU	
FCR-3583	3.7.2.6.0-6	b(3)	b(3) DDU	

SECRET/NOFORN				
ID	Object Number	Object Text	Software RAM	Hardware RAM
FCR-3445	3.7.2.7.0-1	b(3)	SPS	
FCR-3446	3.7.2.7.0-2	b(3)	SPS	
FCR-3574	3.7.2.7.0-3	b(3)	SPS	
FCR-3470	3.7.2.7.0-4	b(3)	SPS	
FCR-3471	3.7.2.7.0-5	b(3)	SPS	
FCR-3472	3.7.2.7.0-6	b(3)	SPS	
FCR-3502	3.7.2.7.0-7	(U) The SPS software shall respond to a notification of a b(3) corresponding to the appropriate case. In the absence of such a condition, the SPS will use b(3)	SPS	
FCR-3509	3.7.2.7.0-8	b(1)  b(3)	SPS	

<b>SECRET/NOFORN</b>				
<b>ID</b>	<b>Object Number</b>	<b>Object Text</b>	<b>Software RAM</b>	<b>Hardware RAM</b>
FCR-3508	3.7.2.7.0-9	(U) The SPS software shall have the capability to process calibration data.	SPS	
<b>SECRET/NOFORN</b>				

6.4 (U) System Specification Traceability Matrix

TABLE XXII: (U) Higher Level Traceability Matrix

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-28	3.2.1.1.1.3.0-2	(U) The Fire Control System shall be operable as a stand-alone sensor system, where stand-alone means that there need not be a JLENS Surveillance System.	3.2.1.2.1.0-1	FCR-8
A-1714	3.2.1.3.1.1.1.0-1	(U) The Fire Control System, while in the Tactical Mode, shall perform detection against the ABT threat defined in 3.1.4.1 <i>Air Breathing Targets</i> when operating in the environments defined in 3.1.4.5 [REDACTED] b(3) and Appendix C.	3.2.1.1.1.1.0-1	FCR-13
A-1715	3.2.1.3.1.1.2.0-1	(U) The Fire Control System, while in the Tactical Mode, shall perform tracking of detected ABTs, which are defined in 3.1.4.1 <i>Air Breathing Targets</i> , when operating in the environments defined in 3.1.4.5 [REDACTED] b(3) and Appendix C.	3.2.1.1.1.3.0-1	FCR-15
A-1087	3.2.1.3.1.1.3.1.3.0-1	[REDACTED] b(1)	3.2.1.1.1.9.0-1	FCR-547
A-240	3.2.1.3.1.1.5.0-1	(U) While in the Tactical Mode, the Fire Control System shall accept target track data (which can be converted to a radar cue) which are from the JLENS Surveillance System.	3.2.1.1.1.7.0-1	FCR-17
A-241	3.2.1.3.1.1.5.0-2	(U) While in the Tactical Mode, the Fire Control System shall accept target track data (which can be converted to a radar cue) which are from external sensors.	3.2.1.1.1.7.0-2	FCR-18
A-1713	3.2.1.3.1.1.5.0-3	(U) While in the Tactical Mode [REDACTED] b(3)	3.2.1.1.1.7.0-3	FCR-19

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1716	3.2.1.3.1.2.2.1.0-1	b(3)	3.2.1.1.2.1.1.0-1	FCR-23
A-1131	3.2.1.3.1.2.2.3.0-2	b(1)	3.2.1.1.2.1.3.0-1	FCR-573
A-1717	3.2.1.3.1.2.3.1.0-1	b(3)	3.2.1.1.2.2.1.0-1	FCR-26
A-1139	3.2.1.3.1.2.3.3.0-2	b(1)	3.2.1.1.2.2.3.0-1	FCR-576
A-1063	3.2.1.3.1.3.0-1	b(3)	3.2.1.1.3.0-1	FCR-30
A-1637	3.2.1.3.2.1.0-1	(U) The Fire Control System shall perform sector surveillance as b(3)	3.2.1.2.1.0-1	FCR-8
A-268	3.2.1.3.2.3.1.0-1	b(3)	3.2.1.2.4.1.0-1	FCR-36

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-270	3.2.1.3.2.3.2.0-1	b(3)	3.2.1.2.4.2.0-1	FCR-38
A-272	3.2.1.3.2.3.3.0-1	b(3)	3.2.1.2.4.3.0-1	FCR-40
A-205	3.2.1.3.2.5.0-1	b(3)	3.2.1.2.5.0-1	FCR-90
A-72	3.2.1.3.2.6.1.0-1	b(1)	3.2.1.2.6.1.0-1	FCR-45
A-75	3.2.1.3.2.6.2.0-1	(U) The Fire Control System shall include an on-board IFF interrogator that supports modes 1, 2, 3/A, C, 4, 5 (level 1 and level 2), and is compatible with DoD IFF systems.	3.2.1.2.6.2.0-1	FCR-47
A-113329	3.2.1.3.2.6.3.0-1	(U) The Fire Control System shall include an on-board IFF transponder that supports modes 1, 2, 3/A, C, 4, 5 (level 1 and level 2) and S, and is compatible with DoD IFF systems.	3.2.1.2.6.2.0-1	FCR-47
A-79	3.2.1.3.2.7.1.0-1	(U) The Fire Control System shall incorporate a GPS-aided inertial navigation system for automatic positioning, orientation determination and data alignment / registration.	3.2.1.2.7.1.0-1	FCR-50
A-83	3.2.1.3.2.7.2.1.0-1	(U) The GPS receivers which are part of the Fire Control System shall be b(3)	3.2.1.2.7.2.1.0-1	FCR-53
A-89	3.2.1.3.2.7.2.3.0-1	(U) The Fire Control System shall perform system initialization and synchronization b(3)	3.2.1.2.7.2.3.0-1	FCR-57

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1061	3.2.1.3.2.8.0-1	b(3)	3.2.1.2.8.0-1	FCR-59
A-201	3.2.1.3.3.1.0-1	(U) The Fire Control System, upon power application, shall automatically initialize to a point where it can accept configuration commands.	3.2.1.3.1.0-1	FCR-62
A-199	3.2.1.3.3.5.0-1	(U) The Fire Control System, while in the Tactical Mode, shall provide operator selectable, 360° in azimuth, b(3)	3.2.1.2.1.1.0-1	FCR-64
A-275	3.2.1.3.3.8.1.1.0-1	b(1)	3.2.1.2.2.1.0-1	FCR-67
A-6380	3.2.1.3.3.8.1.1.0-2	b(1)	3.2.1.2.2.1.0-2	FCR-68

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-286	3.2.1.3.3.8.3.1.0-1	<p style="text-align: center;"><b>b(1)</b></p> <p>(U) By definition, a "surface" target is a target which is located on the surface of the Earth.                      (U) In this context, "airborne" means non-surface.</p>	3.2.1.2.2.3.0-2	FCR-75
A-6898	3.2.1.3.3.8.3.2.0-1	<p style="text-align: center;"><b>b(1)</b></p> <p>(U) By definition, a "surface" target is a target which is located on the surface of the Earth.</p>	3.2.1.2.2.3.0-3	FCR-3302
A-995	3.2.1.3.3.9.0-1	(U) The Fire Control System shall be designed to be certifiable by the U.S. Military Communications-Electronics Board (USMCEB) to operate in frequency bands in accordance with The Manual of Regulations and Procedures for Federal Radio Frequency Management, chapter titled Allocations, Allotments and Plans, dated May 2003, revised January 2006. GFE and COTS are, by definition, already USMCEB certifiable. This includes all GFE radios, all IFF sub-systems, all GPS sub-systems, and all weather radars which are part of the Fire Control System.	3.2.1.4.5.0-1	FCR-453
A-392	3.2.1.3.3.11.0-1	(U) The Fire Control System shall incorporate an emission control (EMCON) capability which reduces all radiated energy in compliance with MIL-STD-464A, Section titled <i>Emission control (EMCON)</i> , see Appendix H, <b>b(3)</b>	3.2.1.3.2.0-1	FCR-77
A-10313	3.2.1.3.3.11.0-2	<b>b(3)</b>	3.2.1.3.2.0-2	FCR-3692

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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-670	3.2.1.3.3.14.0-1	(U) The Fire Control System, with the exception of the signal processor, shall be designed such that there is an inherent 50% reserve computer memory and computer throughput for data processing.	3.2.1.3.3.0-1	FCR-79
A-686	3.2.1.3.3.15.6.0-1	(U) The Fire Control System shall be designed such that all classified data storage media including floppy disks, hard disks, compact disks, and tapes are easily removed from the computer with the use of standard tools or standard equipment.	3.2.1.3.4.2.0-1	FCR-84
A-689	3.2.1.3.3.15.7.0-1	(U) The Fire Control System shall provide non-volatile data storage devices with removable media.	3.2.1.3.4.3.0-1	FCR-86
A-1842	3.2.1.3.5.1.3.0-1	b(3)	3.2.1.2.5.0-1	FCR-90
A-202	3.2.1.3.5.4.0-1	b(3)	3.2.1.2.5.0-1	FCR-90
A-692	3.2.1.3.5.5.0-1	(U) The Fire Control System shall have manual controls for selecting data recording details in addition to the automatic level, see 3.2.1.3.3.13 <i>Data Recording</i> .	3.2.1.5.0-1	FCR-94
A-111714	3.2.2.1.0-2	(U) The Fire Control System shall have external interfaces in accordance with the JLENS System External IRS.	3.2.2.1.0-2	FCR-4132
A-111709	3.2.2.2.0-2	(U) The Fire Control System shall have internal interfaces in accordance with the JLENS System Internal IRS.	3.2.2.1.0-1	FCR-4090
A-1657	3.2.3.1.0-1	(U) All exterior metal surfaces of ground based equipment and the exterior surfaces of airborne enclosures external to the windscreen and aerostat excluding the SEMS and non-GFE Communications Payload airborne enclosures and support equipment shall be painted with Chemical Agent Resistant Coating (CARC), in accordance with H372287, with exterior topcoat 383 Green (color 34094 of Fed-Std-595).	3.2.3.1.0-1	FCR-154
A-112573	3.2.3.1.0-2	(U) All exterior surfaces of non-GFE Communications Payload airborne enclosures external to both the windscreen and the aerostat; the surfaces of the Hull Measurement System which are exterior to the aerostat; and all Platform airborne frames and racks shall be painted with Chemical Agent Resistant Coating (CARC), in accordance with H372287, with exterior topcoat white (color 37875 of Fed-Std-595).	3.2.3.1.0-2	FCR-4133

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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-112572	3.2.3.1.0-3	(U) All exterior surfaces of radar airborne equipment internal to the windscreen which are visible when the windscreen is unfurled shall be painted with exterior topcoat 383 Green (color 34094 of Fed-Std-595, this is non-CARC paint), except where paint interferes with function such as when electrical conductivity is needed.	3.2.3.1.0-3	FCR-4088
A-1661	3.2.3.2.0-1	(U) JLENS enclosures which are mounted on the aerostat, exterior to the windscreen, and have the purpose to protect the equipment interior from NBC shall protect internal equipment from contamination, see 6.2, caused by an NBC event as described in 3.2.5.2.9.1 <i>Nuclear, Biological, and Chemical, Definitions.</i>	3.2.3.2.0-1	FCR-156
A-599	3.2.3.3.0-1	b(3)	3.2.3.3.0-1	FCR-158
A-347	3.2.4.2.1.0-2	(U) While in an operational mode, the Fire Control System shall continually monitor the system's operational status. Operational status for the system is collected in the Communication and Processing Group Prime Item.	3.2.4.2.1.1.0-1	FCR-167
A-350	3.2.4.2.2.0-2	(U) The Fire Control System shall store the detected faults either in non-volatile memory or on removable data storage media.	3.2.4.2.1.2.0-1	FCR-169
A-353	3.2.4.2.3.0-3	(U) The Fire Control System shall detect all system critical failures, see 6.2, using a combination of b(3)	3.2.4.2.1.3.0-1	FCR-171
A-1840	3.2.4.2.3.0-4	b(3)	3.2.4.2.1.3.0-2	FCR-172

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-356	3.2.4.2.4.0-2	(U) While in the appropriate operational mode, the operational performance of the Fire Control System shall meet the performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> b(3)	3.2.4.2.1.4.0-1	FCR-174
A-359	3.2.4.2.5.0-3	b(3)	3.2.4.2.1.5.0-1	FCR-176
A-6390	3.2.4.2.5.0-4	b(3)	3.2.4.2.1.5.0-2	FCR-177
A-361	3.2.4.2.6.0-1	(U) Where standard b(3) cannot be used, the contractor shall obtain government approval prior to Prime Item CDR.	3.2.4.2.1.6.0-1	FCR-179
A-368	3.2.4.2.7.0-2	b(3)	3.2.4.2.1.7.0-1	FCR-181
A-371	3.2.4.2.8.0-2	b(3)	3.2.4.2.1.8.0-1	FCR-183
A-399	3.2.4.4.1.0-2	(U) The Fire Control System shall perform system configuration checks during system initialization.	3.2.4.3.1.0-1	FCR-186
A-402	3.2.4.4.2.0-2	(U) The Fire Control System Prime Items shall pass all configuration checks prior to transitioning to an operational mode.	3.2.4.3.2.0-1	FCR-188
A-405	3.2.4.4.3.0-2	(U) The Fire Control System Prime Items shall have manual override of the automatic configuration checks.	3.2.4.3.3.0-1	FCR-190
A-411	3.2.4.4.5.0-2	(U) The Fire Control System shall include a configuration log which includes the results of the configuration checks.	3.2.4.3.4.0-1	FCR-192
A-424	3.2.5.1.3.1.0-2	(U) The Fire Control System in an appropriate operational mode shall meet the performance specified in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> during exposure to an ambient temperature range from -40°C to +49°C (Mean Sea Level). Temperature as a function of altitude is provided in Appendix F.	3.2.5.1.1.1.0-1	FCR-197

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-427	3.2.5.1.3.2.0-2	(U) The Fire Control System in the appropriate operational mode shall meet the performance specified in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> after exposure to an ambient temperature range from -46°C to +71°C while in the storage and movement configurations, with the allowance of environmental kits and procedures for temperature extremes.	3.2.5.1.1.2.0-1	FCR-199
A-431	3.2.5.1.4.1.0-2	(U) The Fire Control System, in an appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> during exposure to a relative humidity range from 3 to 100% non-condensing.	3.2.5.1.2.1.0-1	FCR-201
A-7059	3.2.5.1.4.2.0-2	(U) The Fire Control System, in an appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> after exposure, while in the deployment, storage and movement configurations, to a relative humidity range from 3 to 100% non-condensing.	3.2.5.1.2.2.0-1	FCR-3539
A-437	3.2.5.1.5.1.1.0-2	b(3)	3.2.5.1.3.1.0-1	FCR-205
A-441	3.2.5.1.5.1.2.0-2	b(3)	3.2.3.3.0-1	FCR-158
A-445	3.2.5.1.5.2.1.0-2	b(3)	3.2.5.1.3.2.0-1	FCR-210
A-448	3.2.5.1.5.2.2.0-2	(U) The Fire Control System in the storage and movement configurations shall be protected during <span style="background-color: black; color: black;">b(3)</span>	3.2.3.3.0-1	FCR-158

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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-452	3.2.5.1.6.1.0-2	(U) The Fire Control System shall survive during exposure to hail up to one-half inch in diameter while in the appropriate operational mode.	3.2.5.1.4.0-1	FCR-215
A-455	3.2.5.1.6.2.0-2	(U) While in the storage and movement configurations, the Fire Control System shall be protected during exposure to hail up to one-half inch in diameter.	3.2.3.3.0-1	FCR-158
A-459	3.2.5.1.7.1.0-3	(U) The Fire Control System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> except sensor performance, which can degrade, during exposure up to 10.2 cm (4 inches) of snow accumulation on ground equipment surfaces where the snow has a density of 0.3 gram per cubic centimeter.	3.2.5.1.5.0-1	FCR-220
A-7045	3.2.5.1.7.1.0-4	(U) The Fire Control System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> except sensor performance, which can degrade, during a snow falling rate of up to 2.54 cm/hour (1 inch/hour). Note: The falling snow does not accumulate on the aerostat.	3.2.5.1.5.0-2	FCR-3484
A-462	3.2.5.1.7.2.0-2	(U) While in the storage and movement configurations, the Fire Control System shall be protected during exposure to snow accumulation, with a density of 0.3 gram per cubic centimeter, of up to 15.2 cm (6 inches) in 12 hours.	3.2.3.3.0-1	FCR-158
A-467	3.2.5.1.8.1.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet performance specifications in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> when exposed to a salt atmosphere in sea locations and coastal regions.	3.2.5.1.6.0-1	FCR-224
A-468	3.2.5.1.8.2.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet performance specifications in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> after exposure to a salt atmosphere in sea locations and coastal regions while in a non-operational mode.	3.2.5.1.6.0-2	FCR-225

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-469	3.2.5.1.8.3.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet performance specifications in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> after exposed to a salt atmosphere during ocean transportation while in the transport configuration.	3.2.3.3.0-1	FCR-158
A-473	3.2.5.1.9.1.0-4	(U) The Fire Control System, in the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when exposed to blowing dust of up to 149 $\mu\text{m}$ diameter in concentrations of up to $10 \pm 7 \text{ g/m}^3$ ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).	3.2.5.1.7.0-1	FCR-229
A-7040	3.2.5.1.9.1.0-5	(U) The Fire Control System, in the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when surface equipment is exposed to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $1.1 \pm 0.3 \text{ g/m}^3$ ( $0.033 \pm 0.0075 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).	3.2.5.1.7.0-2	FCR-3485
A-7041	3.2.5.1.9.1.0-6	(U) The Fire Control System, in the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when airborne equipment is exposed to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $0.18 -0.0/+0.2 \text{ g/m}^3$ ( $0.005 -0.0/+0.0057 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr). Note: for the Tactical Mode, blowing sand does not reach operational altitude.	3.2.5.1.7.0-3	FCR-3486
A-476	3.2.5.1.9.2.0-3	(U) The Fire Control System, after assembly into the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> following exposure, while in the storage and movement configurations, to blowing dust of up to 149 $\mu\text{m}$ diameter in concentrations of up to $10 \pm 7 \text{ g/m}^3$ ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).	3.2.3.3.0-1	FCR-158

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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-7043	3.2.5.1.9.2.0-4	(U) The Fire Control System, after assembly into the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> following exposure, while in the storage and movement configurations, to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $2.2 \pm 0.5 \text{ g/m}^3$ ( $0.06 \pm 0.015 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).	3.2.3.3.0-1	FCR-158
A-479	3.2.5.1.10.0-2	(U) The Fire Control System shall be either composed of materials that inhibit the fungus growth or composed of materials which are protected from environments that would encourage fungus growth.	3.2.5.1.8.0-1	FCR-233
A-483	3.2.5.1.11.1.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> while being subjected to steady state winds up to 73 km/hr (40 knots) with turbulence of 1.98 m/s (6.5 fps) rms.	3.2.5.1.9.1.0-1	FCR-236
A-487	3.2.5.1.11.2.1.0-2	(U) The Fire Control System while moored or at altitude, while either operational or non-operational, shall survive, see 6.2, an exposure to steady state winds of up to 148 km/hr (80 knots) with turbulence of 3.05 m/s (10 fps) rms.	3.2.5.1.9.2.1.0-1	FCR-239
A-490	3.2.5.1.11.2.2.0-2	(U) The Fire Control System, in the storage, movement, and operations configurations, shall survive an exposure to steady state winds of up to 185 km/hr (100 knots).	3.2.5.1.9.2.2.0-1	FCR-241
A-496	3.2.5.1.12.1.0-2	(U) The Fire Control System ground equipment, in the operations configuration, movement configuration, or storage configuration, shall be protected from direct and indirect lightning, including LEMP, in accordance with the lightning requirements of MIL-STD-464. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.	3.2.5.1.10.1.0-1	FCR-244
A-499	3.2.5.1.12.2.0-2	(U) The Fire Control System airborne equipment, when in the operations configuration, shall survive direct or indirect lightning strikes to the aerostat lightning cage, which produces a maximum induced current of 145 kA including LEMP. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.	3.2.5.1.10.2.0-1	FCR-246



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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-502	3.2.5.1.12.3.0-2	(U) The Fire Control System shall return to the state, mode and stored configuration existing prior to a near lightning strike, see 6.2, after a controlled restart, not requiring repair. By definition, a nearby lightning strike does not cause equipment damage. A controlled restart is according to procedures.	3.2.5.1.10.3.0-1	FCR-248
A-510	3.2.5.2.1.1.0-2	(U) The Fire Control System, while in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> while being subjected to vibration levels caused by operation.	3.2.5.2.1.1.0-1	FCR-252
A-513	3.2.5.2.1.2.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> following exposure to vibration levels caused by normal transportation, maintenance, or storage. Transportation includes, air, ground (both road and <b>b(3)</b> ), and sea.	3.2.5.2.1.2.0-1	FCR-254
A-517	3.2.5.2.2.1.0-2	(U) The Fire Control System, while in an operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> applicable to that operational mode, while being subjected to shock levels caused during normal operation of that mode.	3.2.5.2.2.1.0-1	FCR-257

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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID																		
A-521	3.2.5.2.2.2.0-1	<p>(U) The JLENS LRUs shall meet performance requirements in 3.2.1 Performance Characteristics and 3.2.4 System Quality Factors after the LRUs are dropped, with the drop height dependent on the LRU packaged weight as:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Package Gross Weight, kg (lb)</th> <th>Design Drop Height, cm (in)</th> </tr> </thead> <tbody> <tr> <td>0 to 9.1 (0 to 20)</td> <td>76 (30)</td> </tr> <tr> <td>9.2 to 18.2 (21 to 40)</td> <td>66 (26)</td> </tr> <tr> <td>18.3 to 27.2 (41 to 60)</td> <td>61 (24)</td> </tr> <tr> <td>27.4 to 36.3 (61 to 80)</td> <td>46 (18)</td> </tr> <tr> <td>36.4 to 45.4 (81 to 100)</td> <td>38 (15)</td> </tr> <tr> <td>45.5 to 68.1 (101 to 150)</td> <td>31 (12)</td> </tr> <tr> <td>68.2 to 113.5 (151 to 250)</td> <td>26 (10)</td> </tr> <tr> <td>113.6 or greater (251 or greater)</td> <td>20 (8)</td> </tr> </tbody> </table> <p style="text-align: right;">UNCLASSIFIED</p> <p>while packaged in their transit containers according to the applicable technical documentation.</p>	Package Gross Weight, kg (lb)	Design Drop Height, cm (in)	0 to 9.1 (0 to 20)	76 (30)	9.2 to 18.2 (21 to 40)	66 (26)	18.3 to 27.2 (41 to 60)	61 (24)	27.4 to 36.3 (61 to 80)	46 (18)	36.4 to 45.4 (81 to 100)	38 (15)	45.5 to 68.1 (101 to 150)	31 (12)	68.2 to 113.5 (151 to 250)	26 (10)	113.6 or greater (251 or greater)	20 (8)	3.2.5.2.2.2.0-1	FCR-259
Package Gross Weight, kg (lb)	Design Drop Height, cm (in)																					
0 to 9.1 (0 to 20)	76 (30)																					
9.2 to 18.2 (21 to 40)	66 (26)																					
18.3 to 27.2 (41 to 60)	61 (24)																					
27.4 to 36.3 (61 to 80)	46 (18)																					
36.4 to 45.4 (81 to 100)	38 (15)																					
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68.2 to 113.5 (151 to 250)	26 (10)																					
113.6 or greater (251 or greater)	20 (8)																					
A-111711	3.2.5.2.3.1.0-1	<p>(U) After assembly to an operational configuration and while in the appropriate operational mode, the JLENS Orbit components, which are packaged for the Movement State in ISO containers or ISO shelters, shall meet performance requirements in 3.2.1 Performance Characteristics and 3.2.4 System Quality Factors after exposure to a [REDACTED] b(3) [REDACTED] while the JLENS equipment is mounted in the designated ISO shelters or ISO containers for that equipment and while the JLENS equipment is in the transport configuration.</p>	3.2.5.2.3.1.0-1	FCR-4134																		

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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-113361	3.2.5.2.3.2.0-1	(U) After assembly to an operational configuration and while in the appropriate operational mode, the JLENS Orbit non-fragile components, see 6.2, except the MMS, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to a [REDACTED] <b>b(3)</b> while the JLENS equipment is mounted in the designated ISO shelters or ISO containers for that equipment and while the JLENS equipment is in the transport configuration.	3.2.5.2.2.3.2.0-1	FCR-4135
A-523	3.2.5.2.3.3.0-1	(U) After assembly to an operational configuration and while in the appropriate operational mode, the JLENS Orbit fragile components, see 6.2, which are packaged for the Movement State in ISO containers or ISO shelters, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to a [REDACTED] <b>b(3)</b> while the JLENS equipment is mounted in the designated ISO shelters or ISO containers for that equipment and while the JLENS equipment is in the transport configuration.	3.2.5.2.2.3.3.0-1	FCR-261
A-113342	3.2.5.2.3.6.0-1	(U) Each JLENS unique transportation fixture onto which fragile hardware is mounted shall be marked with special handling procedures using MIL-STD-129P as guidance.	3.2.5.2.2.3.6.0-1	FCR-4136
A-527	3.2.5.2.4.1.0-2	(U) The electrically initiated devices (EID) or electro-explosive devices (EED) used in the Fire Control System shall be rendered safe using explosive ordnance disposal (EOD) tools, methods, and technology.	3.2.5.2.3.0-1	FCR-3200
A-530	3.2.5.2.4.2.0-2	(U) The Fire Control System EIDs and EEDs shall be protected from inadvertent ignition during, or experience degraded performance characteristics after, exposure to externally radiated electromagnetic environments (EME) using MIL-STD-464A as guidance.	3.2.5.2.3.0-1	FCR-3200
A-535	3.2.5.2.5.1.1.0-4	(U) The Fire Control System shall control unintentional emissions, see 6.2, using MIL-STD-461E, RE102-4 Army curve as a guide.	3.2.5.2.4.1.1.0-1	FCR-269
A-10327	3.2.5.2.5.1.1.0-5	(U) The Fire Control System shall control conducted emissions on commercial power lines in accordance with MIL-STD-461E, CE102. The fit to the CE102 limit relaxation is $10 \cdot \log(V) - 14.47$ in dB.		

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-10331	3.2.5.2.5.1.1.0-6	(U) The Fire Control System, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of intra-system radiated and conducted emissions.	3.2.5.2.4.1.1.0-2	FCR-3693
A-7049	3.2.5.2.5.1.2.0-2	(U) The Fire Control System ground equipment, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of electromagnetic interference using MIL-STD-461E, <b>b(3)</b> . The "tuned frequency" referred to MIL-STD-461E, <b>b(3)</b> is defined as the in-band frequency in 6.2.	3.2.3.3.0-1	FCR-158
A-10329	3.2.5.2.5.1.2.1.0-3	(U) The Fire Control System airborne equipment excluding the IFF subsystem and the GPS, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious in-band electromagnetic interference using MIL-STD-461E, <b>b(3)</b> as a guide. GFE must be MIL-STD-461E compliant.	3.2.5.2.4.1.2.1.0-1	FCR-3704
A-10338	3.2.5.2.5.1.2.1.0-4	(U) The IFF subsystem which is part of the Fire Control Radar airborne equipment, in the appropriate operational mode, does not meet performance requirements in 3.2.1.3.2.6 <i>Identification Friend or Foe (IFF)</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious in-band electromagnetic interference.		
A-10332	3.2.5.2.5.1.2.2.0-3	(U) The Fire Control System airborne equipment excluding the FCR but including the GPS, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious non-in-band electromagnetic interference, <b>b(3)</b> .	3.2.5.2.4.1.2.2.0-1	FCR-3705

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-536	3.2.5.2.5.1.2.2.0-4	(U) The Fire Control Radar airborne equipment, excluding the IFF subsystem, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious non-in-band (out of band) electromagnetic interference in accordance with Table VIII. GFE must be MIL-STD-461E compliant. See 6.2 for the definition of in-band frequencies for each antenna-connected airborne equipment.	3.2.5.2.4.1.2.2.0-2	FCR-270
A-10334	3.2.5.2.5.1.2.2.0-5	(U) The IFF subsystem which is part of the Fire Control Radar airborne equipment, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3.2.6 <i>Identification Friend or Foe (IFF)</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious non-in-band [REDACTED]	3.2.5.2.4.1.2.2.0-3	FCR-3706
A-10337	3.2.5.2.5.1.3.0-2	(U) The Fire Control Radar airborne GPS equipment shall be designed in accordance with MIL-STD-461E, [REDACTED] <b>b(3)</b>	3.2.5.2.4.1.3-1	FCR-3707
A-539	3.2.5.2.5.2.0-2	(U) Grounding and bonding on the Fire Control System shall be implemented in accordance with the electrical bonding and external grounds requirements of MIL-STD-464A.	3.2.5.2.4.2.0-1	FCR-272

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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-542	3.2.5.2.6.1.0-2	b(1)	3.2.5.2.5.0-1	FCR-274
A-6892	3.2.5.2.6.2.0-2	b(1)	3.2.3.3.0-1	FCR-158

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A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-547	3.2.5.2.7.0-2	(U) The Fire Control System LRUs or equipment cabinets as appropriate, except for GFE, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> following exposure to an [REDACTED] b(3) [REDACTED] (U) Note: ESD discharges directly to connector pins are not included. This only includes ESD discharges to LRU or equipment cabinet external surfaces, as appropriate.	3.2.5.2.6.0-1	FCR-276
A-549	3.2.5.2.8.0-1	[REDACTED] b(1)	3.2.5.2.7.0-1	FCR-278
A-1574	3.2.5.2.9.2.1.1.0-2	(U) The Fire Control System shall be able to withstand contamination/decontamination as described herein while in the movement configuration. Items packaged in NBC protective ISO containers are protected by the containers.	3.2.3.3.0-1	FCR-158
A-553	3.2.5.2.9.2.2.1.0-2	[REDACTED] b(3)	3.2.5.2.8.2.2.1.0-1	FCR-286
A-556	3.2.5.2.9.2.2.2.0-2	[REDACTED] b(3)	3.2.5.2.8.2.2.2.0-1	FCR-288
A-559	3.2.5.2.9.2.2.3.0-2	(U) The Fire Control System, after subjection to worst case chemical and biological contamination, as specified herein, shall be restorable to an operational condition such that use of MOPP IV need not be continued, after being decontaminated using JLENS specific decontamination procedures.	3.2.5.2.8.2.2.3.0-1	FCR-290

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-562	3.2.5.2.9.2.2.4.0-2	(U) The Fire Control System shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> during and following exposure to NBC contaminants while in the Tactical Mode of the Operations State and in the operations configuration.	3.2.5.2.8.2.2.4.0-1	FCR-292
A-1667	3.2.5.2.9.2.2.5.0-2	(U) The Fire Control System design shall be such that trained and acclimatized personnel can operate and maintain external mission critical equipment while wearing a full NBC protective ensemble MOPP IV gear without further contaminating the system.	3.2.5.2.8.2.2.5.0-1	FCR-294
A-571	3.2.6.1.1.0-1	b(3)	3.2.6.1.1.0-1	FCR-298
A-573	3.2.6.1.1.1.0-1	b(3)	3.2.3.3.0-1	FCR-158
A-575	3.2.6.1.1.2.0-1	(U) The JLENS Orbit, in the appropriate operational mode, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to the Railroad Transportation vibrations NGT than 0.488 g rms longitudinal, 0.488 g rms vertical, and 0.488 g rms lateral, incurred while in the movement configuration.	3.2.6.1.1.1.0-1	FCR-302
A-519	3.2.6.1.1.3.0-1	(U) The JLENS Orbit, while in the appropriate operational mode, shall meet performance requirements specified in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after being subjected to rail impact static equivalent loads NGT 5.0 g longitudinal, 3.0 g vertical and 3.0 g lateral, incurred while in the transport configuration. Note: The accelerations provided here are applied to the center of mass of the ISO container. Accelerations on individual components will depend on packaging.	3.2.6.1.1.2.0-1	FCR-304



SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-578	3.2.6.1.2.1.0-1	(U) The JLENS Orbit, in the Transport Mode, shall be transportable on highways defined in MIL-STD-1366D including an allowance for special permits where the limits for load, vibration, and shock are presented in Appendix E.	3.2.6.1.2.1.0-1	FCR-307
A-580	3.2.6.1.2.2.0-1	(U) The JLENS Orbit, in the transport configuration, shall be transportable on secondary roads, see 6.2, where the limits for load, vibration, and shock are presented in Appendix E.	3.2.6.1.2.2.0-1	FCR-309
A-582	3.2.6.1.2.3.0-1	(U) The JLENS Orbit, in the transport configuration, shall be transportable on unimproved roads, see 6.2, where the limits for load, vibration, and shock are presented in Appendix E.	3.2.6.1.2.3.0-1	FCR-311
A-584	3.2.6.1.2.4.0-1	(U) The JLENS Orbit, in the transport configuration, shall be transportable off-road for <b>b(3)</b>	3.2.6.1.2.4.0-1	FCR-313
A-586	3.2.6.1.2.5.0-1	(U) The JLENS Orbit, in the appropriate operational mode, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to the Large Assembly Transport vibration where the vibration levels are NGT those represented by the Perryman Cross-Country Course No. 1 and the mobility profile for primary, secondary and unimproved roads given in Table IX, in the transport configuration.	3.2.6.1.2.5.0-1	FCR-3642
A-589	3.2.6.2.1.0-1	(U) The JLENS Orbit, in the transport configuration, shall be marine transportable in accordance with MIL-STD-1366D section titled <i>Water Transportation (Load on / Load off)</i> , where load limits and vibrations are presented in Appendix E.	3.2.6.2.1.0-1	FCR-316
A-591	3.2.6.2.2.0-1	(U) The JLENS Orbit, in the appropriate operational mode, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to the Ship Transportation vibrations NGT 0.315 g rms longitudinal, 0.315 g rms vertical, and 0.315 g rms lateral, incurred while in the transport configuration.	3.2.6.2.2.0-1	FCR-318

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-594	3.2.6.3.1.0-1	(U) The JLENS Orbit, in the transport configuration, shall be transportable on C-130 (except the mobile mooring station, associated peculiar support equipment, and ISOs or shelters which differ from 8' x 8' x 20'), C-5 and C-17 aircraft. The shock and vibrations experienced during C-130, C-5, and C-17 aircraft transport are presented in Appendix E.	3.2.6.3.1.0-1	FCR-321
A-596	3.2.6.3.2.0-1	(U) The JLENS Orbit, in the appropriate operational mode, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to the aircraft random vibrations NGT 5.17 g rms longitudinal, 5.17 g rms vertical, and 5.17 g rms lateral, incurred while in the transport configuration.	3.2.6.3.2.0-1	FCR-323
A-1575	3.2.6.4.2.0-2	(U) Transportation enclosures which are non-GFE and delivered as part of the Fire Control System shall be able to withstand contamination/decontamination described herein such that it protects the equipment contained within the enclosure.	3.2.6.4.0-1	FCR-3697
A-601	3.2.6.4.4.0-1	(U) The JLENS Orbit, in the transport configuration, shall meet the U.S. Department of Transportation (DOT), NATO, and European Union (EU) Performance-Oriented Packaging (POP) standards for unrestricted highway, rail, and sea transportation.	3.2.3.3.0-1	FCR-158
A-2127	3.3.1.2.0-2	(U) The Fire Control System shall be designed such that components containing hazardous materials listed in the EPA-17 and Class I Ozone Depleting Substances are only utilized in compliance with the JLENS Hazardous Materials Management Plan (HMMP). Note: Appendix A contains the aforementioned lists.	3.3.1.2.0-1 3.3.1.2.0-2	FCR-331 FCR-3593

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-726	3.3.2.1.0-1	<p>(U) The JLENS Orbit shall have all equipment marked in accordance with MIL-STD-130L for unique identification with the following provisos and exceptions.</p> <p>(U) Provisos to this requirement are:</p> <ul style="list-style-type: none"> <li>a. Only hardware and software items with a unit acquisition cost NLT \$5,000.</li> <li>b. All hardware items with a unit acquisition cost less than \$5,000 when they are serially managed, mission critical, or controlled inventory items.</li> </ul> <p>(U) Exceptions to this requirement are as specified in MIL-STD-130L section titled <i>Detailed Requirements</i> subsection titled <i>Exemptions</i>:</p> <ul style="list-style-type: none"> <li>a. "COTS items marked with commercial identification (firm name, logo, part number, etc.), and which present no identification difficulty may be exempt from additional marking requirements. This exemption extends to COTS items identified on a VICD."</li> <li>b. "Parts within an assembly or a sub-assembly, that are not subject to removal, replacement, or repair or"</li> <li>c. "When parts are deemed too small for the application of complete marking in accordance with MIL-STD-130L section titled <i>Machine-readable information (MRI) marking</i>, a logo or other abbreviated marking [will] be substituted for the design activity identification."</li> </ul>	3.3.2.1.0-1	FCR-334
A-2093	3.3.2.2.0-2	(U) The Fire Control System shall utilize safety warning labels compliant with ANSI Z535.	3.3.2.2.0-1	FCR-2344

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-10316	3.3.3.1.0-2	(U) The Fire Control System shall have no hazards, see 6.2, with Mishap Risk Categories rated "High" or "Serious", see Appendix A.3 (from MIL-STD-882D), associated with RF radiation.	3.3.3.2.2.0-1	FCR-359
			3.3.3.1.1.0-1	FCR-2296
			3.3.3.1.1.0-2	FCR-2301
			3.3.3.1.1.0-3	FCR-2302
			3.3.3.2.1.0-2	FCR-3187
			3.3.3.2.2.0-2	FCR-3190
			3.3.3.2.3.0-3	FCR-3284
A-10317	3.3.3.1.0-4	(U) The Fire Control System shall provide safety devices, see 6.2, to mitigate personnel falling hazards to a hazard Mishap Risk Category, see Appendix A.3, of "Medium" or "Low."	3.3.3.1.0-4	FCR-2305
			3.3.3.1.0-5	FCR-3596
A-10318	3.3.3.1.0-6	(U) The Fire Control System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, related to equipment motion.	3.3.3.2.2.0-1	FCR-359
			3.3.3.1.2.0-2	FCR-2307
			3.3.3.1.2.0-10	FCR-2310
			3.3.3.1.2.0-9	FCR-3599
A-10319	3.3.3.1.0-8	(U) The Fire Control System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, related to fire.	3.3.3.1.2.0-8	FCR-2312
A-1828	3.3.3.1.0-10	(U) The Fire Control System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, resulting in equipment damage due to overheating.	3.3.3.2.2.0-1	FCR-359
			3.3.3.1.2.0-4	FCR-2315
			3.3.3.1.2.0-7	FCR-2316
A-1827	3.3.3.1.0-12	(U) The Fire Control System shall have no single point failures which result in a hazard with a Mishap Risk Category of "High" or "Serious".	3.3.3.1.0-3	FCR-3597
			3.3.3.1.0-2	FCR-3598

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1838	3.3.3.1.0-14	(U) The Fire Control System shall have no hazards with Mishap Risk Categories of "High" or "Serious" associated with voltage and/or current.	3.3.3.2.2.0-1	FCR-359
			3.3.3.1.3.0-9	FCR-2319
			3.3.3.1.2.0-6	FCR-2321
			3.3.3.1.3.0-8	FCR-2324
			3.3.3.1.3.0-3	FCR-2325
			3.3.3.1.3.0-5	FCR-2326
			3.3.3.1.3.0-6	FCR-2328
			3.3.3.1.2.0-5	FCR-3600
			3.3.3.1.3.0-7	FCR-3601
			3.3.3.1.3.0-4	FCR-3602
			3.3.3.1.3.0-2	FCR-3603
A-1829	3.3.3.2.0-2	(U) The Fire Control System shall comply with the applicable portions of MIL-HDBK-454A Guidelines on <i>Personnel Hazards, Flammability, and Electrical Overload Protection</i> .	3.3.3.0-2	FCR-2331
			3.3.3.1.3.0-11	FCR-2332
			3.3.3.1.3.0-10	FCR-2333
			3.3.3.1.2.0-3	FCR-2334
			3.3.3.0-4	FCR-2335
			3.3.3.0-5	FCR-2336
			3.3.3.1.3.0-1	FCR-3604
			3.3.3.1.0-6	FCR-3605
A-1832	3.3.3.3.0-2	(U) The Fire Control System shall provide local emergency power shutdown capability at manned shelters and locations.	3.3.3.0-1	FCR-3421
A-2089	3.3.3.5.0-2	(U) The Fire Control System shall have barriers to prevent accidental contact of personnel to surface temperatures outside the limits specified in MIL-STD-1472F section titled <i>Thermal Contact Hazards</i> .	3.3.3.1.2.0-1	FCR-2341

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-2090	3.3.3.6.0-2	(U) The Fire Control System, in all configurations, shall have acoustic noise levels and durations that comply with MIL-STD-1474D requirement titled <i>Steady-State Noise, Personnel Occupied Areas</i> and MIL-STD-1472F section titled <i>Acoustical Noise</i> . Hearing protection may be required for some activities.	3.3.3.0-3	FCR-3444
A-2133	3.3.3.7.0-2	(U) The Fire Control System shall initialize (power-up) into a safe state.	3.3.3.2.1.0-1	FCR-357
A-2151	3.3.3.8.0-2	(U) The Fire Control System shall allow the system to perform a function which inherently increases Mishap Probability only if one of the following conditions are satisfied: a. All relevant pre-requisite safety checks are passed prior to performing the potentially hazardous function. b. The safety checks have been explicitly over-ridden.	3.3.3.2.2.0-1	FCR-359
A-2136	3.3.3.9.0-2	(U) The Fire Control System shall have hardware safety interlocks which cannot be overridden by software.	3.3.3.1.0-1	FCR-361
A-2145	3.3.3.10.0-2	(U) The Fire Control System software shall deliver safety critical alerts to the operator.	3.3.3.2.3.0-1	FCR-363
A-2148	3.3.3.11.0-2	(U) The Fire Control System software shall display a hazardous condition alert.	3.3.3.2.3.0-2	FCR-3615
A-2159	3.3.3.12.0-2	(U) The Fire Control System shall provide for a safe shutdown, whether operator initiated or automatic.	3.3.3.2.4.0-1	FCR-367
A-620	3.3.4.0-1	(U) The JLENS Orbit workspaces, user interface displays, and controls shall be designed using the guidance of MIL-STD-1472F, sections titled <i>Control/Display Integration, Visual Displays, Audio Displays, Controls, Labeling and User-Computer Interface</i> .	3.3.4.0-1 3.3.4.0-2 3.3.4.0-3 3.3.4.0-4	FCR-2264 FCR-2266 FCR-3590 FCR-3591

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-624	3.3.4.1.0-1	(U) The JLENS Orbit shall be operable, maintainable and supportable by 5th to 95th percentile of Army personnel while wearing Combat Gear and protective clothing (cold weather Mission Oriented Protective Posture (MOPP) IV) in accordance with MIL-STD-1472F, sections titled <i>Physical Accommodation, Workspace Design, and Design for Maintainer.</i>	3.3.4.1.0-1 3.3.4.1.0-2 3.3.4.1.0-3 3.3.4.1.0-4 3.3.4.1.0-5 3.3.4.1.0-6 3.3.4.1.0-9 3.3.4.1.0-8	FCR-2268 FCR-2269 FCR-2270 FCR-2271 FCR-2272 FCR-2273 FCR-3713 FCR-3714
A-635	3.3.5.1.1.0-2	(U) The Fire Control System shall use approved IA products or IA-enabled products for all information system security functions. <b>b(3)</b>	3.3.5.1.1.0-1	FCR-375
A-1674	3.3.5.1.1.0-4	<b>b(3)</b>	3.3.5.1.1.0-2	FCR-4069
A-1695	3.3.5.1.1.0-6	<b>b(3)</b>	3.3.5.1.1.0-3	FCR-4068
A-1676	3.3.5.1.1.0-8	<b>b(3)</b>	3.3.5.1.1.0-4	FCR-377
A-1679	3.3.5.1.1.0-10	<b>b(3)</b>	3.3.5.1.1.0-5	FCR-379
A-1682	3.3.5.1.1.0-12	(U) The Fire Control System shall only use binary or machine executable public domain software products or other software products, such as those commonly known as freeware or shareware, that have been assessed for information assurance impacts or which have been approved by the DAA.	3.3.5.1.1.0-6	FCR-381

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-111698	3.3.5.1.1.0-14	(U) The security support structure of the Fire Control System shall be isolated. Means of isolation may include the use of partitions and/or domains that control access to and integrity of hardware, software, and firmware that perform security functions.	3.3.5.1.1.0-7	FCR-4070
A-111700	3.3.5.1.2.0-6	b(3)	3.3.5.1.2.0-1	FCR-4071
A-638	3.3.5.1.2.0-8	b(3)	3.3.5.1.2.0-2	FCR-385
A-1703	3.3.5.1.2.0-12	b(3)	3.3.5.1.2.0-3	FCR-398
A-644	3.3.5.1.2.0-14	(U) The Fire Control System shall implement virus protection for all servers, workstations, and mobile computing devices.	3.3.5.1.2.0-4	FCR-390
A-658	3.3.5.2.0-1	b(3)	3.3.5.2.0-1	FCR-402
A-663	3.3.5.3.0-2	b(3)	3.3.5.3.0-1	FCR-404
A-710	3.5.2.2.2.0-2	b(3)	3.5.2.1.1.0-1	FCR-409
A-713	3.5.2.2.3.0-2	b(3)	3.5.2.2.0-1	FCR-411
A-715	3.5.3.0-1	(U) The JLENS Orbit shall be designed to use standard military vehicles, shelters and trailers unless the government approves justification for non-military equipment.	3.2.3.3.0-1	FCR-158
A-716	3.5.3.0-2	(U) The JLENS Orbit shall be designed such that standard military vehicles can be used for ground transportation.	3.2.3.3.0-1	FCR-158



SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-718	3.5.4.0-1	(U) The JLENS Orbit shall be designed to use military lifting and handling equipment, unless the government approves justification for non-military equipment.	3.5.4.0-1	FCR-416
A-719	3.5.4.0-2	(U) The JLENS Orbit shall be designed such that standard military vehicles can be used for handling.	3.5.4.0-2	FCR-417
A-732	3.5.6.1.0-2	b(3)	3.5.5.1.0-1	FCR-420
A-735	3.5.6.2.0-2	b(3)	3.5.5.2.0-1	FCR-422
A-978	3.7.3.1.1.1.0-1	b(3)	3.2.4.1.1.1.0-1	FCR-428
A-980	3.7.3.1.1.2.0-1	b(3)	3.2.4.1.1.2.0-1	FCR-430
A-982	3.7.3.1.2.0-1	b(3)	3.2.4.1.2.0-1	FCR-432
A-984	3.7.3.1.3.0-1	b(3)	3.2.4.2.2.0-1 3.2.4.2.2.0-2	FCR-434 FCR-3712

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-986	3.7.3.1.4.0-1	(U) The Fire Control Radar payload shall have a total distributed weight of NGT 5,900 lbs where the weight distribution determination includes aerostat stability requirements. Note this weight includes the weight of the racks which are used to mount the FCR to the Platform.		
A-2254	3.7.3.1.5.0-1	(U) The Fire Control Radar payload shall draw a maximum average of 62 kVA total, where:  <b>b(3)</b>  d. The radar loads on the three phases should be balanced.	3.2.1.4.2.0-1	FCR-438
A-989	3.7.3.1.6.1.0-1	(U) When configured into the Fire Control System, which is in the moored configuration, the Fire Control Radar shall be functionally operational <b>b(3)</b>	3.2.1.4.3.1.0-1	FCR-441
A-2258	3.7.3.1.6.2.0-1	(U) When configured into the Fire Control System, which is in the moored configuration, the Fire Control Radar shall be functionally operational <b>b(3)</b>	3.2.1.4.3.2.0-1	FCR-443
A-2263	3.7.3.1.6.3.0-1	(U) For maintenance or emplacement, the Fire Control Radar, when configured into the Fire Control System which is in the moored configuration, shall be brought to the necessary temperature for ground functionality testing. See 3.2.5.1.3.1 <i>Temperature, Operations</i> .	3.2.1.4.3.3.0-1	FCR-445
A-2250	3.7.3.1.6.4.0-1	(U) For commonality, the coolant used in the Fire Control Radar shall be the same as the coolant (ethylene glycol and water solution) used in the Surveillance Radar.	3.2.1.4.3.4.0-1	FCR-447
A-991	3.7.3.1.7.0-1	<b>b(3)</b>	3.2.1.4.4.0-1	FCR-449
A-1568	3.7.3.1.8.0-1	(U) The Fire Control Radar shall execute an EMCON command from the Fire Control System CPG.	3.2.1.3.2.0-1	FCR-77

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-997	3.7.3.1.9.1.0-1	b(1)	3.2.1.4.6.1.0-1	FCR-456
A-1583	3.7.3.1.9.1.0-2	(U) The Fire Control Radar, while in the appropriate mode, shall execute a command for frequency band utilization from the Fire Control System CPG.	3.2.1.4.6.1.0-2	FCR-457
A-1000	3.7.3.1.9.2.0-1	b(1)	3.2.1.4.6.2.0-1	FCR-459
A-1001	3.7.3.1.9.2.0-2	b(1)	3.2.1.4.6.2.0-2	FCR-460
A-1003	3.7.3.1.10.0-1	b(3)	3.2.1.4.7.0-1	FCR-462
A-1010	3.7.3.1.12.1.0-1	b(3)	3.2.1.3.5.1.0-1	FCR-467
A-1012	3.7.3.1.12.2.0-1	b(3)	3.2.1.3.5.2.0-1	FCR-469
A-2313	3.7.3.1.12.3.0-1	(U) The Fire Control Radar, in the appropriate operational mode, shall record all data types listed herein while meeting the operational performance requirements specified in 3.7.3 <i>Fire Control Radar Prime Item</i> . Data types include: a. initialization parameters, b. <span style="background-color: black; color: white; text-align: center;">b(3)</span> c. status, and d. <span style="background-color: black; color: white; text-align: center;">b(3)</span>	3.2.1.3.5.3.0-1	FCR-471
A-1014	3.7.3.1.13.0-1	b(3)	3.2.1.3.6.0-1	FCR-473
A-1017	3.7.3.1.14.0-1	(U) While in the Tactical Mode, the Fire Control Radar shall execute cues, which may require a volume search, from the FCS CPG, given sufficient radar resources.	3.2.1.3.7.0-1	FCR-475

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1020	3.7.3.1.15.0-1	b(3)	3.2.1.3.8.0-1	FCR-477
A-1021	3.7.3.1.15.0-2	b(3)	3.2.1.3.8.0-2	FCR-478
A-1024	3.7.3.1.16.1.0-1	(U) The Fire Control Radar, when configured into the Fire Control System and in the Tactical Mode, shall track ABTs operating above the radar horizon at ranges commensurate with their signature and location within the electronic field of view of the Fire Control Radar.	3.2.1.3.9.1.0-1	FCR-481
A-1027	3.7.3.1.16.2.1.0-1	b(1)	3.2.1.3.9.2.1.0-1	FCR-484

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1029	3.7.3.1.16.2.2.0-1	b(1)	3.2.1.3.9.2.2.0-1	FCR-486
A-1031	3.7.3.1.16.3.0-1	(U) The Fire Control Radar shall provide automatic track initiation of detected targets.	3.2.1.3.9.3.0-1	FCR-488
A-1034	3.7.3.1.16.4.0-1	(U) When configured into the Fire Control System which is in the Tactical Mode, the Fire Control Radar shall update tracks to maintain accuracy unless the update rate is specified by the associated CPG.	3.2.1.3.9.4.0-1	FCR-490
A-1035	3.7.3.1.16.4.0-2	(U) The Fire Control Radar, when configured into the Fire Control System which is in the Tactical Mode shall act upon track update rate commands from the Fire Control System CPG.	3.2.1.3.9.4.0-2	FCR-491
A-1036	3.7.3.1.16.4.0-3	b(3)	3.2.1.3.9.4.0-3	FCR-492
A-111654	3.7.3.1.16.4.0-4	b(3)	3.2.1.3.9.4.0-3	FCR-492
A-1038	3.7.3.1.16.5.0-1	(U) The Fire Control Radar, when configured into the Fire Control System which is in the Tactical Mode, shall act upon a command from the Fire Control System CPG to drop track by dropping the identified track.	3.2.1.3.9.5.0-1	FCR-494

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1040	3.7.3.1.16.6.0-1	b(3)	3.2.1.3.9.6.0-1	FCR-498
A-1042	3.7.3.1.16.7.0-1	b(3)	3.2.1.3.9.6.0-1	FCR-498
A-1045	3.7.3.1.17.1.0-1	b(1)	3.2.1.3.10.1.0-1	FCR-501
A-1047	3.7.3.1.17.2.0-1	b(1)	3.2.1.3.10.2.0-1	FCR-503
A-1049	3.7.3.1.17.3.0-1	b(1)	3.2.1.3.10.3.0-1	FCR-505
A-1051	3.7.3.1.17.4.0-1	b(1)	3.2.1.3.10.4.0-1	FCR-507

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1053	3.7.3.1.18.0-1	b(1)	3.2.1.3.11.0-1	FCR-509
A-1056	3.7.3.1.19.1.0-1	(U) The Fire Control Radar shall have an [redacted] b(3)	3.2.1.3.12.1.0-1	FCR-512
A-1579	3.7.3.1.19.1.0-2	(U) The Fire Control Radar, when configured into the Fire Control System and in the Tactical Mode, shall act upon [redacted] b(3)	3.2.1.2.1.1.0-2	FCR-513
A-5050	3.7.3.1.19.2.0-1	(U) The Fire Control Radar shall have a [redacted] b(3)	3.2.1.3.12.2.0-1	FCR-515
A-5051	3.7.3.1.19.2.0-2	(U) The Fire Control Radar shall have a 360° [redacted] b(3)	3.2.1.3.12.2.0-2	FCR-516
A-1582	3.7.3.1.20.0-1	(U) The Fire Control Radar, when in the appropriate mode, shall act upon mission information commands, including priority, from the Fire Control System CPG.	3.2.1.3.13.0-1	FCR-518
A-1064	3.7.3.1.20.0-2	(U) The Fire Control Radar shall act upon ABT, TBM, LCR and SMT mission commands (priority and sector) from the Fire Control System CPG.	3.2.1.3.13.0-2	FCR-519
A-1581	3.7.3.1.21.1.1.0-1	(U) The Fire Control Radar, when configured into the Fire Control System which is in the Tactical Mode, shall act upon [redacted] b(3) [redacted] interrogation commands from the Fire Control System CPG.	3.2.1.3.14.1.1.0-1	FCR-523
A-113367	3.7.3.1.21.1.1.0-2	b(1)	3.2.1.3.14.1.1.0-2 3.2.1.3.14.1.1.0-3	FCR-4140 FCR-4141

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-113369	3.7.3.1.21.1.1.0-3	b(1)	3.2.1.3.14.1.1.0-2	FCR-4140
A-1071	3.7.3.1.21.1.2.0-1	b(3)		
A-111706	3.7.3.1.21.1.2.0-2	b(3)	3.2.1.3.14.1.2.0-2	FCR-4072
A-1073	3.7.3.1.21.2.0-1	b(1)	3.2.1.3.14.1.1.1.0-3	FCR-528
A-6419	3.7.3.1.21.2.0-2	b(1)	3.2.1.3.14.1.1.1.0-4	FCR-529
A-1075	3.7.3.1.21.3.0-1	b(1)	3.2.1.3.14.1.1.2.0-1	FCR-531
A-113359	3.7.3.1.21.4.0-1	b(1)	3.2.1.3.14.1.1.1.0-1	FCR-4142
A-1580	3.7.3.1.21.4.0-2	b(1)	3.2.1.3.14.1.1.1.0-2	FCR-527
A-1077	3.7.3.1.21.5.0-1	b(1)	3.2.1.3.14.1.1.3.0-1	FCR-533




SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-2024	3.7.3.1.21.6.0-1	(U) The Fire Control Radar, when configured into the Fire Control System which is in the Tactical Mode, shall act upon a command to perform an IFF interrogation on a designated track from the Fire Control System CPG.	3.2.1.3.14.2.0-1	FCR-535
A-1079	3.7.3.1.22.0-1	b(1)	3.2.1.4.8.0-1	FCR-537
A-1081	3.7.3.1.23.0-1	(U) The Fire Control Radar detection range, detection accuracy tracking, and in the Clutter and Multipath environments defined in Appendix C, when configured into the Fire Control System and in an operational mode.	3.2.1.4.9.0-1 3.2.1.4.9.0-2	FCR-539 FCR-3646
A-6473	3.7.3.2.1.0-1	b(1)	3.2.1.1.1.8.0-1	FCR-542
A-6474	3.7.3.2.1.0-2	b(1)	3.2.1.1.1.8.0-2	FCR-543

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1089	3.7.3.2.2.0-1	(U) When configured into the Fire Control System which is in the Tactical Mode, the Fire Control Radar shall detect and track available ABT targets specified in 3.1.4.1 <i>Air Breathing Targets</i> .	3.2.1.1.1.0-1 3.2.1.1.1.3.0-1	FCR-13 FCR-15
A-1090	3.7.3.2.2.0-2	(U) When configured into the Fire Control System which is in the Tactical Mode and when commanded, the Fire Control Radar	3.2.1.1.1.5.0-1	FCR-550
A-1092	3.7.3.2.2.0-3	b(3)	3.2.1.1.1.4.0-1	FCR-552
A-1093	3.7.3.2.2.0-4	b(1)	3.2.1.1.1.0-2 3.2.1.1.1.3.0-2	FCR-553 FCR-852
A-1094	3.7.3.2.2.0-5	b(1)	3.2.1.1.1.2.0-1	FCR-554
A-1100	3.7.3.2.2.0-6	b(3)	3.2.1.2.5.0-2	FCR-555

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1102	3.7.3.2.3.0-1	(U) The Fire Control Radar, when configured into the Fire Control System which is in the Tactical Mode, shall act upon track update rate commands from the CPG for tracks which are part of an engagement.	3.2.1.3.9.4.0-4	FCR-557
A-1110	3.7.3.2.4.1.1.0-1	 b(1)	3.2.1.2.1.2.1.1.0-1	FCR-561

000252

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1112	3.7.3.2.4.1.2.0-1	b(1)	3.2.1.2.1.2.1.2.0-1	FCR-563
A-1115	3.7.3.2.4.2.1.0-1	b(1)	3.2.1.2.1.2.2.1.0-1	FCR-566

000253

SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1117	3.7.3.2.4.2.2.0-1	b(1)	3.2.1.2.1.2.2.2.0-1	FCR-568
A-6893	3.7.3.2.4.2.2.0-2	b(1)	3.2.1.2.1.2.2.2.0-2	FCR-3306
A-1121	3.7.3.2.5.0-1	b(1)	3.2.1.1.1.6.0-1	FCR-570
A-10315	3.7.3.2.5.0-2	b(1)	3.7.2.7.0-4	FCR-3470

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SECRET/NOFORN				
A-Spec ID	A-Spec Section Number	System Specification Text	FCR Section	FCR ID
A-1126	3.7.3.3.0-1	b(3)	3.2.1.1.2.1.2.0-1	FCR-572
A-1133	3.7.3.4.0-1	b(3)	3.2.1.1.2.2.2.0-1	FCR-575
A-1142	3.7.3.5.1.0-1	b(1)	3.2.1.1.2.3.2.0-1	FCR-579
A-1144	3.7.3.5.2.0-1	b(1)	3.2.1.1.2.3.3.0-1	FCR-581
A-1147	3.7.3.5.3.0-1	b(1)	3.2.1.1.2.3.4.0-1	FCR-583
A-1149	3.7.3.5.4.0-1	b(1)	3.2.1.1.2.3.1.0-1	FCR-585
SECRET/NOFORN				

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**SECRET//NOFORN**

April 8, 2010  
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**SECRET//NOFORN**

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6.5 (U) Internal Traceability Matrix

TABLE XXIII: (U) Internal Traceability Matrix

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-554	3.2.1.1.1.2.0-1	b(1)	3.2.1.2.1.2.1.1.0-1 3.2.1.2.1.2.1.2.0-1 3.2.1.2.1.2.2.1.0-1 3.2.1.2.1.2.2.2.0-1
FCR-512	3.2.1.3.12.1.0-1	(U) The FCR shall have an [redacted] b(3)	3.2.1.2.1.1.0-1
FCR-3430	3.2.1.4.1.0-1	(U) All FCR airborne equipment which is to be installed within the windscreen shall fit within the volume shown in Figure 2.	3.2.2.1.0-1
FCR-3207	3.2.1.4.4.0-2	(U) If a receiver channel fails, the FCR shall reconfigure the operating channels in order to preserve [redacted] b(3)	3.2.4.1.1.1.0-1 3.2.1.4.4.0-1
FCR-3184	3.3.3.2.3.0-4	(U) The FCR software shall provide safety critical alerts that are distinct from routine alerts.	3.3.3.2.3.0-1
FCR-3288	3.7.1.0-1	b(3)	3.2.1.4.9.0-1 3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-967	3.7.1.0-2	b(1)	3.2.1.4.6.1.0-1
FCR-4037	3.7.1.0-3	b(3)	3.2.1.1.1.9.0-1
FCR-3438	3.7.1.0-4	b(3)	3.2.1.4.9.0-1 3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3437	3.7.1.0-5	b(3)	3.2.1.4.9.0-1 3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1



SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-3717	3.7.1.0-5.0-1	b(1)	3.2.1.1.1.2.0-1
FCR-3716	3.7.1.0-6	b(1)	3.2.1.4.8.0-1
FCR-1109	3.7.1.1.1.0-1	(U) The AEU requirements shall apply in the operating environment of the aerostat, including the windscreen, confluence lines, and lightning cage.	3.2.5.1.1.1.0-1 3.2.5.1.2.1.0-1 3.2.5.1.6.0-1 3.2.5.1.6.0-2 3.2.5.1.9.1.0-1 3.2.5.2.1.1.0-1 3.2.5.2.4.1.2.2.0-2
FCR-975	3.7.1.1.2.0-1	b(1)	3.2.1.3.10.1.0-1
FCR-976	3.7.1.1.2.0-2	b(1)	3.2.1.1.2.3.4.0-1 3.7.1.0-5.0-1
FCR-977	3.7.1.1.2.0-3	b(1)	3.2.1.3.10.2.0-1 3.2.1.1.1.6.0-1 3.2.1.1.2.3.4.0-1
FCR-978	3.7.1.1.2.0-4	b(1)	3.2.1.3.10.2.0-1 3.2.1.1.1.6.0-1 3.2.1.1.2.3.4.0-1
FCR-980	3.7.1.1.3.0-1	b(3)	3.2.1.3.12.1.0-1
FCR-981	3.7.1.1.3.0-2	b(3)	3.2.1.1.1.2.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-983	3.7.1.1.3.0-5	b(3)	3.2.1.2.1.2.1.1.0-1 3.2.1.2.1.2.1.2.0-1 3.2.1.2.1.2.2.1.0-1 3.2.1.2.1.2.2.2.0-1
FCR-984	3.7.1.1.3.0-6	b(3)	3.2.1.1.1.2.0-1
FCR-986	3.7.1.1.3.0-7	b(3)	3.2.1.1.1.5.0-1
FCR-987	3.7.1.1.3.0-8	b(3)	3.2.1.1.1.5.0-1
FCR-990	3.7.1.1.4.0-1	b(1)	3.2.1.3.14.1.1.1.0-3
FCR-3296	3.7.1.1.5.0-2	b(1)	3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3313	3.7.1.1.5.0-3	b(1)	3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3297	3.7.1.1.5.0-4	b(1)	3.2.1.1.1.5.0-1
FCR-3314	3.7.1.1.5.0-5	b(1)	3.2.1.1.1.5.0-1
FCR-994	3.7.1.1.6.1.0-1	b(3)	3.2.1.3.10.3.0-1 3.2.1.3.10.4.0-1
FCR-1013	3.7.1.1.7.1.0-1	b(3)	3.2.1.3.10.3.0-1 3.2.1.3.10.4.0-1
FCR-1017	3.7.1.1.7.2.0-1	b(1)	3.2.1.3.10.3.0-1
FCR-3298	3.7.1.1.7.2.0-2	b(1)	3.2.1.1.1.5.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-1018	3.7.1.1.7.2.0-3	b(1)	3.2.1.3.10.3.0-1
FCR-3299	3.7.1.1.7.2.0-4	b(1)	3.2.1.1.1.5.0-1
FCR-1020	3.7.1.1.7.3.0-1	b(1)	3.2.1.3.10.3.0-1 3.2.1.4.9.0-1 3.7.1.0-6
FCR-1021	3.7.1.1.7.3.0-2	b(1)	3.2.5.2.4.1.2.2.0-2 3.2.1.4.9.0-1
FCR-1023	3.7.1.1.7.4.0-1	b(1)	3.2.1.4.8.0-1 3.2.1.1.1.6.0-1 3.2.1.1.2.3.4.0-1
FCR-3708	3.7.1.1.7.4.0-2	b(1)	3.2.1.4.8.0-1 3.2.1.1.1.6.0-1 3.2.1.1.2.3.4.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-1024	3.7.1.1.7.4.0-3	b(1)	3.2.1.4.8.0-1
FCR-3711	3.7.1.1.7.4.0-4	b(1)	3.2.1.4.8.0-1
FCR-1026	3.7.1.1.7.4.0-5	b(1)	3.2.1.4.8.0-1
FCR-3709	3.7.1.1.7.4.0-6	b(1)	3.2.1.4.8.0-1
FCR-1029	3.7.1.1.7.5.0-1	b(3)	3.2.1.4.8.0-1
FCR-1031	3.7.1.1.7.6.0-1	(U) The AEU normalized monopulse slope after calibration shall be NLT the values listed in Table XIV.	3.2.1.2.4.1.0-1 3.2.1.3.10.3.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-1033	3.7.1.1.7.7.0-1	(U) The AEU pointing errors, relative to the array face, shall be as defined in Table XV.	3.2.1.2.4.1.0-1 3.2.1.2.4.2.0-1 3.2.1.2.4.3.0-1 3.2.1.3.10.3.0-1 3.2.1.3.10.4.0-1 3.2.1.1.2.3.3.0-1
FCR-1037	3.7.1.1.7.8.0-1	b(1)	3.2.1.4.8.0-1
FCR-1038	3.7.1.1.7.8.0-2		3.2.1.4.8.0-1
FCR-1040	3.7.1.1.7.9.0-1		3.2.1.1.1.6.0-1 3.2.1.1.2.3.4.0-1
FCR-3710	3.7.1.1.7.9.0-1.0-1		3.2.1.1.1.5.0-1
FCR-1041	3.7.1.1.7.9.0-2		3.2.1.1.1.6.0-1 3.2.1.1.2.3.4.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-1043	3.7.1.1.7.10.0-1	b(1)	3.2.1.4.9.0-1
FCR-1072	3.7.1.2.1.1.0-1	b(3)	3.2.1.3.14.1.1.1.0-3 3.2.1.3.14.1.1.1.0-4 3.2.1.1.2.3.1.0-1
FCR-1112	3.7.1.2.1.1.0-3	b(1)	3.2.1.3.14.1.1.2.0-1
FCR-1080	3.7.1.2.2.1.0-1	b(1)	3.2.1.2.4.1.0-1 3.2.1.2.4.2.0-1 3.2.1.2.4.3.0-1 3.2.1.3.10.1.0-1 3.2.1.3.10.4.0-1 3.2.1.1.2.3.3.0-1
FCR-1081	3.7.1.2.2.1.0-2	b(1)	3.2.1.3.14.1.1.1.0-3 3.2.1.3.14.1.1.1.0-4
FCR-1083	3.7.1.2.2.2.0-1	b(1)	3.2.1.4.9.0-1 3.7.1.0-6
FCR-1088	3.7.1.2.2.3.0-1	b(3)	3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-1092	3.7.1.2.3.1.0-1	b(1)	3.2.1.3.10.1.0-1
FCR-1094	3.7.1.2.3.2.0-1	b(1)	3.2.1.1.1.6.0-1 3.2.1.1.2.3.4.0-1 3.7.1.0-5.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-4092	3.7.1.2.4.0-1	b(1)	3.2.1.4.9.0-1
FCR-946	3.7.1.3.1.0-1	b(3)	3.2.1.2.1.1.0-1 3.2.4.1.1.1.0-1 3.2.4.1.1.2.0-1 3.3.3.1.2.0-2
FCR-948	3.7.1.3.1.0-2	b(3)	3.2.5.1.9.2.1.0-1 3.2.4.1.1.1.0-1 3.2.4.1.1.2.0-1 3.3.3.1.2.0-2
FCR-950	3.7.1.3.2.0-1	b(3)	3.2.1.1.1.2.0-1 3.2.1.1.2.1.2.0-1 3.2.1.1.2.2.2.0-1 3.2.1.1.2.3.1.0-1
FCR-952	3.7.1.3.2.0-2	b(3)	3.2.1.2.4.1.0-1 3.2.1.2.4.2.0-1 3.2.1.2.4.3.0-1 3.2.5.1.9.1.0-1 3.2.1.3.10.4.0-1 3.2.1.1.1.2.0-1 3.2.1.2.1.2.1.1.0-1 3.2.1.2.1.2.1.2.0-1 3.2.1.2.1.2.2.1.0-1 3.2.1.2.1.2.2.2.0-1 3.2.1.1.2.3.1.0-1
FCR-953	3.7.1.3.2.0-3	(U) Limit switches shall be provided to prevent damage to the elevation drive due to overtravel.	3.2.5.1.9.2.1.0-1 3.2.4.1.1.1.0-1 3.2.4.1.1.2.0-1
FCR-954	3.7.1.3.2.0-4	(U) Mechanical stops shall be provided to prevent damage to the elevation drive due to overtravel.	3.2.5.1.9.2.1.0-1 3.2.4.1.1.1.0-1 3.2.4.1.1.2.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-958	3.7.1.3.3.0-1	(U) The Gimbal and damper assembly shall restrict the motion of the FCR payload to prevent damage to the platform in winds up to 148 km/hr (80 knots) and 3.05 m/s (10 fps) turbulence	3.2.5.1.9.2.1.0-1
FCR-3319	3.7.1.4.0-1	(U) The INS shall provide position and orientation data.	3.2.1.2.7.1.0-1
FCR-933	3.7.1.4.0-2	(U) The INS shall provide attitude data <b>b(3)</b>	3.2.1.2.7.1.0-1 3.2.1.3.10.1.0-1 3.2.1.3.10.2.0-1 3.2.1.3.10.3.0-1 3.2.1.3.10.4.0-1
FCR-934	3.7.1.4.0-3	(U) The INS shall be capable of alignment in <b>b(3)</b>	3.5.5.1.0-1
FCR-935	3.7.1.4.0-4	(U) The INS determination of the three Euler angles (or, equivalently, the pitch, roll and yaw angles) of the receive antenna reference plane shall be as shown in Table XIX after INS alignment. <b>b(3)</b>	3.2.1.2.4.1.0-1 3.2.1.2.4.2.0-1 3.2.1.2.4.3.0-1 3.2.1.2.7.1.0-1 3.2.1.1.2.3.3.0-1
FCR-3575	3.7.1.5.0-1	(U) The GPS shall provide measurements with a position error <b>b(3)</b>	3.2.1.3.10.1.0-1 3.2.1.3.10.4.0-1 3.2.1.1.2.3.3.0-1
FCR-3320	3.7.1.6.0-1	(U) The IFF Interrogator's field of view shall be aligned with the field of view of the radar.	3.2.1.2.6.1.0-1
FCR-3321	3.7.1.6.0-2	(U) The IFF Interrogator's azimuth coverage shall be <b>b(3)</b>	3.2.1.2.6.1.0-1
FCR-3441	3.7.1.6.0-3	(U) The IFF Interrogator's elevation coverage shall be <b>b(3)</b>	3.2.1.2.6.1.0-1
FCR-3324	3.7.1.7.0-1	(U) The LPM shall provide protection for the zeroize interfaces to the CPG Payload against induced currents caused by lightning strikes.	3.2.5.1.10.2.0-1 3.2.5.2.4.1.2.2.0-2
FCR-3195	3.7.1.8.1.0-1	(U) The REG PDU shall provide power to all airborne FCR hardware components.	3.2.1.4.2.0-1
FCR-3327	3.7.1.8.3.0-2	(U) The SCU shall provide stable azimuth loop compensator characteristics when commanded by the SDP.	3.2.1.2.1.1.0-1 3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3329	3.7.1.8.3.0-3	(U) The SCU shall provide continuous stable elevation loop compensator characteristics for the operational wind conditions.	3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3328	3.7.1.8.3.0-4	(U) The SCU shall provide azimuth and elevation motor brake control.	3.2.4.1.1.2.0-1 3.3.3.1.2.0-2



SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-908	3.7.1.9.0-1	(U) The HEU shall regulate the operating temperature of the <b>b(3)</b> and REG.	3.2.1.4.3.1.0-1 3.2.1.4.3.2.0-1
FCR-914	3.7.1.9.0-2	(U) The HEU, when the FCR is operating in the tactical mode or during calibration shall have an outlet temperature between 30°C and 40°C	3.2.1.1.1.2.0-1
FCR-918	3.7.1.9.0-3	(U) The HEU shall provide a heating element capable of heating the REG and <b>b(3)</b> to operational temperature from an ambient temperature of -40°C within 5.0 hours. Above 0°C the <b>b(3)</b> and REG are powered to provide additional heating to meet this requirement.	3.2.1.4.3.1.0-1
FCR-3443	3.7.1.9.0-4	(U) The HEU shall provide a cooling element to assist in cooling the REG and <b>b(3)</b> to operational temperature from an ambient temperature of <b>b(3)</b> Note: the FCS Platform chiller assists in cooling the equipment.	3.2.1.4.3.2.0-1
FCR-3488	3.7.1.10.0-1	(U) The SDP shall include multiple CPUs, thereby enabling parallel processing.	3.2.1.3.3.0-1
FCR-3489	3.7.1.10.0-2	(U) The SDP shall include removable disk drives.	3.2.1.3.4.2.0-1 3.2.1.3.4.3.0-1
FCR-3490	3.7.1.10.0-3	(U) The SDP shall include a tape drive.	3.2.1.3.4.2.0-1 3.2.1.3.4.3.0-1
FCR-3491	3.7.1.10.0-4	(U) The SDP shall provide the capability to transfer data from disk to tape.	3.2.1.3.4.2.0-1 3.2.1.3.4.3.0-1
FCR-3492	3.7.1.10.0-5	<b>b(3)</b>	3.2.1.3.5.1.0-1 3.2.1.3.5.2.0-1 3.2.1.3.5.3.0-1
FCR-3493	3.7.1.10.0-6	<b>b(3)</b>	3.2.1.3.3.0-1
FCR-3494	3.7.1.10.0-7	<b>b(3)</b>	3.2.1.3.3.0-1
FCR-3461	3.7.2.1.0-1	(U) The BSG software shall compute beam steering coefficients in response to radar pointing and beam definition commands.	3.2.1.1.1.7.0-1 3.2.1.1.1.7.0-2 3.2.1.1.1.7.0-3 3.2.1.1.1.8.0-2 3.2.1.2.1.2.1.1.0-1 3.2.1.2.1.2.1.2.0-1 3.2.1.2.1.2.2.1.0-1 3.2.1.2.1.2.2.2.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-3463	3.7.2.2.0-1	(U) The CCP software shall provide the interface between the FCR and the FCS CPG in accordance with the JLENS System IRS.	3.2.2.1.0-1
FCR-3464	3.7.2.3.0-1	(U) The DCA software shall have commandable levels of data recording which include a minimum level, a full test level, and a maximum of NLT two intermediate levels.	3.2.1.5.0-1
FCR-3462	3.7.2.4.0-1	(U) The ESM software shall support calibration/alignment of the <b>b(3)</b>	3.2.1.3.10.1.0-1 3.2.1.3.10.2.0-1 3.2.1.3.10.3.0-1 3.2.1.3.10.4.0-1
FCR-3465	3.7.2.4.0-2	(U) The ESM software shall perform FCR software state control.	3.2.4.3.1.0-1 3.2.4.3.2.0-1 3.2.4.3.3.0-1
FCR-3498	3.7.2.4.0-3	(U) The ESM software shall determine if a sub-array is non-functional and send status to MAP.	3.2.1.4.4.0-1
FCR-3499	3.7.2.4.0-4	(U) The ESM software shall determine if a receive channel is non-functional.	3.2.1.4.4.0-2
FCR-3501	3.7.2.4.0-5	<b>b(3)</b>	3.2.1.4.4.0-2
FCR-1067	3.7.2.5.0-1	(U) The MAP software shall <b>b(3)</b> as commanded by the CPG.	3.2.1.2.1.2.1.1.0-1 3.2.1.2.1.2.2.1.0-1
FCR-931	3.7.2.5.0-2	(U) The MAP software shall support <b>b(3)</b>  Note: <b>b(3)</b> will only be enabled if testing determines that <b>b(3)</b>	3.2.1.2.6.2.0-1
FCR-3439	3.7.2.5.0-3	(U) The MAP software shall translate an ECR state vector commanded in an IFF interrogation request from the CPG into IFF body coordinates for commanding the CIT to perform the interrogation.	3.2.1.3.14.2.0-1
FCR-3504	3.7.2.5.0-4	(U) The MAP shall have the capability to <b>b(3)</b>	3.2.1.3.7.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-1066	3.7.2.5.0-5	b(1)	3.2.1.1.1.9.0-1 3.2.1.1.1.2.0-1
FCR-1123	3.7.2.5.0-6	(U) The MAP software shall have the capability to selectively activate/deactivate frequencies defined in Table X.	3.2.1.4.6.2.0-1 3.2.1.4.6.2.0-2
FCR-3208	3.7.2.5.0-7	(U) The MAP software shall perform position and orientation estimation and data alignment / registration incorporating data from a GPS-aided inertial navigation system.	3.2.1.2.7.1.0-1 3.2.1.2.7.2.3.0-1 3.2.5.1.9.1.0-1 3.2.1.1.2.3.3.0-1
FCR-858	3.7.2.5.0-8	b(3)	3.2.4.1.1.2.0-1 3.2.1.4.2.0-1
FCR-3505	3.7.2.5.0-9	(U) The MAP software shall have the capability b(3)	3.2.1.3.8.0-1 3.2.1.3.9.1.0-1
FCR-3506	3.7.2.5.0-10	(U) The MAP software shall b(3)	3.2.1.1.2.1.1.0-1 3.2.1.1.2.2.1.0-1 3.2.1.1.1.1.0-2 3.2.1.1.2.3.1.0-1
FCR-857	3.7.2.5.0-11	(U) The MAP software automatic b(3) shall be dependent on the radar configuration as provided by the CPG.	3.2.1.3.8.0-1 3.2.1.3.8.0-2
FCR-3292	3.7.2.5.0-12	(U) The MAP software shall b(3)	3.2.1.2.1.1.0-1
FCR-3293	3.7.2.5.0-13	(U) The MAP software shall command b(3)	3.2.1.2.1.1.0-1 3.2.5.1.9.1.0-1
FCR-3427	3.7.2.5.0-14	b(1)	3.7.2.5.0-9
FCR-3500	3.7.2.5.0-15	(U) The MAP software shall respond to b(3)	3.2.1.4.4.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-3507	3.7.2.5.0-16	(U) The MAP software shall have the capability to support calibration/recalibration of the hardware.	3.2.1.3.10.1.0-1 3.2.1.3.10.2.0-1 3.2.1.3.10.3.0-1 3.2.1.3.10.4.0-1
FCR-3467	3.7.2.6.0-1	b(3)	3.2.1.2.7.1.0-1 3.2.1.3.14.2.0-1
FCR-3468	3.7.2.6.0-2	b(3)	3.2.4.2.1.1.0-1
FCR-3469	3.7.2.6.0-3	b(3)	3.2.4.2.1.1.0-1
FCR-3581	3.7.2.6.0-4	b(3)	3.2.1.2.1.1.0-1 3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3582	3.7.2.6.0-5	b(3)	3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3583	3.7.2.6.0-6	b(3)	3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3445	3.7.2.7.0-1	b(3)	3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1
FCR-3446	3.7.2.7.0-2	b(3)	3.2.1.1.1.2.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-3574	3.7.2.7.0-3	b(3)	3.2.1.1.1.3.0-1 3.2.1.1.2.1.1.0-1 3.2.1.1.2.2.1.0-1 3.2.1.2.4.1.0-1 3.2.1.2.4.2.0-1 3.2.1.2.4.3.0-1 3.2.1.3.9.1.0-1 3.2.1.3.10.1.0-1 3.2.1.3.10.2.0-1 3.2.1.3.10.3.0-1 3.2.1.3.10.4.0-1 3.2.1.1.1.5.0-1 3.2.1.1.1.2.0-1 3.2.1.1.2.1.2.0-1 3.2.1.1.2.2.2.0-1 3.2.1.1.2.3.2.0-1 3.2.1.1.2.3.3.0-1 3.2.1.1.2.3.1.0-1
FCR-3471	3.7.2.7.0-5	b(3)	3.2.5.1.3.1.0-1
FCR-3472	3.7.2.7.0-6	b(3)	3.2.1.1.1.1.0-1 3.2.1.4.8.0-1
FCR-3502	3.7.2.7.0-7	(U) The SPS software shall respond to a notification of a b(3) corresponding to the appropriate case. In the absence of such a condition, the SPS will use b(3)	3.2.1.4.4.0-1
FCR-3509	3.7.2.7.0-8	b(1)  b(3)	3.2.1.1.1.2.0-1 3.2.1.1.2.3.1.0-1

SECRET/NOFORN			
ID	FCR PIDS Object Number	Fire Control Radar Prime Item Development Specification	FCR PIDS Links
FCR-3508	3.7.2.7.0-9	(U) The SPS software shall have the capability to process calibration data.	3.2.1.3.10.1.0-1 3.2.1.3.10.2.0-1 3.2.1.3.10.3.0-1 3.2.1.3.10.4.0-1
SECRET/NOFORN			

**6.6 (U) Objective Requirements for Study**

**6.6.1 (U) IFF Objective Range**

b(1)

**6.6.2 (U) Objective Ambiguity Group for Fault Detection / Fault Isolation**

b(3)

**6.6.3 (U) Objective RF, Thermal, Optical, and Acoustic Signatures**

(U) The FCR will exhibit minimal distinctive RF, thermal, optic, and acoustic signatures [O].

**6.6.4 (U) Objective Number of False Tracks in the SMT Mission**

b(1)

**6.6.5 (U) Objective Probability of Correct Target Type**

b(1)

**6.6.6 (U) Objective Impact Point Predictions**

(U) The FCR will provide impact point predictions for TBM and LCR tracks [O].

**6.6.7 (U) Objective Performance in**

b(3)

b(1)

**6.6.8 (U) Objective Performance in** [REDACTED] **b(3)**

[REDACTED]

[REDACTED] **b(1)**

**6.6.9** [REDACTED] **b(3)**

[REDACTED] **b(3)**

**6.7 (U) Objective Requirements for Options**

**6.7.1** [REDACTED] **b(3)**

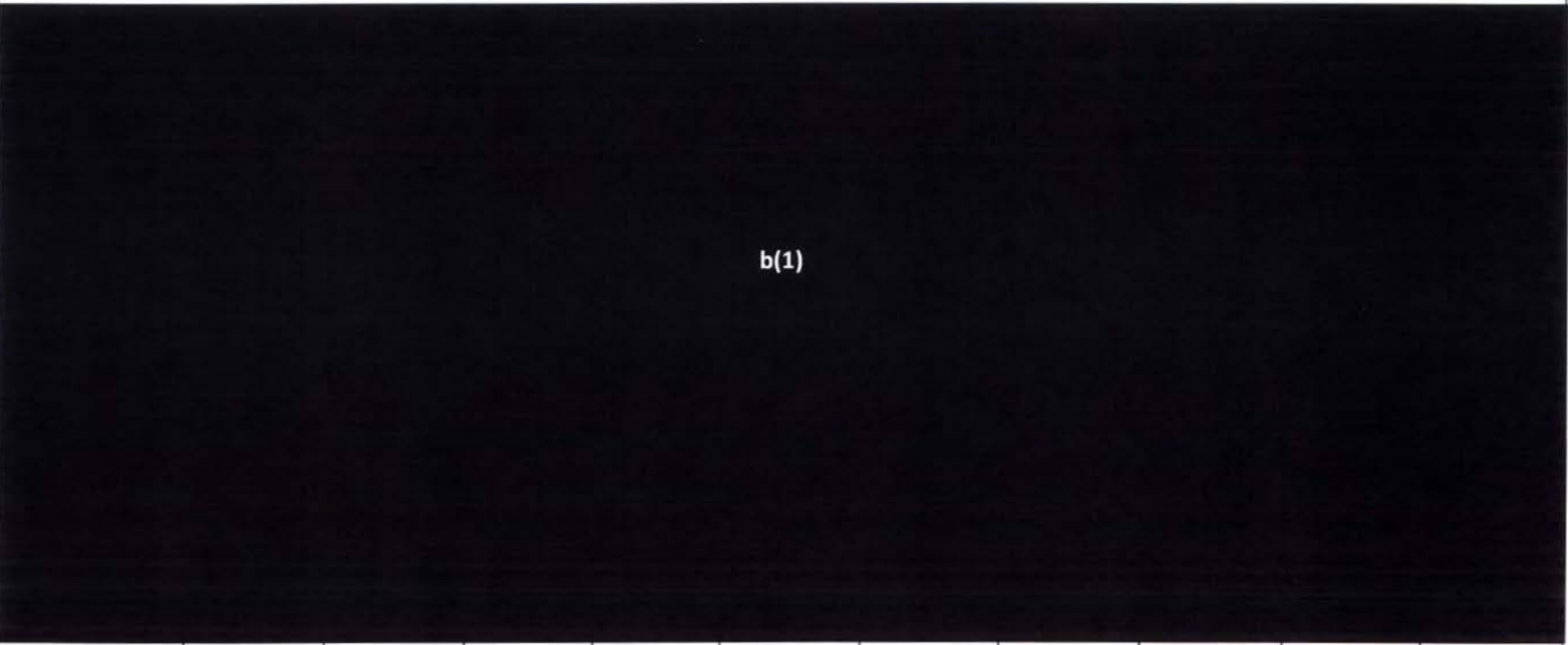
[REDACTED] **b(3)**

**6.7.2 (U) Signal Processing Reserve**

(U) The FCR will have an inherent 50% reserve signal processing capability, computer memory and computer throughput [O].

7 (U) Appendix

7.1 (U) FCR Nominal Waveforms

SECRET/NOFORN
TABLE XXIV: (U) FCR Nominal Waveforms
 <p>b(1)</p>

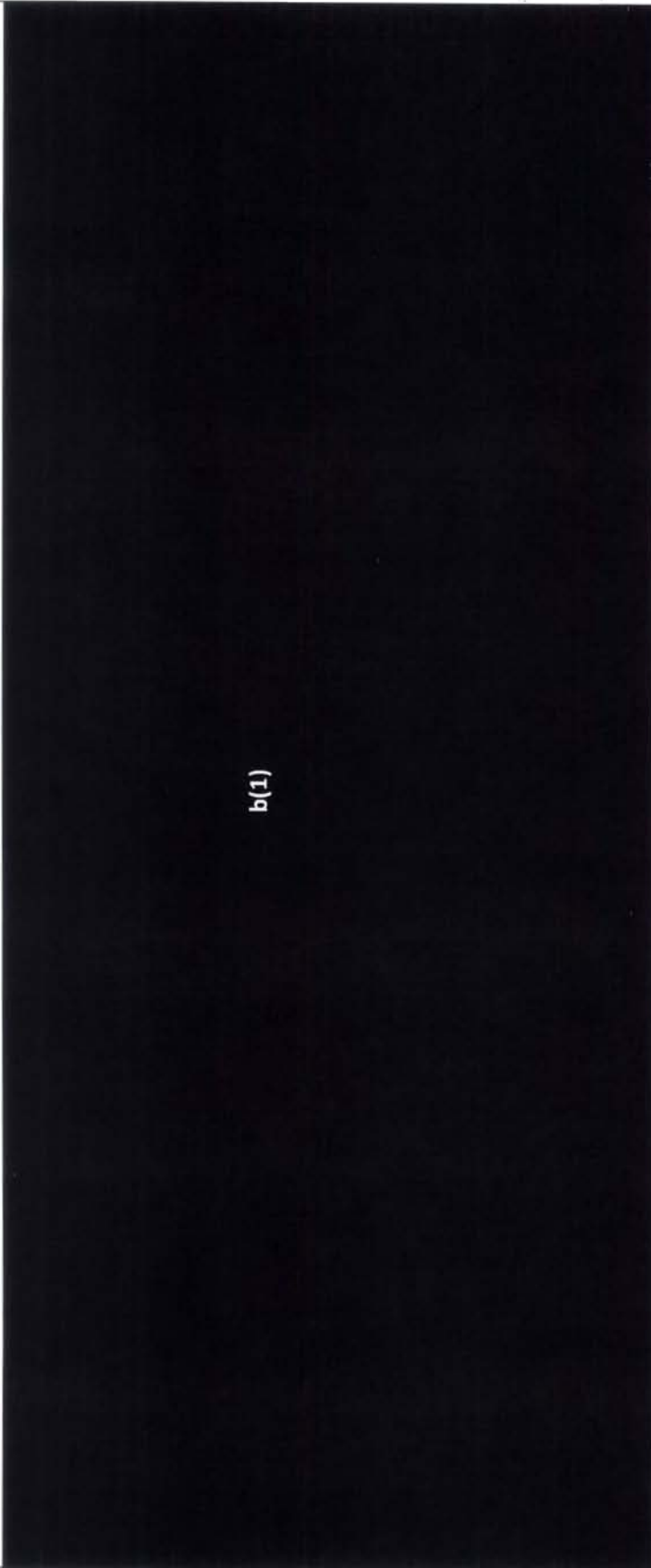
000273



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April 8, 2010  
CAGE Code 49956  
H389009 Rev G

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**b(1)**

**SECRET//NOFORN**

**b(1)**

**SECRET//NOFORN**

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JOINT LAND ATTACK CRUISE MISSILE DEFENSE ELEVATED NETTED  
SENSOR SYSTEM (JLENS)  
FIRE CONTROL RADAR PRIME ITEM DEVELOPMENT SPECIFICATION  
ANNEX A (U)

Raytheon Contract No. DASG60-98-C-0001 CLIN00018 B009

b(7)(c)

(U) Prepared by:  
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## (U) Revision History

Revision	Authorization	Date	Description
Rev -	ED 6115818	12/18/06	Initial Release
Rev A	CN7025576	04/05/07	Update prior to CDRR
Rev B	CN 7026469	05/18/07	Update prior to CDRR
Rev C	CN 7026743	05/31/07	Update to stay current with PIDS. No change from Rev B other than header revisions and date.
Rev D	CN 7030454	12/17/07	Changes for the PDR
Rev E	CN 7037696	11/10/08	Update to stay current with PIDS. No change from Rev D other than header revisions and date.
Rev F	CN 269760	02/24/10	Update to stay current with PIDS.
Rev G	CN 270469	04/08/10	Update to WFOV monopulse slope and alignment to A-Spec. No change in Annex A from Rev E other than header revisions and date.
UNCLASSIFIED			

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b(1)

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**b(3)**

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**b(3)**

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**b(3)**

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**b(3)**

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3.2.1.2.2.1 (U) Target Classification

**b(1)**

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3.2.1.3.8 [REDACTED] b(3)

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- 3.2.1.4.6 (U) Operational Bandwidth
- 3.2.1.4.7 [REDACTED] b(3)
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- 3.2.1.4.9 (U) Performance in Clutter and Multipath
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      - 3.2.2.2.2.1 (U) Radar Command Acceptance from the CPG

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    - 3.2.4.1.1 (U) MTBSA
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  - 3.2.4.2 (U) Maintainability
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    - 3.2.4.2.2 (U) Prognostics
  - 3.2.4.3 (U) Configuration Checks
    - 3.2.4.3.1 (U) Initialization
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**3.2.5.2.4 (U) Electro-magnetic Environment Effects (E3)**

**3.2.5.2.5 [REDACTED] b(3)**

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**3.2.5.2.7 [REDACTED] b(3)**

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**3.2.6.1.1 (U) Rail Transportation**

**3.2.6.1.2 (U) Road Transportation**

**3.2.6.2 (U) Sea Transportation**

**3.2.6.2.1 (U) General**

**3.2.6.2.2 (U) Vibration**

**3.2.6.3 (U) Air Transportation**

**3.2.6.3.1 (U) General**

**3.2.6.3.2 (U) Vibration**

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**3.2.6.4.1 (U) Transportation Performance-Oriented Packaging**

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**3.3.1.2 (U) Hazardous Materials**

**3.3.2 (U) Nameplates and Product Marking**

**3.3.2.1 (U) Unique Identification**

**3.3.2.2 (U) Labels**

**3.3.3 (U) Safety**

**3.3.3.1 (U) Hardware Safety**

**3.3.3.1.1 (U) Radiation Safety**

**3.3.3.1.2 (U) Mechanical Safety**

**3.3.3.1.3 (U) Electrical Safety**

**3.3.3.2 (U) Software Safety**

**3.3.3.2.1 (U) Initialization into a Safe State**

**3.3.3.2.2 (U) Transition to a Hazardous Condition**

**3.3.3.2.3 (U) Safety Critical Alerts**

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**3.3.4 (U) Human Engineering**

**3.3.4.1 (U) Anthropometrics**

**3.3.5 (U) System Security**

**3.3.5.1 (U) Information Assurance (IA)**

**3.3.5.1.1 (U) Security Design and Configuration**

**3.3.5.1.2 (U) Enclave and Computing Environment**

**3.3.5.1.3 (U) Enclave Boundary Defense**

**3.3.5.1.4 (U) Physical and Environmental**

**3.3.5.2 (U) [Redacted] b(3)**

**3.3.5.3 (U) [Redacted] b(3)**

**3.4 (U) Documentation**

**3.5 (U) Logistics**

**3.5.1 (U) Supply**

**3.5.2 (U) Maintenance**

**3.5.2.1 (U) Preventive Maintenance Check and Services (PMCS)**

**3.5.2.1.1 (U) Scheduled Maintenance**

**3.5.2.2 (U) Airborne Equipment Scheduled Maintenance Cycle**

- 3.5.3 (U) Vehicles, Shelters, and Trailers
- 3.5.4 (U) Lifting and Handling Equipment
- 3.5.5 (U) March Order and Emplacement
  - 3.5.5.1 (U) Emplacement Time
  - 3.5.5.2 (U) March Order Time
- 3.6 (U) Personnel And Training
- 3.7 (U) Subsystem Characteristics
  - 3.7.1 (U) Hardware Components
    - 3.7.1.1 (U) AEU Requirements
      - 3.7.1.1.1 (U) AEU Operation in the Aerostat Environment
      - 3.7.1.1.2 (U) Antenna Waveform Requirements
      - 3.7.1.1.3 (U) AEU Scan Requirements
      - 3.7.1.1.4 (U) AEU Aperture Efficiency
      - 3.7.1.1.5 (U) AEU Blake Chart Constant (BCC)
      - 3.7.1.1.6 (U) AEU Transmit Requirements
      - 3.7.1.1.7 (U) AEU Receive Array Requirements
    - 3.7.1.2 [REDACTED] b(3)
    - 3.7.1.2.1 [REDACTED] b(3)
    - 3.7.1.2.2 [REDACTED] b(3)
    - 3.7.1.2.3 [REDACTED] b(3)
    - 3.7.1.2.4 [REDACTED] b(3)
  - 3.7.1.3 (U) Antenna Mount Requirements
    - 3.7.1.3.1 (U) Az Drive Requirements
    - 3.7.1.3.2 (U) El Drive Requirements
    - 3.7.1.3.3 (U) Gimbal and Damper Assembly Requirements
  - 3.7.1.4 (U) INS Requirements
  - 3.7.1.5 (U) GPS Requirements
  - 3.7.1.6 (U) IFF Requirements

**3.7.1.7 (U) LPM Requirements**

**3.7.1.8 (U) REG Requirements**

**3.7.1.8.1 (U) PDU Requirements**

**3.7.1.8.2 (U) DDU Requirements**

**3.7.1.8.3 (U) SCU Requirements**

**3.7.1.9 (U) HEU Requirements**

**3.7.1.10 (U) SDP Requirements**

**3.7.2 (U) Software Components**

**3.7.2.1 (U) Beam Steering Generator (BSG)**

**3.7.2.1.1** **h(7)(c)** **h(3)**

**h(3)**

**3.7.2.2 (U) Communications and Control Processing (CCP)**

**3.7.2.3 (U) Data Collection and Analysis (DCA)**

**3.7.2.4 (U) Equipment Status Monitor (ESM)**

**3.7.2.5 (U) Mission Application Processing (MAP)**

**3.7.2.6 **h(3)****

**3.7.2.7 (U) Signal Processing (SPS)**

**4 (U) Verification and Quality Assurance Provisions**

**4.1 (U) Requirements Verification Matrix Content**

**4.1.1 (U) FCR PIDS Paragraph Number**

**4.1.2 (U) Test Period**

**4.1.3 (U) Verification Level**

**4.1.4 (U) Verification Method**

**4.1.4.1 (U) Demonstration (D)**

**4.1.4.2 (U) Test (T)**

**4.1.4.3 (U) Analysis (A)**

**4.1.4.4 (U) Inspection (I)**

**4.1.5 (U) Verification Location**

**4.2 (U) Requirements Verification Matrix**

TABLE I: (U) Requirements Verification Matrix

		b(7)(e)			
ID	Object Number		Verify Method	Verify Level	Verify Location
FCR_A-709	3.2.1.1.1.1.0-1	b(1)	Analysis, Test	FCR	SIM, Dugway
FCR_A-806	3.2.1.1.1.3.0-1	b(1)	Analysis, Test	FCR	SIM, Dugway
FCR_A-738	3.2.1.1.1.3.0-2	b(1)	Analysis, Test	FCR	SIM, Dugway
FCR_A-837	3.2.1.1.1.7.0-1	b(1)	Analysis, Test	FCR	SIM, Dugway
FCR_A-711	3.2.1.1.1.10.1.0-1	b(1)	Analysis, Test	FCR	SIM, Dugway

b(7)(e)					
ID	Object Number		Verify Method	Verify Level	Verify Location
FCR_A-712	3.2.1.1.1.10.1.0-2	b(1)	Analysis, Test	FCR	SIM, Dugway
FCR_A-713	3.2.1.1.1.10.2.0-1	b(1)	Analysis, Test	FCR	SIM, Dugway
FCR_A-714	3.2.1.1.1.13.0-1	b(1)	Analysis, Test	FCR	SIM, Dugway
FCR_A-715	3.2.1.2.1.0-1	b(1)	Analysis, Demonstration	FCR	SIM, Dugway
FCR_A-717	3.2.1.2.2.1.0-1	b(1)	Analysis, Test	FCR	SIM, Dugway
FCR_A-724	3.2.2.2.1.0-1	b(3)			
FCR_A-736	3.7.2.1.1.0-1	b(3)	Demonstration	Major Component	SEL
b(7)(e)					

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- 5 (U) Preparation for Delivery
- 6 (U) Notes
  - 6.1 (U) Acronyms
  - 6.2 (U) Glossary of Definitions
  - 6.3 (U) Requirements Allocation Matrix

TABLE II : (U) Requirements Allocation Matrix

		b(7)(c)		
ID	Object Number		Software RAM	Hardware RAM
FCR_A-709	3.2.1.1.1.1.0-1	b(1)	Software	Hardware
FCR_A-806	3.2.1.1.1.3.0-1	b(1)	Software	
FCR_A-738	3.2.1.1.1.3.0-2	b(1)	Software	
FCR_A-817	3.2.1.1.1.7.0-1	b(1)	MAP	Hardware

b(7)(c)				
ID	Object Number		Software RAM	Hardware RAM
FCR_A-711	3.2.1.1.1.10.1.0-1	b(1)	MAP	Hardware
FCR_A-712	3.2.1.1.1.10.1.0-2	b(1)	Software, SPS	AEU b(3)
FCR_A-713	3.2.1.1.1.10.2.0-1	b(1)	MAP	Hardware
FCR_A-714	3.2.1.1.1.13.0-1	b(1)	CCP, MAP	
FCR_A-715	3.2.1.2.1.0-1	b(1)	CCP, MAP	
FCR_A-717	3.2.1.2.2.1.0-1	b(1)	Software	
FCR_A-724	3.2.2.2.2.1.0-1	b(3)	CCP	

b(7)(c)

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		b(7)(c)		
ID	Object Number		Software RAM	Hardware RAM
FCR_A-736	3.7.2.1.1.0-1	b(3)		BSG
		b(7)(c)		

b(7)(c)

6.4 (U) System Specification Traceability Matrix

TABLE III : (U) System Traceability Matrix

b(7)(e)				
Section	ID	System Specification Annex A Text	FCR Annex A Section	FCR Annex A ID
3.2.1.3.1.1.1.0-1	AA-823	b(1)	3.2.1.1.1.1.0-1	FCR_A-709
3.2.1.3.1.1.2.0-1	AA-824	b(1)	3.2.1.1.1.3.0-1	FCR_A-806
3.2.1.3.1.1.3.1.0-1	AA-846	b(1)	3.2.1.1.1.10.1.0-1	FCR_A-711
3.2.1.3.1.1.3.1.0-2	AA-852	b(1)	3.2.1.1.1.10.1.0-2	FCR_A-712
3.2.1.3.1.1.3.2.0-1	AA-816	b(1)	3.2.1.1.1.10.2.0-1	FCR_A-713
3.2.1.3.1.1.6.0-1	AA-847	b(1)	3.2.1.1.1.13.0-1	FCR_A-714
3.2.1.3.2.1.0-1	AA-	b(1)	3.2.1.2.1.0-1	FCR_A-715

b(7)(e)				
Section	ID	System Specification Annex A Text	FCR Annex A Section	FCR Annex A ID
	815	b(1)		
3.2.1.3.2.4.0-1	AA-842	b(1)	3.2.1.1.1.7.0-1	FCR_A-817
3.2.1.3.3.8.1.0-1	AA-860	b(1)	3.2.1.2.2.1.0-1	FCR_A-717
3.2.1.3.5.0-1	AA-1172	b(3)	3.7.2.1.1.0-1	FCR_A-736
3.2.2.2.2.4.0-1	AA-1192	b(3)	3.2.2.2.2.1.0-1	FCR_A-724
3.7.3.2.2.0-1	AA-841	b(1)	3.2.1.1.1.3.0-2	FCR_A-738
6.5.2.0-1	AA-831	b(1)	6.6.13.0-1	FCR_A-739
6.5.2.0-2	AA-844	b(1)	6.6.13.0-2	FCR_A-740
6.5.2.0-3	AA-	b(1)	6.6.13.0-3	FCR_A-741

b(7)(e)

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REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
PROGRAM EXECUTIVE OFFICE, MISSILES AND SPACE  
5250 MARTIN ROAD  
REDSTONE ARSENAL, AL 35898-8000

April 9, 2010

Joint Land Attack Cruise Missile Defense  
Elevated Netted Sensor System Product Office

Mr. [REDACTED] b(6)  
Raytheon Systems Corporation  
350 Lowell Street  
Andover, Massachusetts 01810

Dear [REDACTED] b(6)

The following data item submitted for approval, via the noted transmittal letter under contract DASG60-98-C-0001, CLIN 0018, is approved.

JLENS Platform Prime Item Development Specification (PIDS) (Rev G)  
(CDRL Repository Folder\SDD\CDRL B009\047 Platform PIDS Rev G)

Transmittal Letter, Date: 10-JLSDD-0797, 11 March 2010

This letter does not constitute or authorize a change to the contract terms and conditions or to the negotiated contract price.

The JLENS Product Office point of contact for this action is [REDACTED] b(6)

[REDACTED] For Configuration Management issues, contact [REDACTED] b(6)

Sincerely

[REDACTED] b(6)

JLENS Technical Monitor  
JLENS Product Office



JOINT LAND ATTACK CRUISE MISSILE DEFENSE ELEVATED NETTED  
SENSOR SYSTEM (JLENS)  
PLATFORM PRIME ITEM DEVELOPMENT SPECIFICATION

Raytheon Contract No. DASG60-98-C-0001 CLIN00018 B009

**b(7)(c)**

CAGE CODE: 49956  
DOCUMENT NUMBER: H389191 Rev G

Prepared by:  
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## 1 (U) Scope

### 1.1 (U) Description

(U) This Prime Item Development Specification (PIDS) defines the requirements for the Joint Land Attack cruise Missile Defense Elevated Netted Sensor System (JLENS) Platform Prime Item (PI) developed under JLENS. This PIDS defines the requirements and operating environment for the JLENS Platform. The scope of this PIDS covers the performance requirements and design constraints of the JLENS Platform.

### 1.2 (U) Document Overview

(U) This document describes the performance, design, and verification requirements for the JLENS Platform. The document may be used in conjunction with the Critical Item Development Specifications (CIDSs) that describe in more detail lower level Platform Subsystem elements.

(U) This Platform PIDS does not define the performance requirements for the radar payloads, the Communications Subsystem (CS) or for the Airborne Fiber Optic Interface (AFOI). The Platform is only responsible for providing the accommodations (e.g., space, mounting point, prime power) for payload equipment and to safely carry the subsystems aloft.

(U) The Requirements Traceability and Verification Matrix (RTVM) cross references each applicable System requirement with the Platform PIDS paragraph. The RTVM also provides a verification methodology for each of the applicable system requirements. The RTVM is found in Section 4.

### 1.3 (U) Document Organization

(U) This document presents a requirement flowdown of performance specifications. The flowdown is parsed to the Aerostat, Tether, Mobile Mooring Station (MMS), Ground Support Equipment (GSE), and Software components. Section 3.7 of this document is divided into sections corresponding to these Subsystems.

## 2 (U) Applicable Documents

### 2.1 (U) General

(U) The documents listed in this section are specified in Sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents in Sections 3, 4, or 5 of this specification, whether or not they are listed.

### 2.2 (U) Government Documents

#### 2.2.1 (U) Specifications, Standards and Handbooks

(U) The following Government specifications, standards, and handbooks of the exact revision level shown form a part of this document to the extent specified herein.

MIL-HDBK-419A, Grounding, Bonding and Shielding for Electronics Equipment and Facilities, 29 December 1987

MIL-HDBK-454A, General Guidelines for Electronic Equipment, 03 November 2000

MIL-STD-129P, Military Marking for Shipment and Storage, 15 December 2002

MIL-STD-130L, Identification marking of U.S. Military Property, 20 December 2004

MIL-STD-461E, Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment, 20 August 1999

MIL-STD-464A, Electromagnetic Environmental Effects, Requirements for Systems, 19 December 2002

MIL-STD-810F, Environmental Engineering Considerations and Laboratory Tests, 01 January 2000

MIL-STD-882D, Standard Practice for System Safety, 10 February 2000

MIL-STD-1366D, Department of Defense Interface Standard for Transportability Criteria, 18 December 1998

MIL-STD-1472F, Human Engineering, 23 August 1999

MIL-STD-1474D, Noise Limits, 12 February 1997

## 2.2.2 (U) Other Government Documents, Drawings and Publications

(U) The following other Government documents, drawings, and publications of the exact revision level shown form a part of this document to the extent specified herein.

29CFR1910.10, Occupational Safety and Health Standards, Air Contaminants, 01 July 2003

JTA 4.0, Joint Technical Architecture 4.0, 17 July 2002

TAFIM 3.0, Technical Architecture Framework for Information Management (TAFIM) Standard, Version 3.0, 30 April 1996

DII/COE Version 4, Defense Information Infrastructure Common Operating Environment (DIICOE) Standard, 21 June 2002

SSS Handbook, Joint Services Software Safety Committee Handbook, December 1999

Field Manual (FM) 3-5, NBC Decontamination, 28 July 2000

## 2.3 (U) Non-Government Publications

H362980, "Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) System Specification, Rev. D (S/NF)", 13 November 2006

H350028, "JLENS System Safety Program Plan (SSPP)", 08 September 2004

438A95, Rev B, TCOM Design and Workmanship Standard, 16 May 2000

ASTM-D-3951-90, Standard Practice for Commercial Packaging, no date

ISO 3864-1, Graphical Symbols - Safety Colors and Safety Signs, 2002

ISO-9000 / AS9100, Quality Management System, no date

IEEE C95.1-1991, Standards for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 1991

NFPA-780, Standard for the Installation of Lightning Protection Systems, 2004

ANSI-Z535.4, American National Standard for Product Safety Signs and Labels, 2002

## 2.4 (U) Order of Precedence

(U) In the event of a conflict between the text of this document and the references cited herein, the text of the JLENS Performance Specification (MIS-PRF-55628) takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

## 3 (U) Requirements

### 3.1 (U) Platform Definition

#### 3.1.1 (U) Platform Description

(U) The JLENS System, an "Orbit" is comprised of two (2) 74M class aerostat platforms, two elevated sensors - one (1) Surveillance Radar (SuR) and one (1) Fire Control Radar (FCR), and two (2) Communication and Processing Groups (CPGs) each composed of a communications payload and ground CPG. The first Aerostat elevates a surveillance radar which includes Identification Friend or Foe (IFF) and a communications payload. The second aerostat elevates a fire control radar payload which includes an IFF and a communications payload. The Platform (PL), SuR, FCR and CPG are each considered to be Prime Items (PI). A sensor payload, communications payload, platform, and ground CPG can be configured into either a surveillance system or a fire control system depending on the sensor payload. The Platform, CPG communications payloads, and portions of the ground CPG are the same for both systems. An orbit is defined as a system of systems which is composed of both the surveillance and fire control systems.

b(3)

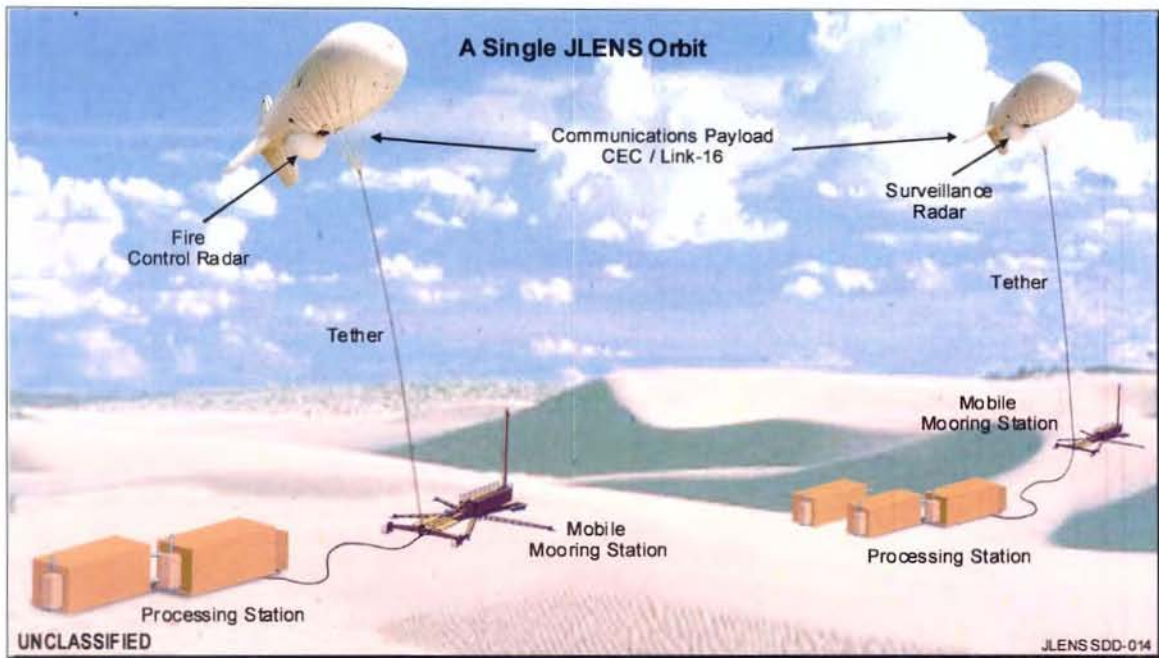


FIGURE 1. (U) JLENS Orbit

(U) The complete JLENS Orbit contains four PIs:

- a. Platform (PL),
- b. Surveillance Radar (SuR),
- c. Fire Control Radar (FCR) , and
- d. Communications and Processing Group (CPG).

(U) A JLENS Orbit Block Diagram depicting basic interactions between these PIs is shown in Figure 2.



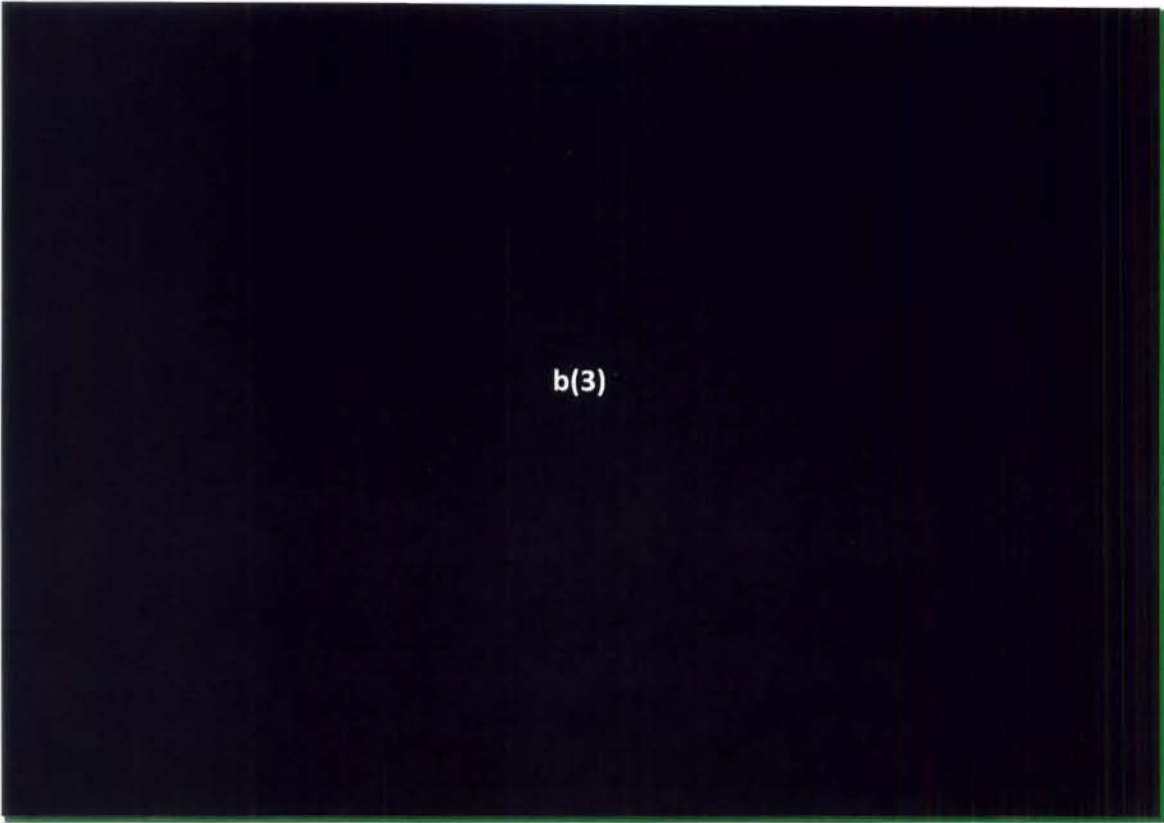
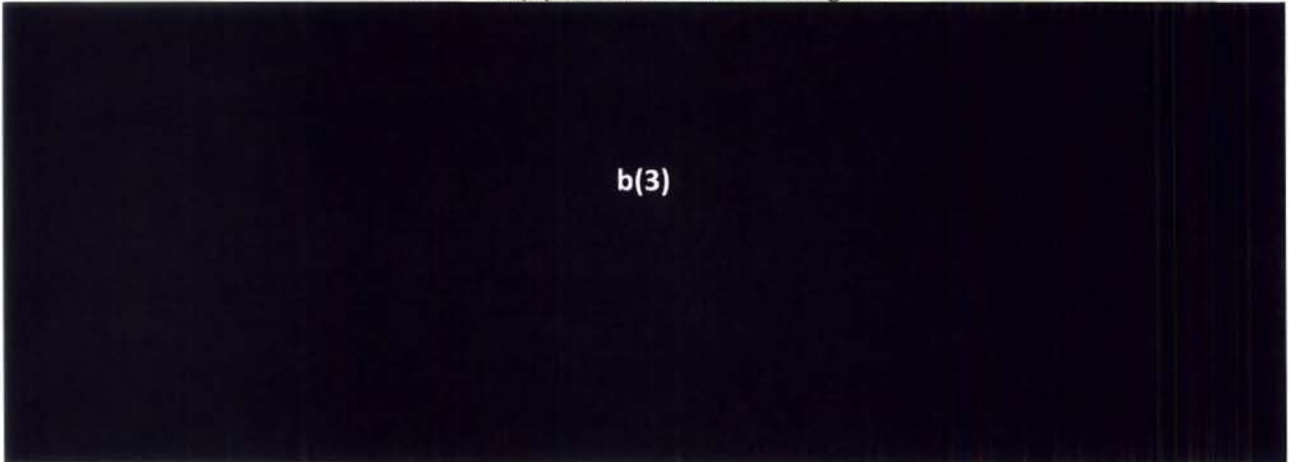


FIGURE 2. (U) JLENS Orbit block diagram



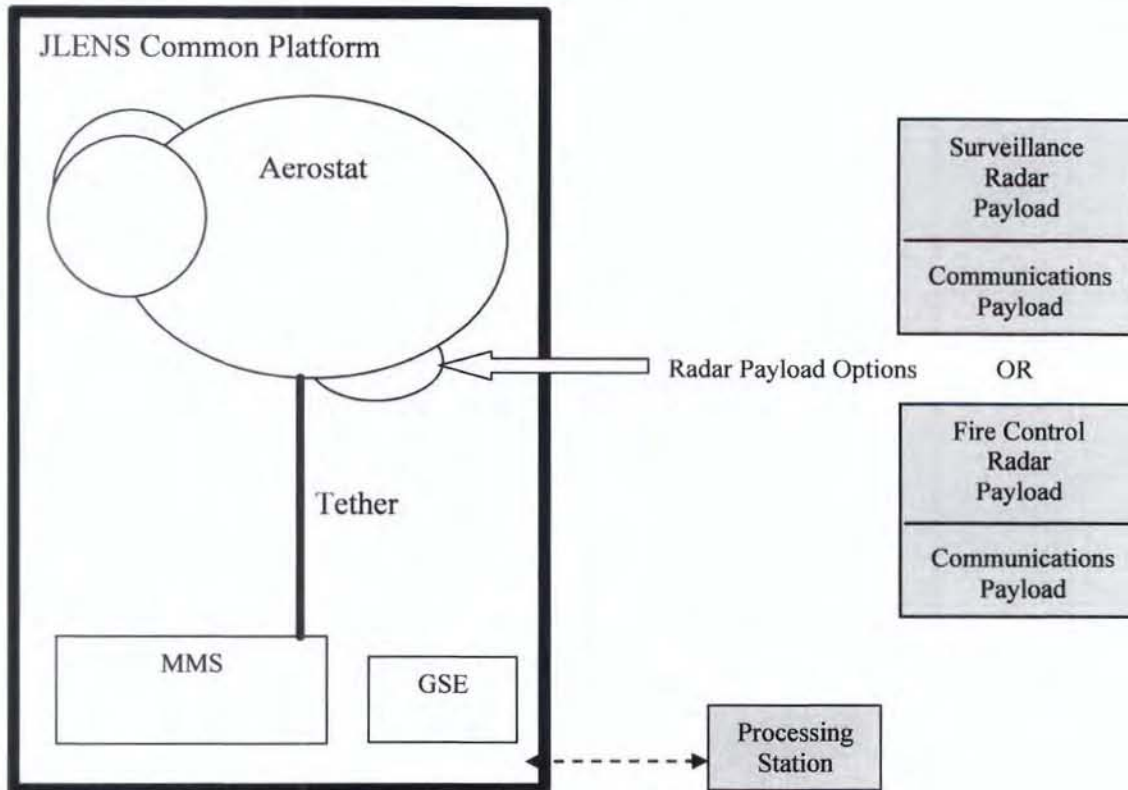


FIGURE 3. (U) JLENS Platform

(U) The Platform provides the following major functions:

- a. Payload Systems Attachment and Support,
- b. Launch, Operation, Retrieval and Mooring,
- c. Electric Power Transmission and Distribution,
- d. Lightning Protection,
- e. Platform Monitoring and Control,

**b(3)**

- g. Maintenance Support

(U) This Prime Item Development Specification describes the single Platform design that will be used to support either of the system payload configurations.

### 3.1.1.1 (U) Major Components List

(U) Table I lists major hardware (HW) components and software (SW) components of the Platform. The components are identified with the functions that are supported. This is not a complete list of components. Additional detail is provided in the Configuration Item Development Specifications (CIDSs) and Interface Control Documents (ICDs).

TABLE I. (U) Platform Components

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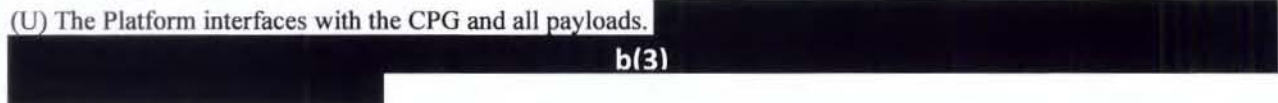


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**3.1.2 (U) Platform Interfaces**

(U) The Platform interfaces with the CPG and all payloads.



b(3)

**3.1.3 (U) Threat**

(U) The Platform responds to no specific threat. It is a major part of the system infrastructure and the means to raise payloads to altitude so they are able to perform their intended functions.

**3.1.4 (U) States and Modes**

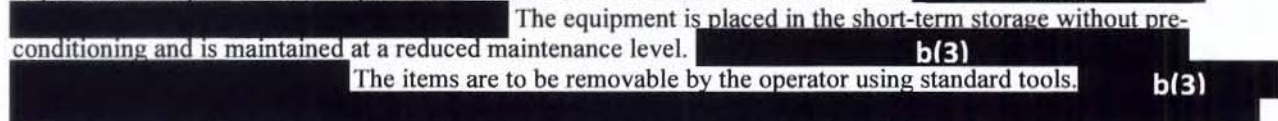
(U) The Platform may transition between these states and their modes.

**3.1.4.1 (U) Storage State**

(U) The Storage State ensures the availability of the system after long or short periods of storage. It consists of the short-term and long-term storage modes. The JLENS Orbit normally transitions into and out of the storage state from/to the movement state. This state is a non-operational state.

**3.1.4.1.1 (U) Short-Term Storage Mode**

(U) The system equipment is placed in short-term storage mode with the owning organization when mission requirements require the unit to perform functions other than their normal missions.



b(3)

The equipment is placed in the short-term storage without pre-conditioning and is maintained at a reduced maintenance level.

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The items are to be removable by the operator using standard tools.

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The equipment is returned to operations in accordance with the appropriate technical manuals and guidance documents. Transition from this mode to the operational state is within the emplacement timeline defined in the requirements. This mode is a non-operational mode.

### 3.1.4.1.2 (U) Long-Term Storage Mode

(U) The system equipment is placed in long-term storage mode when mission requirements do not require the equipment for both peacetime and wartime operations. The equipment may remain stored through the duration of its service life. The system equipment is prepared and pre-conditioned for transition into long-term storage in accordance with the appropriate technical data. [REDACTED] b(3)

[REDACTED] The equipment is returned to operations in accordance with the appropriate technical data and guidance documents. This mode is a non-operational mode.

### 3.1.4.2 (U) Movement State

(U) The movement state consists of the transport mode for intra-theater and inter-theater shipment of the JLENS System using non-organic means. The march-order mode for the movement in-theater is by organic means. This state is a non-operational state.

#### 3.1.4.2.1 (U) Transport Mode

(U) In the transport mode, the equipment is placed into an air, ground, rail, or water transport configuration. All JLENS equipment is transportable by C-17 and C-5 fixed-wing military aircraft for strategic airlift, sealift, and/or rail. The JLENS system is transportable by C-130 intra-theater with the exception of the Mobile Mooring Station and other specified ground support equipment. Transitions to the transport mode are conducted using organic equipment or the transportation unit's special handling equipment. It remains in the transport configuration until it arrives at its final destination or is prepared for road march. This mode is a non-operational mode.

#### 3.1.4.2.2 (U) March Order Mode

(U) The JLENS system transitions to the march-order mode when required to move by organic means. A JLENS unit is mobile with sufficient vehicles, personnel, supplies, and both system peculiar and common equipment to displace the entire unit in one move. JLENS must be capable of movement on primary and secondary roads, as well as movement off-road, see 6.2. It must be capable of limited off-road movement to reach pre-selected emplacement sites over cross-country terrain and unimproved roads. The system is capable of relocating on public roads and highways, including those having unimproved road surfaces (such as gravel or hard-packed dirt), to support emplacement at prepared sites. This mode is a non-operational mode.

### 3.1.4.3 (U) Deployment State

#### 3.1.4.3.1 (U) Emplace Mode

(U) The emplace mode includes the physical positioning, aerostat inflation, and physical integration of the system. The system equipment transitions to the emplace mode upon arrival at its designated location. After physical positioning and integration, the system can begin initialization of individual prime items. Initialization is the power-up sequence for the individual prime items that ends with the system ready to begin configuration for an assigned mission. This mode is non-operational.

#### 3.1.4.3.2 (U) Displace Mode

(U) The displace mode provides the capabilities to transition system equipment to march order configurations prior to entering the movement state. The assigned crews shut down, disassemble, and stow all deployed equipment in preparation for movement. This mode is a non-operational mode.

### 3.1.4.4 (U) Operations State

(U) The operations state begins with the system being configured for a mission and continues through all tactical or training operations. The operations state also includes maintenance and sustainment activities. This state is an operational state.

#### **3.1.4.4.1 (U) Configuration Mode**

(U) The configuration mode provides the ability for the operators to build and implement a mission profile, see 6.2. The mission profile contains the performance parameters for the radar and communications systems to meet the tasks in the assigned mission. Operator system interfaces are provided for monitoring external stimuli. Voice and data communications, both external and internal to the system, are provided to receive commands, provide status, and exchange data. The configuration mode can be entered as many times as is necessary during operations to change the performance parameters due to mission assignment change. The moored configuration is part of the configuration mode. This mode is an operational mode.

#### **3.1.4.4.2 (U) Tactical Mode**

(U) The tactical mode provides the capability to perform all assigned mission operations to include: surveillance, detection, tracking and discrimination, threat evaluation, and engagement support. The system operates in the tactical mode concurrent with the configuration mode. In this mode, the radar may or may not be radiating, depending on desired operations. The JLENS System (Surveillance or Fire Control) transitions to the tactical mode, through the configuration mode, when emplacement functions are completed. The JLENS System (Surveillance or Fire Control) transitions out of the tactical mode when ordered to stand down. The JLENS System (Surveillance or Fire Control) can only be in the tactical state during operational environmental conditions. This mode is an operational mode.

#### **3.1.4.4.3 (U) Training Mode**

(U) The training mode provides the capabilities to perform operator training at a number of levels including operator/maintainer, crew, unit and netted. The training mode allows the operators to maintain their proficiency in tactical decision making, console operations, and maintenance functions. The system operates in the training mode concurrently with the configuration mode and provides for a fast transition to the tactical mode. This mode is an operational mode. The four levels of training are:

##### **3.1.4.4.3.1 (U) Operator/Maintainer Training**

(U) Operator/Maintainer training for the soldier provides hands-on practice in the use of the hardware, software applications, and fault detection and isolation for individual pieces of equipment. Operator task training reinforces skills taught in training institutions, sustains skill previously learned, and is an invaluable tool to teach advanced skills. This mode is an operational mode.

##### **3.1.4.4.3.2 (U) Crew Training**

(U) Crew training is a progressive set of individual tasks that integrate the actions of the various system crews. It provides for conduct of crew battle drills for system/prime item emplacement, initialization, and integration. Crew training provides for training on system tactics, techniques, and procedures. This mode is an operational mode.

##### **3.1.4.4.3.3 (U) Unit Training**

(U) Unit training is progressive set of individual and crew battle drills that link the prime items during system integration and culminates with simulated engagement and force operations. Unit training is performed using tactical software and hardware communications means. This mode is an operational mode.

##### **3.1.4.4.3.4 (U) Netted Training**

(U) During netted training, the JLENS system participates in a common training scenario, coordinated in near real-time, with other JLENS batteries and/or battalion, lower-tier air defense units, higher-echelon headquarters, and other combined arms and joint exercise participants. The JLENS battery participates in netted training exercises through interface with distributed interactive compliant simulations. This mode is an operational mode.

#### **3.1.4.4.4 (U) Operations Sustainment Mode**

(U) The operations sustainment mode functions allow the system to sustain continuous operations for extended periods of time. It includes refueling, retraining, and re-supplying operations. This mode can be concurrent with the other modes in the Operations State. This mode is an operational mode.

### **3.1.4.5 (U) Maintenance State**

#### **3.1.4.5.1 (U) Corrective Maintenance Mode**

(U) The corrective maintenance mode is for repair of system failures resulting in unscheduled maintenance actions. Repair is defined as the restoration or replacement of parts to return the end items to an operational condition and maintain efficient operations. This mode is a non-operational mode.

#### **3.1.4.5.2 (U) Preventive Maintenance Mode**

(U) The preventive maintenance mode allows the JLENS crew to perform scheduled PMCS designed to extend and ensure the operational readiness of the system. Preventive maintenance tasks may be conducted on individual prime items on a non-interference basis with system operation as long as safety policies and procedures allow. Transition to and from the preventive maintenance mode can occur from the storage, transportation, or operation states. This can be either an operational or non-operational mode.

## **3.2 (U) Platform Characteristics**

### **3.2.1 (U) Platform Performance**

(U) The functional performance requirements for the Platform are defined in this section. The major hardware and software components associated with these functions are defined in 3.1.

(U) The requirements stated below apply to each element within the Platform as they are required to support the State and Mode configurations defined in 3.1.4. The specified functions will support either of the radar payloads.

#### **3.2.1.1 (U) Launch, Operation, Retrieval and Mooring**

(U) The Platform performs the functions of launching, controlling on-station positioning, retrieval and mooring of the Aerostat element.

(U) The functions of Launch, Operation and Retrieval are performed while the system is in the Operations State. The ability to have the Aerostat moored on the MMS is required in the Operations State. The applicability to moor the Aerostat in the Deployment State is determined by the mode. There is no mooring requirement in the Storage and Movement States. The mooring capability in the Emplacement and Displacement Modes support the timeline of the assembly / disassembly activities in those Modes.

(U) The Platform shall operate as a land-based unit from a prepared site.

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#### **3.2.1.2 (U) Lightning Protection**

(U) The Platform shall provide protection from the effects of lightning strikes. The lightning protection is needed while airborne or moored.

(U) The Platform shall conduct currents due to direct and indirect lightning strikes to a dedicated ground system using MIL-HDBK-419A and NFPA-780 as guidance.

(U) The Platform shall conduct Lightning Electromagnetic Pulse (LEMP)-induced currents to a dedicated ground system using MIL-HDBK-419A and NFPA-780 as guidance.

#### **3.2.1.3 (U) Platform Monitoring and Control**

(U) The Platform incorporates the real-time remote monitoring and control systems to meet the requirements detailed in the Critical Item Development Specifications. The Flight Director receives telemetry to enable control of



critical areas of the Platform. Specific hardware items and functions that will require monitoring and/or control are identified in lower level specifications.

(U) Monitoring and control are provided for:

- a. Aerostat - pressurization, power, attitude and environment,
- b. Tether - tether tension,
- c. Mobile Mooring Station - power, operations modes and intercom, and
- d. Ground Support Equipment - Power Conversion Unit, Power Distribution, intercom, environmental sensors, atmospheric static discharge, and long range storm cells.

(U) At the Flight Director's station, the operator shall have monitor and control capability for the Aerostat.

(U) At the Flight Director's station, the operator shall have monitor capability for the MMS.

(U) The Platform shall provide Monitor and Control Interfaces between the GSE items and the Flight Director's station in the CCS.

(U) The Platform shall provide intercom interfaces between the MMS, GSE items and the CCS.

(U) The Platform shall provide weather instrumentation; weather radar, lightning location system and ground weather station.

#### **3.2.1.4 (U) Payload Systems Attachment and Support**

(U) The Aerostat component of the Platform provides for the attachment of the radar payloads, their communications interface with the ground and any other airborne payload support equipment. Details of the payload configurations and options are in the Aerostat Critical Item Development Specification. Also specified are the payload interfaces and operational requirements. Airborne subsystems of the Platform interface with and support the operations of the airborne payload.

(U) The Platform shall provide modular connectivity points, to accept alternative payloads. These interfaces will be defined and documented in the System Interface Control Document (ICD). If alternate payloads replace the main sensor, the interfaces, weight distribution and form factor must be maintained.

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#### **3.2.1.5 (U) Electric Power Generation, Transmission and Distribution**

(U) The Platform will be required to accept local power, commercial power and power from GFE sources, as well as provide conditioning of it to the required frequencies and voltages. The power will then be distributed from the post-conditioned source to the various JLENS System elements. Specifications for power requirements of the various GFE components are detailed in the Ground Support Equipment and Aerostat Critical Item Development Specifications. Power distribution will also be required to support the other Platform equipment. The intra-Platform requirements are also detailed in the appropriate Critical Item Development Specifications.

#### **3.2.1.6 (U) Data Link**

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#### **3.2.1.7 (U) Maintenance Support**

(U) Maintenance support of Platform items is provided to ensure meeting the mission operational and reliability requirements.

(U) Using MIL-HDBK-454A section titled General Guidelines, Power and Ground, as guidance, the Platform MMS shall provide an electrical outlet for an extension cord that is used to supply power inside the windscreen for maintenance and emplacement.

### **3.2.2 (U) System Interface Requirements**

(U) The Platform interfaces with both radar payloads and the ground CPG. Mission priorities and long term planning are determined by Mission Operations. The Platform provides health and status data to the ground CPG.

(U) At the Platform level, interfaces are divided into two categories:

(U) External Interfaces are the interfaces between the Platform and other JLENS Prime Items as well as with GFE and with the system physical location interfaces (site conditions). These interfaces are documented and delivered in the Platform ICD and in the JLENS System ICD.

(U) Internal Interfaces are the interfaces between the major components within the Platform. These interfaces are contained in various non-deliverable Platform documents.

(U) The paragraphs of this Platform PIDS section predominantly address the functional external interfaces.

#### **3.2.2.1 (U) Platform Internal Interfaces**

(U) The top-level internal functional interfaces of the Platform are covered in other Platform subsystem documents. Details for the internal interfaces will be derived from individual Critical Item Development Specification (CIDS) and other detail design documents.

#### **3.2.2.2 (U) Platform External Interfaces**

(U) The Platform external interfaces are shown in Figure 5 as the connections between the Platform and other JLENS system elements. A more detailed view follows in Figure 6 wherein the interfaces to the sub-elements of the Platform are depicted. The external interfaces for the Platform are detailed as shown in Table II.



**FIGURE 5. (U) Platform External Interfaces**



**FIGURE 6. (U) Detailed Platform External Interfaces**

TABLE II. (U) Platform External Interfaces



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**3.2.2.3 (U) Interface Definitions**

**3.2.2.3.1 (U) External Interfaces**

(U) External interfaces are defined as external to the Platform - either prime item to prime item or prime item to operating environment. For external interface details, consult the System ICD.

**3.2.2.3.1.1 (U) Aerostat**

**3.2.2.3.1.1.1 (U) Aerostat Physical Interfaces**

(U) To support the distributed radar payload when configured in the Operations State, the Aerostat shall have physical (mechanical) interfaces for attachment of and support of radar payloads.

(U) To support the distributed communications payload when configured in the Operations State, the Aerostat shall have a physical (mechanical) interface to the airborne CPG communications payload for attachment and support.

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**3.2.2.3.1.2 (U) Tether**

**3.2.2.3.1.2.1 (U) Tether Physical Interfaces**

(U) The Tether has no external physical interfaces.

**3.2.2.3.1.2.2 (U) Tether Electrical Interfaces**

(U) The Tether has no external electrical interfaces.

**3.2.2.3.1.2.3 (U) Tether Grounding Interfaces**

(U) The Tether has no external grounding interfaces.

**3.2.2.3.1.3 (U) Mobile Mooring Station (MMS)**

**3.2.2.3.1.3.1 (U) MMS Physical Interfaces**

(U) When the Aerostat is moored, the MMS will have the capability to supply supplemental cooling to the FCR and SuR Heat Exchange Units, if required, for radar payload cooling during high temperature conditions. For further details, refer to the System IRS.

(U) The MMS shall have a physical interface with the earth surface of the GFE prepared site.

**3.2.2.3.1.3.2 (U) MMS Electrical Interfaces**

(U) The MMS has no external electrical interfaces.

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**3.2.2.3.1.4 (U) Ground Support Equipment (GSE)**

**3.2.2.3.1.4.1 (U) GSE Physical Interfaces**

(U) The Platform GSE shall have physical (mechanical) interfaces with the ground CPG for mounting Platform equipment.

(U) The Platform GSE shall have physical (mechanical) interfaces with the ground CPG for mounting command destruct antenna equipment.

**3.2.2.3.1.4.2**

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[Redacted]  
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**3.2.2.3.1.4.3**

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[Redacted]  
b(3)

**3.2.2.3.1.4.4**

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[Redacted]  
b(3)

**3.2.2.3.2**

b(3)

[Redacted]  
b(3)

**3.2.2.3.2.1 (U) Aerostat**

**3.2.2.3.2.1.1 (U) Aerostat Physical Interfaces**

(U) The Aerostat shall have a physical interface with the Tether.

(U) The Aerostat shall have a physical interface with the GSE for helium supply.

**3.2.2.3.2.1.2**

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[Redacted]  
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**3.2.2.3.2.1.3**

b(3)

[Redacted]  
b(3)

**3.2.2.3.2.1.4**

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[Redacted]  
b(3)

**3.2.2.3.2.2 (U) Tether**

**3.2.2.3.2.2.1 (U) Tether Physical Interfaces**

(U) The Tether shall have a physical interface with the Aerostat.

(U) The Tether shall have a physical interface with the MMS.

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**3.2.2.3.2.3 (U) Mobile Mooring Station (MMS)**

**3.2.2.3.2.3.1 (U) MMS Physical Interfaces**

(U) The MMS shall have a physical interface with the Tether.

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3.2.2.3.2.3.4

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**3.2.2.3.2.4.1 (U) GSE Physical Interfaces**

(U) The GSE shall have a physical interface with the Aerostat for helium supply.

3.2.2.3.2.4.2

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3.2.2.3.2.4.3

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3.2.2.3.2.4.4

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**3.2.3 (U) Physical Characteristics**

(U) The Platform is defined to consist of the following four Critical Items:

- a. Aerostat,
- b. Mobile Mooring Station (MMS),
- c. Tether, and
- d. Ground Support Equipment (GSE).

(U) The Platform shall be interchangeable for both the SuR and the Fire Control Radar payload configurations. Figure 5 illustrates the top-level relationship of the Platform, the radar payload options, and the ground CPG.

### 3.2.4 (U) Subsystem Quality Factors

#### 3.2.4.1 (U) Reliability

(U) The Platform shall maximize operational time considering the following factors contributing to downtime:

- a. Weather,
- b. Vulnerability to attack,
- c. Reliability,
- d. Maintainability,
- e. Availability, and
- f. Ease of movement.

(U) The Platform shall have mission critical single point failures identified.

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#### 3.2.4.2 (U) Maintainability

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### 3.2.5 (U) Environmental Conditions

(U) In the context of the Aerostat, "survival" means that when exposed to any single threatening event, the Aerostat can be recovered from flight albeit repairs to the structure and/or rigging may be needed before entering a new flight. Furthermore, any resulting damage can be repaired in the field without returning to the factory.

(U) In the context of the Platform components excluding the Aerostat, unless otherwise noted, "survive" means that when exposed to any single threatening event, the components may need repairs, which meet the Platform MTTR.

#### 3.2.5.1 (U) Natural Environments

(U) The Platform, including payloads, operate in the natural environments defined in this document, however, these requirements may not necessarily be met simultaneously. Reference MIL-STD-810F.

##### 3.2.5.1.1 (U) Wind

###### 3.2.5.1.1.1 (U) Operational Winds

(U) In the appropriate operational mode the Platform shall meet performance requirements while being subjected to steady state winds up to 73 km/hr with turbulence of 1.98 m/s rms (40 knots, 6.5 fps).

###### 3.2.5.1.1.2 (U) Non-Operational Winds

(U) In any non-deployment state the Platform shall survive an exposure to steady state winds of up to 185 km/hr (100 knots).

(U) While moored or at full altitude, but while non-operational, the Platform shall survive an exposure to steady state winds of up to 148 km/hr with turbulence of 3.05 m/s rms (80 knots, 10 fps).

##### 3.2.5.1.2 (U) Temperature

(U) In the appropriate operational mode, the Platform shall meet performance requirements during exposure to an ambient temperature range from -40°C to +49°C.

(U) After being brought to the appropriate operational mode, the Platform shall meet performance requirements following storage and transport exposure to an ambient temperature range from -46°C to +71 °C, with allowance of environmental kits and procedures for temperature extremes.

##### 3.2.5.1.3 (U) Humidity

(U) In the appropriate operational mode the Platform shall meet performance requirements during exposure to a relative humidity range from 3% to 100% non-condensing.

(U) The Platform, in an appropriate operational mode, shall meet all performance requirements after exposure to a relative humidity range from 3 to 100% non-condensing while in the deployment, storage and movement configurations.

##### 3.2.5.1.4 (U) Lightning

(U) The Platform shall survive a lightning current of at least 145 kA.

(U) The Platform shall include a mooring station sufficiently grounded to protect the operator and maintenance personnel during a lightning strike event.

(U) In the Operations State, Movement State, or Storage State the Platform ground equipment shall be protected from damage from direct and indirect lightning, including LEMP, in accordance with the lightning requirements of MIL-STD-464. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.

(U) In the Operations State the Platform airborne equipment shall survive direct or indirect 145 kA maximum lightning strikes, including LEMP, to the Aerostat lightning cage. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.

(U) The Platform shall return to the state, mode and condition existing prior to a near lightning strike after a controlled restart. By definition, a nearby lightning strike does not cause equipment damage. A controlled restart is according to procedures.

### 3.2.5.1.5 (U) Sand and Dust

(U) The Platform, in the appropriate operational mode, shall meet performance requirements (degraded sensor performance during operation is permitted) when exposed to blowing dust of up to 149  $\mu\text{m}$  diameter in concentrations of up to  $10 \pm 7 \text{ g/m}^3$  ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).

(U) The Platform, in the appropriate operational mode, shall meet performance requirements (degraded sensor performance during operation is permitted) when surface equipment is exposed to blowing sand for diameters in the range of 150 to 850  $\mu\text{m}$  diameter in concentrations of up to  $1.1 \pm 0.3 \text{ g/m}^3$  ( $0.033 \pm 0.0075 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).

(U) The Platform, in the appropriate operational mode, shall meet performance requirements (degraded sensor performance during operation is permitted) when airborne equipment is exposed to blowing sand for diameters in the range of 150 to 850  $\mu\text{m}$  diameter in concentrations of up to  $0.18 -0.0/+0.2 \text{ g/m}^3$  ( $0.005 -0.0/+0.0057 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr). Note: for the Tactical Mode, blowing sand does not reach operational altitude.

(U) The Platform, after assembly into the appropriate operational mode, shall meet performance requirements following exposure, while in the storage and movement configurations, to blowing dust of up to 149  $\mu\text{m}$  diameter in concentrations of up to  $10 \pm 7 \text{ g/m}^3$  ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).

(U) The Platform, after assembly into the appropriate operational mode, shall meet performance requirements following exposure, while in the storage and movement configurations, to blowing sand for diameters in the range of 150 to 850  $\mu\text{m}$  diameter in concentrations of up to  $2.2 \pm 0.5 \text{ g/m}^3$  ( $0.06 \pm 0.015 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).

### 3.2.5.1.6 (U) Fungus

(U) The Platform shall be either composed of materials that inhibit the growth of fungus or composed of materials which are protected from environments that would encourage fungus growth.

### 3.2.5.1.7 (U) Salt Fog

(U) After being brought to the appropriate operational mode the Platform shall meet performance requirements while exposed to a salt atmosphere in sea locations and coastal regions. For information on salt atmospheres refer to the System Specification, Appendix B.

(U) After being brought to the appropriate operational mode, the Platform shall meet performance requirements following non-operational mode exposure to a salt atmosphere in sea locations and coastal regions.

(U) After being brought to the appropriate operational mode, the Platform shall meet performance requirements after transport mode configuration exposure to a salt atmosphere during ocean transportation.

### 3.2.5.1.8 (U) Precipitation

#### 3.2.5.1.8.1 (U) Snow

(U) After being brought to the appropriate operational mode the Platform shall meet performance requirements during exposure to not greater than 10.2 cm (4 inches) of snow accumulation on ground equipment surfaces where the snow has a density of 0.3 gram per cubic centimeter. Ground equipment does not include the Aerostat or Tether.

(U) While in the storage or transport configuration, the Platform shall be protected from damage during exposure to snow accumulation of up to 15.2 cm (6 inches), with a density of 0.3 gram per cubic centimeter, in 12 hours.

(U) The Platform, in the appropriate operational mode, shall meet all performance requirements during a snow falling rate of up to 2.54 cm/hour (1 inch/hour). Note: The falling snow does not accumulate on the aerostat.

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**3.2.5.1.8.3 (U) Hail**

(U) While in the appropriate operational mode, the Platform shall survive exposure to hail with size not greater than one-half (1/2) inch in diameter.

(U) While in the storage or transport configuration, the Platform shall be protected from damage during exposure to hail with size not greater than one-half (1/2) inch in diameter.

**3.2.5.1.9 (U) Electrostatic Discharge (ESD)**

(U) The Platform shall preclude electrostatic discharge from degrading system performance, to include precipitation static electricity, at all operating altitudes and at maximum wind conditions.

(U) The Platform LRUs, except for GFE, shall meet performance requirements after its external surfaces are subjected to an electrostatic discharge of **b(3)** from a  $250 \pm 5\%$  picofarad source and  $500 \pm 5\%$  ohm series resistance.

(U) Note: ESD discharges directly to connector pins are not included in this requirement.

(U) The Platform ground equipment shall have grounds provided using NFPA-780 as guidance.

**3.2.5.2 (U) Induced Environments**

**3.2.5.2.1 (U) Nuclear, Biological and Chemical**

(U) Nuclear contamination in this context refers to late time effects from fallout and prompt neutrons. The radiation levels are too low to be damaging to personnel and equipment.

(U) Platform items which are transported within NBC protective ISO containers are protected by the containers.

Transportation enclosures which are non-GFE and delivered as part of the Platform shall be able to withstand contamination/decontamination described herein such that it protects the equipment contained within the enclosure.

(U) Platform items not transported within NBC protective ISO containers shall withstand contamination/decontamination as defined below while in the transport configuration.

(U) The Platform's equipment enclosures which are mounted on the Aerostat, exterior to the windscreen, and have the purpose to protect the equipment interior from NBC shall protect those internal equipments from contamination caused by NBC event as described herein.

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(U) All exterior surfaces of Platform ground based equipment and the exterior surfaces of Platform airborne electronic enclosures external to both the windscreen and the aerostat excluding support equipment shall be painted with Chemical Agent Resistant Coating (CARC), in accordance with H372287, with exterior topcoat 383 Green (color 34094 of Fed-Std-595).

(U) All Platform airborne frames and racks shall be painted with Chemical Agent Resistant Coating (CARC), in accordance with H372287, with exterior topcoat white (color 37875 of Fed-Std-595).

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**3.2.5.2.2 (U) Vibration**

(U) In the Tactical Mode of the Operational State, the Platform shall meet performance requirements while being subjected to vibration levels caused by operation.

(U) After being brought to the appropriate operational mode, the Platform shall meet performance requirements following exposure to vibration levels caused by normal transportation, maintenance, or storage. Transportation includes, air, ground (both road and **b(3)**) and sea.

**3.2.5.2.3 (U) Shock**

(U) While in an operational mode, the Platform shall meet performance requirements applicable to that operational mode, while being subjected to shock levels caused during normal operation of that mode.

(U) The Platform LRUs shall meet performance requirements after the LRUs are dropped, with the drop height dependent on the LRU packaged weight as:

Package Gross Weight, kg (lb)	Design Drop Height, cm (in)
0 to 9.1 (0 to 20)	76 (30)
9.2 to 18.2 (21 to 40)	66 (26)
18.3 to 27.2 (41 to 60)	61 (24)
27.4 to 36.3 (61 to 80)	46 (18)
36.4 to 45.4 (81 to 100)	38 (15)
45.5 to 68.1 (101 to 150)	31 (12)
68.2 to 113.5 (151 to 250)	26 (10)
113.6 or greater (251 or greater)	20 (8)

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while packaged in their transit containers according to the applicable technical documentation.

(U) After assembly and while in the appropriate operational mode, the Platform fragile components (see 6.2), excluding the MMS, Helium containers, and any hardware not packaged in ISO containers, shall meet performance requirements after having been subjected, while in the transport configuration, to a **b(3)**

**b(3)**

(U) After assembly and while in the appropriate operational mode, Platform non-fragile components (see 6.2), excluding the MMS, Helium containers, and any hardware not packaged in ISO containers, shall meet performance requirements after having been subjected, while in the transport configuration, to a [REDACTED] b(3)

(U) After assembly and while in the appropriate operational mode, the Platform, excluding the MMS, Helium containers, and any hardware not packaged in ISO containers, shall meet performance requirements after being subjected, while in the transport configuration, to a [REDACTED] b(3)

(U) Each Platform unique transportation fixture onto which fragile hardware is mounted shall be marked with special handling procedures using MIL-STD-129P as guidance.

(U) The exterior of the shipping containers containing fragile hardware shall be marked with special handling procedures using MIL-STD-129P as guidance.

(U) The Platform ISO shipping containers which contain fragile equipment shall include mechanical shock indicators.

**3.2.5.2.4 (U) Electromagnetic**

(U) The Platform shall include system equipment, both airborne and ground that is hardened to withstand electromagnetic radiation in accordance with the intra-system EMC and the inter system EMC requirements of MIL-STD-464A as a guideline. Typical environment is shown in Table III.

**TABLE III. (U) Typical battlefield electromagnetic environment**

FREQUENCY (MHz)	FIELD STRENGTH (V/m)
1 - 800	50
800 - 11,000	20
11,000 - 20,000	10
20,000 - 40,000	5
This environment encompasses Own-Force (Land, Sea, and Air), Non-Hostile Emitters (Neutrals), and ambient sources (such as broadcast stations, etc.)	
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(U) The Platform shall control extraneous emissions using as a guide MIL-STD-461E, Table V, Ground Army.

(U) The Platform shall incorporate an emission control (EMCON) capability which reduces radiated energy in compliance with MIL-STD-464A, Section titled Emission control (EMCON), see Appendix H, which can be activated from within 2 seconds from the CCS of the CPG. [REDACTED] b(3)

[REDACTED] b(3)

[REDACTED] b(1)

### 3.2.6 (U) Transportation

(U) The Platform shall use standard military vehicles, shelters, and trailers unless the government approves justification for nonmilitary equipment.

(U) The Platform shall use standard military vehicles for ground transportation.

(U) The Platform shall use standard military vehicles for handling.

### 3.2.7 (U) Flexibility and Expansion

(U) No entry.

## 3.3 (U) Design and Construction

### 3.3.1 (U) Materials

(U) No entry.

### 3.3.2 (U) Nameplates and Product Marking

(U) The JLENS Orbit shall have equipment marked in accordance with MIL-STD-130L for unique identification with the following provisos and exceptions.

(U) Provisos to this requirement are:

a. Only hardware and software items with a unit acquisition cost NLT \$5,000.

b. All hardware items with a unit acquisition cost less than \$5,000 when they are serially managed, mission critical, or controlled inventory items.

(U) Exceptions to this requirement are as specified in MIL-STD-130L section titled Detailed Requirements subsection titled Exemptions:

a. "COTS items marked with commercial identification (firm name, logo, part number, etc.), and which present no identification difficulty may be exempt from additional marking requirements. This exemption extends to COTS items identified on a VICD."

b. "Parts within an assembly or a subassembly, that are not subject to removal, replacement, or repair or"

c. "When parts are deemed too small for the application of complete marking in accordance with MIL-STD-130L section titled Machine-readable information (MRI) marking, a logo or other abbreviated marking [will] be substituted for the design activity identification."

### 3.3.3 (U) Safety

#### 3.3.3.1 (U) General Safety Requirements

(U) The Platform shall be designed such that components containing hazardous materials from Class 1 ozone depleting substances and the EPA-17 list will only be utilized in compliance with the JLENS Hazardous Materials Management Plan (HMMP).

(U) NOTE: Appendix A of the JLENS System Specification contains the aforementioned lists.

(U) The Platform shall have no radioactive materials which are defined by the Nuclear Regulation Commission that have greater than 0.002 microcuries per gram or activity per item equals or exceeds 0.01 microcuries.

(U) Platform monitoring equipment shall provide warnings and alarms to identify critical conditions.

(U) Appropriate Platform MMS equipment shall use temperature measuring devices and over temperature devices to provide a warning for potential equipment damage due to overheating.

(U) The Platform Aerostat, GSE, and MMS subsystems shall power up into a safe state.

(U) Provided that power is restored within the life cycle of the emergency battery subsystem, the Platform shall survive without damage and return to operational performance upon the restoration of 400 Hz power. The batteries within the airborne emergency power subsystem may need to be replaced/replenished as required.

(U) The Platform shall utilize safety warning signs and labels which are compliant with ANSI Z535 (2002) American National Standard for Product Safety Signs and Labels.

(U) The Platform shall have a configuration that prevents equipment from tipping over or falling on personnel performing operations, maintenance, or training tasks.

- (U) The Platform shall have lift points that are clearly labeled.
- (U) The Platform shall have a combination of warning labels, procedures, guards, and safety devices to preclude contact with moving mechanical parts such as gears, fans, and belts during operation and maintenance.
- (U) Platform devices used to stop and secure movable parts shall have locking features.
- (U) Rechargeable batteries used in Platform hardware shall have enclosures as required to prevent the buildup of flammable gas.
- (U) The Platform MMS Machinery Enclosure shall have fire extinguishers, smoke alarms, and carbon monoxide detectors.
- (U) The Platform interlocks shall be self-resetting. A self-resetting interlock automatically resets the interlock to function normally upon closing the associated door, cover or plate.
- (U) The Platform interlocks shall be redundant. Redundant is defined as the use of multiple functionally similar components. The interlocks must be free of common mode failure.
- (U) The Platform shall use self-sealing connectors for coolant lines to reduce the likelihood of coolant leakage during Platform maintenance as appropriate.
- (U) The Platform shall have emergency lighting capability inside the MMS Machinery Enclosure upon power failure.
- (U) Over the expected life of the Platform, the design shall mitigate Catastrophic Hazards to a probability of occurrence of less than 1 in 1,000,000 using at least three barriers, one of which is a safety device.
- (U) Over the expected life of the Platform, the design shall mitigate Critical Hazards to a probability of occurrence of less than 1 in 1,000 using at least two barriers, one of which is a safety device.
- (U) The Platform shall have nonslip finishes on all surfaces which are normally accessed.
- (U) The Platform shall provide hand railings on all ladders, stairs and around elevated regions which are normally accessed.
- (U) The Platform shall provide safety harnesses for climbing towers, working in aerial lift baskets, and accessing/working on top of the Aerostat.

### **3.3.3.2 (U) Acoustic Noise**

- (U) Acoustic noise levels of the Platform shall meet levels and durations in MIL-STD-1474D, Steady State Noise, Personnel Occupied areas and MIL-STD-1472F, Acoustical Noise Hearing Protection or Electronic Communication. Noise protection may be required.

### **3.3.3.3 (U) Electrical and Electronic Safety**

- (U) The Platform shall implement grounding and bonding using MIL-STD-464A as guidance.
- (U) All electrically conductive chassis and racks of the Platform shall have a dedicated bonding point such that the item can be system bonded regardless of the electrical condition of its mounting surface.
- (U) The Platform's external chassis shall provide external grounding provisions to control electrical current flow and static charging for protecting personnel from shock.
- (U) The Platform shall utilize no glass fiber materials as the outer surface or covering on cables or wiring where they may cause skin irritation, per the guidelines of MIL-HDBK-454A, General Guidelines for Electronic Equipment, Guideline 1, Section 4.9.4.
- (U) The Platform shall have a point on all electrically conductive chasses that will serve as the chasses' common tie point so that it may be connected to static and to safety ground as shown in MIL-HDBK-454A, General Guidelines for Electronic Equipment, Guideline 1, Ground.
- (U) The Platform shall provide local emergency power shutdown capability at occupied locations and shelters.
- (U) The Platform shall have at least 3 barriers, to preclude accidental contact under all conditions of operation and maintenance, for all potentials between 30V and 500V.
- (U) The Platform shall prevent shorting of circuits carrying more than 25A. Appropriate means may include guards and warning labels.
- (U) The Platform assemblies which contain circuits operating at potentials in excess of 500 volts shall be completely enclosed with any access covers and plates equipped with non-bypassable interlocks that activate to shut down power.
- (U) The Platform shall have visible markings for LRUs sensitive to Electrostatic Discharge (ESD).
- (U) The Platform shall have Ground Fault Circuit Interrupters (GFCI) for all external single-phase, 60-Hz outlets.

(U) The Platform circuits with voltages over 30 V containing capacitors which store more than 0.25 joules shall have discharging devices unless they discharge to 30 V or less within 2 seconds after power removal for maintenance purposes.

NOTE: This does not apply to batteries.

(U) Platform connectorized power sources which provide 70V or greater shall present no catastrophic hazards with a probability greater than 0.000001 associated with mating, de-mating, and handling of the cables.

(U) The Platform shall ensure that powered ends of connectors are protected from accidental contact.

(U) The Platform shall have a means to reduce the voltage at test points to less than 300V if the potential to be measured is in excess of 300V peak.

(U) The Platform shall use applicable portions of MIL-HDBK-454A, Guidelines on Personnel Hazards, Flammability, and Electrical Overload Protection.

(U) The Platform shall have external conductive surfaces of equipment housing hazardous voltages grounded to a common static and safety ground point.

#### **3.3.3.4 (U) Personnel Exposure**

(U) The Platform shall provide physical guards to prevent inadvertent exposure of personnel to surface temperatures outside of the maximum/minimum recommended in MIL-STD-1472F, Table XXI, or less than 0° C (32°F) except for surface temperatures induced by the climatic environment.

(U) The Platform MMS shall provide methods to allow dual path ingress and egress to and from the confined area of the machinery enclosure.

(U) The Platform shall incorporate provisions to protect personnel from electromagnetic radiation from any of its equipment operating at ground level if such radiation exceeds the permissible levels (controlled and uncontrolled) as specified in IEEE C95.1-2005.

#### **3.3.3.5 (U) Explosive Safety**

(U) Any electrically initiated devices (EIDs) and electro-explosive devices (EEDs) employed within the Platform design shall be protected from inadvertent ignition and from being degraded in performance after exposure to externally radiated electromagnetic environments (EME) using MIL-STD-464A as guidance.

(U) Any electrically initiated devices (EIDs) or electro-explosive devices (EEDs) which are incorporated in the Platform design shall be rendered safe using explosive ordnance disposal (EOD) tools, methods and technology.

#### **3.3.3.6 (U) Mechanical Safety**

(U) The Platform equipment shall have door or hinged covers that are rounded at the corners and provided with stops to hold them open.

(U) The Platform equipment shall preclude sharp projections on cabinets, doors, and similar parts.

##### **3.3.3.6.1 (U) Connectors, Fittings and Couplings**

(U) The Platform equipment shall have connectors that preclude the mismatching of cables in a manner which would cause malfunction, damage to equipment, or hazard to personnel. Where design considerations require plug and receptacles of similar configuration in close proximity, the mating plugs and receptacles should be suitably coded or marked to clearly indicate the mating connectors.

##### **3.3.3.6.2 (U) Moving Parts**

(U) No entry.

##### **3.3.3.7 (U) Software Safety**

(U) Safety interlocks of the Platform hardware shall be independent of software such that they cannot be overridden by software.

(U) Whether the Platform software for operator stations is shutdown by an operator or occurs automatically, the Platform shall remain safe and return to full performance upon restoration of the station.



### 3.3.4 (U) Human Engineering

(U) The Platform shall have work areas and equipment that accommodate a soldier population that ranges in stature from 5th percentile female to 95th percentile male as specified in MIL-STD-1472F, sections titled Physical Accommodation and Workspace Design.

(U) The Platform equipment external to CPG ground shelters shall have displays and equipment that permit performance of mission-essential operations and decontamination tasks by personnel wearing combat gear and MOPP-IV as specified in MIL-STD-1472F, sections titled Operational Environment and Use With Individual Protective Equipment.

(U) The Platform equipment external to CPG ground shelters shall have displays and equipment that permit performance of operations, maintenance, and support tasks by personnel wearing combat gear and cold weather gear as specified in MIL-STD-1472F, sections titled Operational Environment and Use With Individual Protective Equipment.

(U) The Platform shall have interchangeable line replaceable units as specified in MIL-STD-1472F, section titled Design for Maintainer.

(U) The Platform equipment external to CPG ground shelters shall have connectors and controls with spacing designed to be compatible with Field Level Maintenance and operation in cold weather/MOPP IV protective clothing as specified in MIL-STD-1472F, section titled Spacing.

(U) The Platform MMS winch operator cab and machinery enclosure shall have ambient lighting with controls at the entrances.

(U) The Platform shall have visual displays designed using the guidance of MIL-STD-1472F, section titled Visual Displays.

(U) The Platform shall have audio signals designed using the guidance of MIL-STD-1472F, section titled Audio Displays.

(U) The Platform shall have controls designed using the guidance of MIL-STD-1472F, section titled Controls.

(U) The Platform shall have indications of equipment and system status during operation and maintenance designed using the guidance of MIL-STD-1472F, sections titled Visual Displays and Audio Displays.

(U) The Platform shall have emergency indications and related controls designed using the guidance of MIL-STD-1472F, section titled Emergency Use.

(U) The Platform shall have alerts and rejects designed using the guidance of MIL-STD-1472F, section titled User-Computer Interface. Alerts and rejects are defined as audio displays, visual displays, or tactile displays as shown in MIL-STD-1472F, Sections 5.14.3.8 (Audio Displays) and 5.2.1.1 (Warning/Caution).

#### 3.3.4.1 (U) Anthropometrics

(U) The Platform shall have reach access for inserting, adjusting, and/or removing a unit or assembly as specified in MIL-STD-1472F, section titled Physical Access.

(U) The Platform shall have replacement units, assemblies, and connectors that meet insertion, removal, and grip force requirements as specified in MIL-STD-1472F, section titled Design for Maintainer.

(U) The Platform shall have visual access for corrective and preventative maintenance tasks as specified in MIL-STD-1472F, section titled Visual Access.

(U) The Platform shall have access openings and clearance dimensions for inserting, adjusting, and/or removing a unit or assembly as specified in MIL-STD-1472F, section titled Physical Access.

(U) The Platform shall have units and assemblies configured for removal, carrying, and replacement as specified in MIL-STD-1472F, section titled Weight.

(U) The Platform winch operator cab shall have workstations, controls, indicators, and displays mounted for seated operations as specified in MIL-STD-1472F, section titled Seated Operations.

#### 3.3.4.2 (U) Environmental Control Systems

(U) The Platform winch operator cab shall have environmental controls and equipment to adjust and maintain temperature, humidity, and ventilation as specified in MIL-STD-1472F, section titled Environment.

**3.3.4.3 (U) Human-to-Machine Interfaces**

(U) The Platform shall have human-to-machine interfaces designed to use state-of-the-art computer and display technology, excluding GFE.

**3.3.5 (U) System Security**

(U) While the allocation of requirements from the System Specification to Section 3.3.5 is acknowledged, the detailed Prime Item-level requirements have not yet been defined by the Information Assurance Integrated Product Team. The requirements in this section are placeholders for the Prime Item requirements and will be replaced by them as they are defined.

**3.3.5.1 (U) Information Assurance (IA)**

**3.3.5.1.1 (U) Security and Design Configuration**

[Redacted] b(3)

(U) The Platform shall incorporate the security principle of least privilege, see 6.2.

(U) The Platform shall only use binary or machine executable public domain software products or other software products, such as those commonly known as freeware or shareware, that have been assessed for information assurance impacts or which have been approved by the DoD Approving Authority.

[Redacted] b(3)

[Redacted] b(3)

(U) The Platform shall incorporate identification, authentication, and access controls.

(U) The security support structure of the Platform shall be isolated. Means of isolation may include the use of partitions and/or domains that control access to and integrity of hardware, software, and firmware that perform security functions.

**3.3.5.1.2 (U) Enclave and Computing Environment**

[Redacted] b(3)

[Redacted] b(3)

(U) The Platform shall implement virus protection for all servers, workstations, and mobile computing devices. Virus protection software will be provided CFE.

**3.3.5.1.3 (U) Enclave Boundary Defense**

(U) No entry.

**3.3.5.1.4 (U) Physical Environment**

(U) The Platform shall implement locks and alarms for the protection of classified information systems in accordance with the appropriate level of classification.

**3.3.5.2** [REDACTED] **b(3)**

**3.3.5.3** [REDACTED] **b(3)**

**3.4 (U) Documentation**

(U) The Platform design shall comply with the applicable information technology standards contained in the DoD Information Technology Standards Registry (DISR).

**3.5 (U) Logistics**

**3.5.1 (U) Supply**

**3.5.2 (U) Maintenance**

(U) No entry.

**3.5.3 (U) Vehicles, Shelters, and Trailers**

(U) Except for items approved by the government JLENS Product Manager, such as the Aerostat flexible structure, the Mobile Mooring Station (MMS) and some Platform associated Ground Support Equipment (GSE), see 3.3.2.4.3, all JLENS equipment shall be packed for shipment using ISO containers sized at 8 ft or 8.5 ft height, 8 ft width and 20 ft length.

(U) In transport mode, the Platform equipment shall have lift and tie-down provision in accordance with MIL-STD-209K section titled Lifting Provisions and Equipment Tie-down Provisions.

(U) The Platform in the transport configuration shall meet the U.S. Department of Transportation (DOT), NATO, and European Union (EU) Performance-Oriented Packaging (POP) standards for unrestricted highway, rail, and sea transportation.

(U) The Platform shall operate in accordance with the requirements after exposure to transportation by rail [REDACTED] **b(3)** road or air.

(U) The Platform shall perform mission critical functions after being transported off-road to reach preselected emplacement sites over terrain and unimproved roads that meet Perryman Cross-Country Course No.1 criteria.

(U) The Platform, in Road March mode, shall be transportable over primary and secondary roads (within highway permit limits), [REDACTED] **b(3)**

[REDACTED] to reach preselected emplacement sites under the following conditions.

- a. Where the primary, secondary, unimproved and off-road characteristics do not exceed the conditions stated in the Perryman Cross Country Course No. 1 and the vibration spectra presented in section 7.2.
- b. Where the Perryman Cross Country Course No. 1 is defined in Vehicle Test Facilities and Aberdeen Proving Ground, U. S. Army Test and Evaluation Command, Test Operations Procedure Report Number TOP 1-1-011.

**3.5.3.1 (U) Land Transport**

[REDACTED] **b(3)**

b(3)

(U) In the appropriate operational mode, the Platform shall meet performance requirements after exposure, while in the transport configuration, to the Railroad Transportation vibrations of NGT than 0.488 g rms longitudinal, 0.488 g rms vertical, and 0.488 g rms lateral.

(U) In the appropriate operational mode, the Platform shall meet performance requirements after being subjected, while in the transport configuration, to rail impact static equivalent loads NGT 5.0 g longitudinal, 3.0 g vertical and 3.0 g lateral.

(U) In the Transport Mode, the Platform shall be transportable on highways defined in MIL-STD-1366D including an allowance for special permits where the limits for load, vibration, and shock are presented in Section 7.2 (Ground Transport).

(U) In the Transport Mode, the Platform shall be transportable on secondary roads where the limits for load, vibration, and shock are presented in Section 7.2 (Ground Transport).

(U) In the Transport Mode, the Platform shall be transportable on unimproved roads where the limits for load, vibration, and shock are presented in Section 7.2 (Ground Transport).

(U) In the Transport Mode the Platform shall be transportable b(3)

### 3.5.3.2 (U) Sea Transport

(U) In the Transport Mode, the Platform shall be marine transportable in accordance with MIL-STD-1366D section titled Water Transportation (Load on / Load off), where load limits and vibrations are presented in Section 7.1 (Shock and Vibration).

(U) Brought to the appropriate operational mode the Platform shall meet performance requirements after exposure, while in transport configuration, to the Ship Transportation vibrations of NGT 0.315 g rms longitudinal, 0.315 g rms vertical, and 0.3 15 g rms lateral.

### 3.5.3.3 (U) Air Transport

(U) In the Transport Mode, the Platform shall be transportable on C-130 (except the mobile mooring station, associated peculiar support equipment and ISOs or shelters which differ from 8' x 8' x 20'), C-5 and C-17 aircraft. The shock and vibrations experienced during C-130, C-5, and C-17 aircraft transport are presented in Section 7.1 (Shock and Vibration).

(U) Brought to the appropriate operational mode, the Platform shall meet performance requirements after exposure, while in the transport configuration, to the aircraft random vibrations of NGT 5.17 g rms longitudinal, 5.17 g rms vertical, and 5.17 g rms lateral.

### 3.5.4 (U) Lifting and Handling Equipment

(U) The Platform shall use military lifting and handling equipment, unless the government approves justification for nonmilitary equipment.

### 3.5.5 (U) March Order and Emplacement

b(3)

### 3.6 (U) Personnel and Training

(U) The Platform will support all system requirements for training. At the current time, there are no specific platform-related technical requirements identified for training.

**3.7 (U) Subsystem Characteristics**

(U) The Platform can be thought of as having four distinct elements that can also be used to describe the system physical characteristics. The four elements are:

- a. Aerostat,
- b. Mobile Mooring Station (MMS),
- c. Tether, and
- d. Ground Support Equipment (GSE).

(U) A top-level description of these elements is given in the following paragraphs. Specific requirements that drive the details of the configurations are in the associated Critical Item Development Specification.

**3.7.1 (U) Hardware Components**

(U) All workmanship will be in accordance with Raytheon and TCOM workmanship standards.

(U) The Platform shall be designed such that it can be used for the Surveillance System and the Fire Control System.

(U) The Platform shall control EMI characteristics of subsystems using MIL-STD-461E as a guideline.

(U) Platform design and construction process will use applicable Raytheon and TCOM engineering and manufacturing standards unless otherwise specified.

**3.7.1.1 (U) Aerostat**

b(3)

(U) Detailed requirements for the Aerostat element are provided in the Aerostat Critical Item Development Specification (CIDS) document.

(U) The Aerostat shall elevate a distributed payload of 7,000 lb to 10,000 ft. altitude MSL from a sea level pad with a pad temperature of 49 °C at zero wind.

(U) The Aerostat shall carry a Mode 3C transponder that can be enabled and disabled from the flight director's station within the ground CPG.

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b(3)

(U) The Aerostat shall include visible and IR strobe lighting which can be operator selected .

(U) At the lift check prior to the mission, the Aerostat shall have 15% of Standard Gross Lift at operational altitude.

(U) The Aerostat shall meet appropriate safety requirements for airborne platforms as specified by the Federal Aviation Administration (FAA) and the international community.

(U) The Aerostat shall include strobe lights and beacon transponder allowing flights in Visual Flight Rules (VFR) conditions.

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(U) Flight termination receivers on the Aerostat shall preclude inadvertent activation by unauthorized sources.

b(3)

b(3)

(U) The Aerostat's strobe lighting shall have operator control to enable it to be turned on and off during flight.

**3.7.1.2 (U) Mobile Mooring Station (MMS)**

(U) The purpose of the Mobile Mooring Station (MMS) is to launch and recover the Aerostat as well as secure it in a moored condition while weathervaning.

- (U) The MMS also provides accessibility to portions of the airborne payload for maintenance.
- (U) Once the site preparations are made, the MMS can be set up to support the Aerostat operations. The MMS can be disassembled, packed and prepared for transport to another location.
- (U) The MMS is based on a trailer.
- (U) The MMS weight will accommodate the transportation requirements.
- (U) The MMS is powered from the Platform GSE.
- (U) Detailed requirements for the MMS element are provided in the MMS Critical Item Development Specification (CIDS) document.

b(3)

b(3)

- (U) The MMS winch cab operator station shall have human-to-machine interfaces which are designed to use state-of-the-art computer and display technology.
- (U) In order to minimize the probability of being detected, targeted and damaged, the MMS shall be colored to minimize its visible signature.

**3.7.1.3 (U) Tether**

- (U) The Tether shall have sufficient design margin to reduce the Mishap Risk Category to "Medium" or "Low" as defined in Table A-IV of MIL-STD-882D, Appendix A.
- (U) The Tether shall provide mechanical connection between the mooring station and the Aerostat as well as a means to control the Aerostat operating altitude.

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- (U) Detailed requirements for the Tether element are provided in the Tether Critical Item Development Specification Document.

**3.7.1.4 (U) Ground Support Equipment (GSE)**

- (U) The Ground Support Equipment (GSE) includes modules for power conversion, power distribution, cable storage, weather monitoring equipment, and special test equipment.
- (U) Detailed requirements for the GSE element are provided in the Ground Support Equipment Critical Item Development Specification (CIDS) document.
- (U) The Platform GSE shall include equipment to monitor and record meteorological data and flight conditions where meteorological data includes temperature, precipitation, humidity, wind velocity, barometric pressure and icing.
- (U) The Platform meteorological subsystem shall have a minimum range to allow time for the Aerostat to be inhaled and moored for protection against thunderstorms and winds that exceed the limits defined in the Natural Environmental conditions in 3.7.1.
- (U) Ground based detection, monitoring, and recording for lightning shall be provided.
- (U) A weather radar shall be provided that can be enabled and disabled from the flight director's station within the ground CPG.
- (U) The Platform shall include software to allow control of critical airborne subsystems, and for general monitoring and recording in near real time of Aerostat and MMS data.

b(3)

**b(3)**

(U) The operator station software in the Platform shall be designed to utilize human-to-machine interfaces associated with state-of-the-art computer and display technology.

(U) The Platform shall have an inherent 50% reserve data processing capability, computer memory, and computer throughput at the time of software requirements validation. Note: The COTS weather radar is not included in this allocation as the software is not available for upgrade or modification.

**3.7.1.4.1** **b(3)**

**b(3)**

**3.7.1.4.2 (U) Helium Supply**

(U) The GSE shall include gaseous helium storage.

(U) The helium supply is CFE.

(U) The GSE shall include sufficient helium to provide two (2) fills for the Aerostat plus a 120-day mission.

**3.7.1.4.3 (U) Other Support Equipment**

(U) The Platform GSE shall include the following types of support equipment. The determination of Contractor Furnished Equipment (CFE) or Government Furnished Equipment (GFE) will be made at a later date:

- a. 70 foot (minimum) crane with minimum lift of 30 tons,

- b. Trackcat with auger drive and accessories,
- c. Organic vehicles equipped with winches,
- d. 150-foot aerial lift maintenance vehicle,
- e. Aerostat Snubber Vehicles,
- f. Tools and test equipment,
- g. MPU-810 Power Units,
- h. Mobile Flood Lights,
- i. Forklift (10 ton), and
- j. Trailers.

### **3.7.2 (U) Software Components**

- (U) The Platform software shall continuously record organic weather data for NLT 12 hours.
- (U) The Platform software shall report weather data to the associated ground CPG equipment.
- (U) The Platform software shall report Platform status data, including telemetry data and deployed tether length, to the associated ground CPG equipment.
- (U) The Platform software shall include all available data recording details in the automatic level.
- (U) The Platform software shall have a data interface with the ground CPG for Platform status transfer.
- (U) The Platform operator station software shall deliver safety critical alerts to the operator.
- (U) The Platform operator station software shall display hazardous condition alerts.
- (U) The Platform operator station software shall monitor temperature within critical hardware to provide alerts of hazardous temperature extremes.

## **4 (U) Verification**

### **4.1 (U) Requirement Verification Matrix Content**

- (U) The Requirement Verification Matrix (RVM) contains information in columns that show where and how each requirement will be verified. The content of these columns is defined in the following paragraphs.

#### **4.1.1 (U) Platform PIDS Absolute Number**

- (U) This column contains the absolute number of the requirement in this document.

#### **4.1.2 (U) Platform PIDS Paragraph Number**

- (U) This column contains the paragraph number of the requirement in this document.

#### **4.1.3 (U) Verification Period**

- (U) This column contains the test period where the requirement verification will be conducted for the purpose of selloff of the completed prime item. The selloff of the verification of a requirement at the PIDS level of verification may (or may not) be used at the selloff at the System and/or Orbit level of verification. The selloff of the requirement at the PIDS level of verification is the criterion that will be used by System Integration for the acceptance of the prime item into the System Integration process.

- (U) As part of the process of this final verification activity, there will be an acceptance sign-off activity in the post-test review meeting signifying that the requirement is verified. If there are analysis data that must be examined prior to sign-off, a post analysis meeting will be conducted to review and sign-off the analysis and acceptance of the completed verification.

#### **4.1.4 (U) Verification Level**

- (U) This column contains the specification level at which the requirement verification will be conducted for the purpose of sell-off of the completion of the prime item. The level may be the PIDS level, the major component level, the supplier product acceptance (verification) level, the review of the design (PDR/CDR) level, the subsystem integration level, a "thread" level, or other level within the prime item IPT test program. The levels must be defined and scheduled in the prime item development plan.



#### **4.1.5 (U) Verification Methods**

##### **4.1.5.1 (U) Verification by Demonstration (D)**

(U) Demonstration consists of a functional verification in which the observation of events is the predominant vehicle. Measurements are not usually required. When appropriate, it includes the actual exercise of software along with appropriate drivers, simulators, or integrated hardware to verify that requirements have been satisfied.

##### **4.1.5.2 (U) Verification by Test (T)**

(U) Test consists of the collection and evaluation of data obtained from the actual exercise of hardware and/or software in either a controlled or an operational environment, as appropriate. Actual input stimuli and/or stimuli obtained from drivers or a simulators is employed, as deemed appropriate. Comparison of the tested characteristics with performance and operational requirements is the usual means employed to verify that requirements have been satisfied.

##### **4.1.5.3 (U) Verification by Analysis (A)**

(U) Analysis consists of the examination of applicable attributes of the existing documentation, hardware, software, and recorded data to verify that requirements have been satisfied. Analysis includes verification by investigation, mathematical analysis, simulation, and sampling the collection of measured data and observing test results with calculated, expected values to establish conformance with stated requirements. Simulation includes verification through the use of mathematical models, which replicate: the operation or performance of the equipment being evaluated; the threat which the equipment must operate against; the environment in which the equipment must operate; and combinations of the equipment, threat, and environmental simulators.

##### **4.1.5.4 (U) Verification by Inspection (I)**

(U) Inspection consists of visual examination, physical manipulation, or measurement as applicable, of documentation, hardware, or software to verify that requirements have been satisfied.

#### **4.1.6 (U) Verification Location**

(U) This column identifies the location where the verification will be conducted.

#### **4.2 (U) Requirements Verification Matrix**

(U) The Requirements Verification Matrix (RVM) consists of a table that correlates each requirement with at least one of the verification methods described above. The verification method is marked in a column in the matrix. A numbering system that allows for quick referencing between the requirement and its associated verification method has been implemented.

ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-131	3.2.1.1.0-3	(U) The Platform shall operate as a land-based unit from a prepared site.	D	A-15 A-24	D, I D, I	S S
PL-132	3.2.1.1.0-4	b(3)	A	A-17 A-26	A A	D D
PL-134	3.2.1.2.0-1	(U) The Platform shall provide protection from the effects of lightning strikes. The lightning protection is needed while airborne or moored.	I	A-3864	I, A	D
PL-135	3.2.1.2.0-2	(U) The Platform shall conduct currents due to direct and indirect lightning strikes to a dedicated ground system using MIL-HDBK-419A and NFPA-780 as guidance.	A, I	A-495 A-496 A-498 A-499	T, A, I T, A, I T, A, I T, A, I	D, S D, S D, S D, S
PL-136	3.2.1.2.0-3	(U) The Platform shall conduct Lightning Electromagnetic Pulse (LEMP)-induced currents to a dedicated ground system using MIL-HDBK-419A and NFPA-780 as guidance.	A, I	A-495 A-496 A-498 A-499	T, A, I T, A, I T, A, I T, A, I	D, S D, S D, S D, S
PL-140	3.2.1.3.0-3	(U) At the Flight Director's station, the operator shall have monitor and control capability for the Aerostat.	D	A-800	I	S
PL-141	3.2.1.3.0-4	(U) At the Flight Director's station, the operator shall have monitor capability for the MMS.	D	A-800	I	S
PL-142	3.2.1.3.0-5	(U) The Platform shall provide Monitor and Control Interfaces between the GSE items and the Flight Director's station in the CCS.	I	A-800	I	S
PL-143	3.2.1.3.0-6	(U) The Platform shall provide intercom interfaces between the MMS, GSE items and the CCS.	I	A-800	I	S
PL-144	3.2.1.3.0-7	(U) The Platform shall provide weather instrumentation; weather radar, lightning location system and ground weather station.	I	A-802	I	L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-147	3.2.1.4.0-2	(U) The Platform shall provide modular connectivity points, to accept alternative payloads. These interfaces will be defined and documented in the System Interface Control Document (ICD). If alternate payloads replace the main sensor, the interfaces, weight distribution and form factor must be maintained.	A, I	A-785	I	D
PL-148	3.2.1.4.0-3	b(3)	T	A-6413	A, T	L
PL-153	3.2.1.6.0-2	b(3)	A, I	A-111709 A-111712	I I	D D
PL-154	3.2.1.6.0-3	b(3)	A, I	A-111709 A-111712	I I	D D
PL-155	3.2.1.6.0-4	b(3)	A, I	A-111709 A-111712	I I	D D
PL-615	3.2.1.6.0-5	b(3)	T	A-7015	T	L
PL-158	3.2.1.7.0-2	(U) Using MIL-HDBK-454A section titled General Guidelines, Power and Ground, as guidance, the Platform MMS shall provide an electrical outlet for an extension cord that is used to supply power inside the windscreen for maintenance and emplacement.	A, I	A-1834 A-1835	I, D, A I, D, A	S S
PL-200	3.2.2.3.1.1.1.0-	(U) To support the distributed radar payload	A, I	A-111709	I	D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
	1	when configured in the Operations State, the Aerostat shall have physical (mechanical) interfaces for attachment of and support of radar payloads.		A-111712	I	D
PL-201	3.2.2.3.1.1.1.0-2	(U) To support the distributed communications payload when configured in the Operations State, the Aerostat shall have a physical (mechanical) interface to the airborne CPG communications payload for attachment and support.	A, I	A-111709 A-111712	I I	D D
PL-203	3.2.2.3.1.1.2.0-1	b(3)	I	A-111709 A-111712	I I	D D
PL-204	3.2.2.3.1.1.2.0-2	b(3)	I	A-111709 A-111712	I I	D D
PL-206	3.2.2.3.1.1.3.0-1	b(3)	I	A-538 A-539	T T	L S
PL-207	3.2.2.3.1.1.3.0-2	b(3)	I	A-538 A-539	T T	L S
PL-209	3.2.2.3.1.1.4.0-1	b(3)	T	A-111709 A-111712	I I	D D
PL-210	3.2.2.3.1.1.4.0-2	b(3)	T	A-111709 A-111712	I I	D D
PL-224	3.2.2.3.1.3.1.0-2	(U) The MMS shall have a physical interface with the earth surface of the GFE prepared site.	I	A-538 A-539	T T	L S
PL-228	3.2.2.3.1.3.3.0-1	b(3)	I	A-538 A-539 A-541 A-542 A-6891 A-6892	T T A, T A, T A, T A, T	L S D, L D, S D, L D, L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-230	3.2.2.3.1.3.4.0-1	b(3)	A, I	A-111709 A-111712	I I	D D
PL-231	3.2.2.3.1.3.4.0-2	b(3)	A, I	A-111709 A-111712	I I	D D
PL-232	3.2.2.3.1.3.4.0-3	b(3)	A, I	A-800	I	S
PL-235	3.2.2.3.1.4.1.0-1	(U) The Platform GSE shall have physical (mechanical) interfaces with the ground CPG for mounting Platform equipment.	A, I	A-111709 A-111712	I I	D D
PL-236	3.2.2.3.1.4.1.0-2	(U) The Platform GSE shall have physical (mechanical) interfaces with the ground CPG for mounting command destruct antenna equipment.	I	A-111709 A-111712	I I	D D
PL-238	3.2.2.3.1.4.2.0-1	b(3)	T	A-122	T, A	S
PL-240	3.2.2.3.1.4.2.0-2	b(3)	T	A-108	T	S
PL-241	3.2.2.3.1.4.2.0-3	b(3)	D	A-111709 A-111712	I I	D D
PL-242	3.2.2.3.1.4.2.0-4	b(3)	A, I	A-111709 A-111712	I I	D D
PL-243	3.2.2.3.1.4.2.0-5	b(3)	A, I	A-111709 A-111712	I I	D D
PL-245	3.2.2.3.1.4.3.0-1	b(3)	I	A-538 A-539 A-541 A-542	T T A, T A, T	L S D, L D, S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
				A-6891 A-6892	A, T A, T	D, L D, L
PL-247	3.2.2.3.1.4.4.0-1	b(3)	A, I	A-111709 A-111712	I I	D D
PL-248	3.2.2.3.1.4.4.0-2	b(3)	A, I	A-111709 A-111712	I I	D D
PL-253	3.2.2.3.2.1.1.0-1	(U) The Aerostat shall have a physical interface with the Tether.	I	A-789 A-792	A I	L L
PL-254	3.2.2.3.2.1.1.0-2	(U) The Aerostat shall have a physical interface with the GSE for helium supply.	I			
PL-256	3.2.2.3.2.1.2.0-1	b(3)	A, I	A-796	T	L
PL-257	3.2.2.3.2.1.2.0-2	b(3)	A, I	A-796	T	L
PL-259	3.2.2.3.2.1.3.0-1	b(3)	I	A-538 A-539	T T	L S
PL-260	3.2.2.3.2.1.3.0-2	b(3)	I	A-538 A-539	T T	L S
PL-262	3.2.2.3.2.1.4.0-1	b(3)	A, I	A-791	I	L
PL-265	3.2.2.3.2.2.1.0-1	(U) The Tether shall have a physical interface with the Aerostat.	I	A-789 A-792	A I	L L
PL-266	3.2.2.3.2.2.1.0-2	b(3)	I	A-538 A-539	T T	L S
PL-268	3.2.2.3.2.2.2.0-1	b(3)	A, I	A-796	T	L
PL-269	3.2.2.3.2.2.2.0-2	b(3)	A, I	A-796	T	L
PL-271	3.2.2.3.2.2.3.0-1	b(3)	I	A-538 A-539	T T	L S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-272	3.2.2.3.2.2.3.0-2	b(3)	I	A-538 A-539	T T	L S
PL-274	3.2.2.3.2.2.4.0-1	b(3)	A, I	A-791	I	L
PL-275	3.2.2.3.2.2.4.0-2	b(3)	A, I	A-791	I	L
PL-278	3.2.2.3.2.3.1.0-1	(U) The MMS shall have a physical interface with the Tether.	I	A-538 A-539	T T	L S
PL-280	3.2.2.3.2.3.2.0-1	b(3)	A, I	A-794 A-796	I T	D L
PL-281	3.2.2.3.2.3.2.0-2	b(3)	A, I	A-796	T	L
PL-282	3.2.2.3.2.3.2.0-3	b(3)	A, I	A-796	T	L
PL-284	3.2.2.3.2.3.3.0-1	b(3)	I	A-538 A-539	T T	L S
PL-285	3.2.2.3.2.3.3.0-2	b(3)	I	A-538 A-539	T T	L S
PL-287	3.2.2.3.2.3.4.0-1	b(3)	A, I	A-791	I	L
PL-290	3.2.2.3.2.4.1.0-1	(U) The GSE shall have a physical interface with the Aerostat for helium supply.	I			
PL-292	3.2.2.3.2.4.2.0-1	b(3)	A, I	A-796	T	L
PL-293	3.2.2.3.2.4.2.0-2	b(3)	A, I	A-796	T	L
PL-295	3.2.2.3.2.4.3.0-1	b(3)	I	A-538	T	L
PL-300	3.2.3.0-2	(U) The Platform shall be interchangeable for both the SuR and the Fire Control Radar	A	A-761	I	D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		payload configurations. Figure 5 illustrates the top-level relationship of the Platform, the radar payload options, and the ground CPG.				
PL-304	3.2.4.1.0-1	(U) The Platform shall maximize operational time considering the following factors contributing to downtime: a. Weather, b. Vulnerability to attack, c. Reliability, d. Maintainability, e. Availability, and f. Ease of movement.	A	A-747 A-749	A A	L L
PL-305	3.2.4.1.0-2	(U) The Platform shall have mission critical single point failures identified.	A	A-1820 A-1827	I, A I, A	D D
PL-306	3.2.4.1.0-3	b(3)	A	A-747	A	L
PL-307	3.2.4.1.0-4	b(3)	A	A-749	A	L
PL-309	3.2.4.2.0-1	b(3)	A	A-751	A	L
PL-310	3.2.4.2.0-2	b(3)	A, D	A-346 A-347	D D	S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-311	3.2.4.2.0-3	b(3)	A, D	A-349 A-350 A-688 A-689	D, I D, I I I	L L D D
PL-312	3.2.4.2.0-4	b(3)	A, D	A-352 A-353	A, D A, D	S S
PL-313	3.2.4.2.0-5	b(3)	A, D	A-352 A-353	A, D A, D	S S
PL-314	3.2.4.2.0-6	b(3)	D	A-311 A-398 A-399 A-401 A-402 A-404 A-405	D D D D D D	S S S S S S
PL-315	3.2.4.2.0-7	b(3)	A	A-367 A-368	A A	S S
PL-316	3.2.4.2.0-8	b(3)	A	A-1839 A-1840	A, D A, D	S S
PL-317	3.2.4.2.0-9	b(3)	A, D	A-355 A-356	D D	S S
PL-318	3.2.4.2.0-10	b(3)	A	A-370 A-371	A A	D D
PL-319	3.2.4.2.0-11	b(3)	A	A-6389 A-6390	I I	S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		b(3)				
PL-320	3.2.4.2.0-12	b(3)	A	A-358 A-359	I I	S S
PL-321	3.2.4.2.0-13	b(3)	A	A-361	I	D
PL-322	3.2.4.2.0-14	b(3)	A	A-709 A-710	D, A D, A	S S
PL-323	3.2.4.2.0-15	b(3)	A	A-712 A-713	A, D A, D	S S
PL-324	3.2.4.2.0-16	b(3)	A	A-410 A-411 A-753	D D D	L L L
PL-2136	3.2.4.2.0-17	b(3)	A	A-410 A-411 A-753	D D D	L L L
PL-332	3.2.5.1.1.1.0-1	(U) In the appropriate operational mode the Platform shall meet performance requirements while being subjected to steady state winds up to 73 km/hr with turbulence of 1.98 m/s rms (40 knots, 6.5 fps).	A	A-482 A-483	A, D A, D	S S
PL-334	3.2.5.1.1.2.0-1	(U) In any non-deployment state the Platform shall survive an exposure to steady state winds	A	A-489 A-490	A, D A, D	S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		of up to 185 km/hr (100 knots).				
PL-335	3.2.5.1.1.2.0-2	(U) While moored or at full altitude, but while non-operational, the Platform shall survive an exposure to steady state winds of up to 148 km/hr with turbulence of 3.05 m/s rms (80 knots, 10 fps).	A	A-486 A-487	A, D A, D	S S
PL-337	3.2.5.1.2.0-1	(U) In the appropriate operational mode, the Platform shall meet performance requirements during exposure to an ambient temperature range from -40°C to +49°C.	A	A-423 A-424	A, T A, T	S S
PL-338	3.2.5.1.2.0-2	(U) After being brought to the appropriate operational mode, the Platform shall meet performance requirements following storage and transport exposure to an ambient temperature range from -46°C to +71 °C, with allowance of environmental kits and procedures for temperature extremes.	A	A-426 A-427	A, T A, T	S S
PL-340	3.2.5.1.3.0-1	(U) In the appropriate operational mode the Platform shall meet performance requirements during exposure to a relative humidity range from 3% to 100% non-condensing.	A	A-429 A-431	A A	D D
PL-2151	3.2.5.1.3.0-2	(U) The Platform, in an appropriate operational mode, shall meet all performance requirements after exposure to a relative humidity range from 3 to 100% non-condensing while in the deployment, storage and movement configurations.	A	A-7058 A-7059	A A	D D
PL-342	3.2.5.1.4.0-1	(U) The Platform shall survive a lightning current of at least 145 kA.	A	A-498 A-499	T, A, I T, A, I	D, S D, S
PL-343	3.2.5.1.4.0-2	(U) The Platform shall include a mooring station sufficiently grounded to protect the operator and maintenance personnel during a lightning strike event.	A	A-3864	I, A	D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-344	3.2.5.1.4.0-3	(U) In the Operations State, Movement State, or Storage State the Platform ground equipment shall be protected from damage from direct and indirect lightning, including LEMP, in accordance with the lightning requirements of MIL-STD-464. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.	A	A-495 A-496	T, A, I T, A, I	D, S D, S
PL-345	3.2.5.1.4.0-4	(U) In the Operations State the Platform airborne equipment shall survive direct or indirect 145 kA maximum lightning strikes, including LEMP, to the Aerostat lightning cage. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.	A	A-498 A-499	T, A, I T, A, I	D, S D, S
PL-346	3.2.5.1.4.0-5	(U) The Platform shall return to the state, mode and condition existing prior to a near lightning strike after a controlled restart. By definition, a nearby lightning strike does not cause equipment damage. A controlled restart is according to procedures.	A	A-501 A-502	T, A, I T, A, I	D, S D, S
PL-2134	3.2.5.1.5.0-1	(U) The Platform, in the appropriate operational mode, shall meet performance requirements (degraded sensor performance during operation is permitted) when exposed to blowing dust of up to 149 $\mu\text{m}$ diameter in concentrations of up to $10 \pm 7 \text{ g/m}^3$ ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).	A	A-472 A-473	A, T A, T	S S
PL-2133	3.2.5.1.5.0-2	(U) The Platform, in the appropriate operational mode, shall meet performance requirements (degraded sensor performance during operation is permitted) when surface equipment is exposed to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $1.1 \pm 0.3$	A	A-7038 A-7040	A, T A, T	S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		$\text{g/m}^3$ ( $0.033 \pm 0.0075 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).				
PL-2132	3.2.5.1.5.0-3	(U) The Platform, in the appropriate operational mode, shall meet performance requirements (degraded sensor performance during operation is permitted) when airborne equipment is exposed to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $0.18 - 0.0/+0.2 \text{ g/m}^3$ ( $0.005 - 0.0/+0.0057 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr). Note: for the Tactical Mode, blowing sand does not reach operational altitude.	A	A-7039 A-7041	A, T A, T	S S
PL-2131	3.2.5.1.5.0-4	(U) The Platform, after assembly into the appropriate operational mode, shall meet performance requirements following exposure, while in the storage and movement configurations, to blowing dust of up to 149 $\mu\text{m}$ diameter in concentrations of up to $10 \pm 7 \text{ g/m}^3$ ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).	A	A-475 A-476	A, T A, T	S S
PL-2130	3.2.5.1.5.0-5	(U) The Platform, after assembly into the appropriate operational mode, shall meet performance requirements following exposure, while in the storage and movement configurations, to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $2.2 \pm 0.5 \text{ g/m}^3$ ( $0.06 \pm 0.015 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).	A	A-7042 A-7043	A, T A, T	S S
PL-351	3.2.5.1.6.0-1	(U) The Platform shall be either composed of materials that inhibit the growth of fungus or composed of materials which are protected from environments that would encourage fungus growth.	A	A-478 A-479	A A	D D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-353	3.2.5.1.7.0-1	(U) After being brought to the appropriate operational mode the Platform shall meet performance requirements while exposed to a salt atmosphere in sea locations and coastal regions. For information on salt atmospheres refer to the System Specification, Appendix B.	A	A-464 A-467	A, T A, T	S S
PL-354	3.2.5.1.7.0-2	(U) After being brought to the appropriate operational mode, the Platform shall meet performance requirements following non-operational mode exposure to a salt atmosphere in sea locations and coastal regions.	A	A-465 A-468	A, T A, T	S S
PL-355	3.2.5.1.7.0-3	(U) After being brought to the appropriate operational mode, the Platform shall meet performance requirements after transport mode configuration exposure to a salt atmosphere during ocean transportation.	A	A-466 A-469	A A	S S
PL-358	3.2.5.1.8.1.0-1	(U) After being brought to the appropriate operational mode the Platform shall meet performance requirements during exposure to not greater than 10.2 cm (4 inches) of snow accumulation on ground equipment surfaces where the snow has a density of 0.3 gram per cubic centimeter. Ground equipment does not include the Aerostat or Tether.	A	A-458 A-459	A A	D, S D, S
PL-359	3.2.5.1.8.1.0-2	(U) While in the storage or transport configuration, the Platform shall be protected from damage during exposure to snow accumulation of up to 15.2 cm (6 inches), with a density of 0.3 gram per cubic centimeter, in 12 hours.	A	A-461 A-462	A A	D, S D, S
PL-2150	3.2.5.1.8.1.0-3	(U) The Platform, in the appropriate operational mode, shall meet all performance requirements during a snow falling rate of up to 2.54 cm/hour (1 inch/hour). Note: The	A	A-7044 A-7045	A A	D, S D, S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		falling snow does not accumulate on the aerostat.				
PL-361	3.2.5.1.8.2.0-1	b(3)	A	A-436 A-437	A, T A, T	L, D, S L, D, S
PL-362	3.2.5.1.8.2.0-2	b(3)	A	A-440 A-441	A, T A, T	L, D, S L, D, S
PL-363	3.2.5.1.8.2.0-3	b(3)	A	A-444 A-445	A, T A, T	L, D, S L, D, S
PL-364	3.2.5.1.8.2.0-4	b(3)	A	A-447 A-448	A, T A, T	L, D, S L, D, S
PL-366	3.2.5.1.8.3.0-1	(U) While in the appropriate operational mode, the Platform shall survive exposure to hail with size not greater than one-half (1/2) inch in diameter.	A	A-451 A-452	A A	D, S D, S
PL-367	3.2.5.1.8.3.0-2	(U) While in the storage or transport configuration, the Platform shall be protected from damage during exposure to hail with size not greater than one-half (1/2) inch in diameter.	A	A-454 A-455	A A	D, S D, S
PL-369	3.2.5.1.9.0-1	(U) The Platform shall preclude electrostatic discharge from degrading system performance, to include precipitation static electricity, at all operating altitudes and at maximum wind conditions.	A	A-546 A-547	T T	L L
PL-370	3.2.5.1.9.0-2	(U) The Platform LRUs, except for GFE, shall	A	A-546	T	L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		meet performance requirements after its external surfaces are subjected to an electrostatic discharge of <b>b(3)</b> from a $250 \pm 5\%$ picofarad source and $500 \pm 5\%$ ohm series resistance. (U) Note: ESD discharges directly to connector pins are not included in this requirement.		A-547	T	L
PL-371	3.2.5.1.9.0-3	(U) The Platform ground equipment shall have grounds provided using NFPA-780 as guidance.	A, I	A-495 A-496	T, A, I T, A, I	D, S D, S
PL-375	3.2.5.2.1.0-2	(U) Platform items which are transported within NBC protective ISO containers are protected by the containers. Transportation enclosures which are non-GFE and delivered as part of the Platform shall be able to withstand contamination/decontamination described herein such that it protects the equipment contained within the enclosure.	A	A-1572 A-1575 A-6894	A A A, I	L L L
PL-376	3.2.5.2.1.0-3	(U) Platform items not transported within NBC protective ISO containers shall withstand contamination/decontamination as defined below while in the transport configuration.	A	A-1571 A-1574	A A	S S
PL-377	3.2.5.2.1.0-4	(U) The Platform's equipment enclosures which are mounted on the Aerostat, exterior to the windscreen, and have the purpose to protect the equipment interior from NBC shall protect those internal equipments from contamination caused by NBC event as described herein.	A	A-1661	A	L
PL-378	3.2.5.2.1.0-5	<b>b(3)</b>	A	A-552 A-553 A-555 A-556	A A A A	L L L L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		b(3)				
PL-384	3.2.5.2.1.0-6	b(3)	A	A-552 A-553	A A	L L
PL-386	3.2.5.2.1.0-8	b(3)	A	A-555 A-556	A A	L L
PL-387	3.2.5.2.1.0-9	(U) All exterior surfaces of Platform ground based equipment and the exterior surfaces of Platform airborne electronic enclosures external to both the windscreen and the aerostat excluding support equipment shall be painted with Chemical Agent Resistant Coating (CARC), in accordance with H372287, with exterior topcoat 383 Green (color 34094 of Fed-Std-595).	I	A-1657	I	D
PL-2154	3.2.5.2.1.0-9.0-1	(U) All Platform airborne frames and racks shall be painted with Chemical Agent Resistant	I	A-112573	I	D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		Coating (CARC), in accordance with H372287, with exterior topcoat white (color 37875 of Fed-Std-595).				
PL-388	3.2.5.2.1.0-10	b(3)	A	A-1664 A-6414	A A, T	D L
PL-389	3.2.5.2.1.0-11	b(3)	A	A-561 A-562	A	D, S D, S
PL-390	3.2.5.2.1.0-12	b(3)	A	A-1666 A-1667	A, D A, D	S S
PL-391	3.2.5.2.1.0-13	b(3)	A	A-558 A-559	A A	S S
PL-394	3.2.5.2.2.0-1	(U) In the Tactical Mode of the Operational State, the Platform shall meet performance requirements while being subjected to vibration levels caused by operation.	A	A-509 A-510	A, D, T A, D, T	S S
PL-395	3.2.5.2.2.0-2	(U) After being brought to the appropriate operational mode, the Platform shall meet performance requirements following exposure to vibration levels caused by normal	A	A-512 A-513	A, T, D A, T, D	S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class																		
		transportation, maintenance, or storage. Transportation includes, air, ground (both road and <b>b(3)</b> ) and sea.																						
PL-397	3.2.5.2.3.0-1	(U) While in an operational mode, the Platform shall meet performance requirements applicable to that operational mode, while being subjected to shock levels caused during normal operation of that mode.	A	A-516 A-517	A, D A, D	S S																		
PL-398	3.2.5.2.3.0-2	<p>(U) The Platform LRUs shall meet performance requirements after the LRUs are dropped, with the drop height dependent on the LRU packaged weight as:</p> <table border="1"> <thead> <tr> <th>Package Gross Weight, kg (lb)</th> <th>Design</th> </tr> </thead> <tbody> <tr> <td>0 to 9.1 (0 to 20)</td> <td></td> </tr> <tr> <td>9.2 to 18.2 (21 to 40)</td> <td></td> </tr> <tr> <td>18.3 to 27.2 (41 to 60)</td> <td></td> </tr> <tr> <td>27.4 to 36.3 (61 to 80)</td> <td></td> </tr> <tr> <td>36.4 to 45.4 (81 to 100)</td> <td></td> </tr> <tr> <td>45.5 to 68.1 (101 to 150)</td> <td></td> </tr> <tr> <td>68.2 to 113.5 (151 to 250)</td> <td></td> </tr> <tr> <td>113.6 or greater (251 or greater)</td> <td></td> </tr> </tbody> </table> <p>while packaged in their transit containers according to the applicable technical documentation.</p>	Package Gross Weight, kg (lb)	Design	0 to 9.1 (0 to 20)		9.2 to 18.2 (21 to 40)		18.3 to 27.2 (41 to 60)		27.4 to 36.3 (61 to 80)		36.4 to 45.4 (81 to 100)		45.5 to 68.1 (101 to 150)		68.2 to 113.5 (151 to 250)		113.6 or greater (251 or greater)		A	A-521	A, T	L
Package Gross Weight, kg (lb)	Design																							
0 to 9.1 (0 to 20)																								
9.2 to 18.2 (21 to 40)																								
18.3 to 27.2 (41 to 60)																								
27.4 to 36.3 (61 to 80)																								
36.4 to 45.4 (81 to 100)																								
45.5 to 68.1 (101 to 150)																								
68.2 to 113.5 (151 to 250)																								
113.6 or greater (251 or greater)																								
PL-399	3.2.5.2.3.0-3	(U) After assembly and while in the appropriate operational mode, the Platform fragile components (see 6.2), excluding the	A	A-523	A, T	L																		

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		MMS, Helium containers, and any hardware not packaged in ISO containers, shall meet performance requirements after having been subjected, while in the transport configuration, to [REDACTED] b(3)				
PL-3406	3.2.5.2.3.0-4	(U) After assembly and while in the appropriate operational mode, Platform non-fragile components (see 6.2), excluding the MMS, Helium containers, and any hardware not packaged in ISO containers, shall meet performance requirements after having been subjected, while in the transport configuration, to [REDACTED] b(3)	A	A-113361	A, T	L, S
PL-2153	3.2.5.2.3.0-5	(U) After assembly and while in the appropriate operational mode, the Platform, excluding the MMS, Helium containers, and any hardware not packaged in ISO containers, shall meet performance requirements after being subjected, while in the transport configuration, to [REDACTED] b(3)	A	A-111711	A,T	L
PL-3411	3.2.5.2.3.0-5.0-1	(U) Each Platform unique transportation fixture onto which fragile hardware is mounted shall be marked with special handling procedures using MIL-STD-129P as guidance.	I	A-113342	I	L, S
PL-3408	3.2.5.2.3.0-5.0-2	(U) The exterior of the shipping containers containing fragile hardware shall be marked with special handling procedures using MIL-STD-129P as guidance.	I	A-113363	I	L, S
PL-3407	3.2.5.2.3.0-5.0-3	(U) The Platform ISO shipping containers which contain fragile equipment shall include mechanical shock indicators.	A	A-113362	A, T	L, S
PL-401	3.2.5.2.4.0-1	(U) The Platform shall include system equipment, both airborne and ground that is	A	A-534 A-10330	T T	L S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		hardened to withstand electromagnetic radiation in accordance with the intra-system EMC and the inter system EMC requirements of MIL-STD-464A as a guideline. Typical environment is shown in Table III.		A-10331 A-10332	T T	S S
PL-403	3.2.5.2.4.0-3	(U) The Platform shall control extraneous emissions using as a guide MIL-STD-461E, Table V, Ground Army.	A	A-533 A-535 A-7049 A-7050 A-10326 A-10327 A-10328 A-10329	T T T T T T T T	L, S L, S L L L, S L, S S S
PL-404	3.2.5.2.4.0-4	(U) The Platform shall incorporate an emission control (EMCON) capability which reduces radiated energy in compliance with MIL-STD-464A, Section titled Emission control (EMCON), see Appendix H, which can be activated from <b>b(3)</b>	T	A-391 A-392	T T	S S
PL-2142	3.2.5.2.4.0-5	<b>b(3)</b>	T	A-10312 A-10313	D T	S S
PL-2114	3.2.5.2.4.0-6	<b>b(1)</b>	A	A-541 A-542 A-6891 A-6892 A-6894	A, T A, T A, T A, T A, I	D, L D, S D, L D, L L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		<div style="background-color: black; width: 100%; height: 100%; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 2em; font-weight: bold;">b(3)</span> </div>				
PL-2115	3.2.5.2.4.0-7	<div style="background-color: black; width: 100%; height: 100%; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 2em; font-weight: bold;">b(1)</span> </div>	A	A-541 A-542 A-6891 A-6892 A-6894	A, T A, T A, T A, T A, I	D, L D, S D, L D, L L
PL-406	3.2.6.0-1	(U) The Platform shall use standard military vehicles, shelters, and trailers unless the government approves justification for nonmilitary equipment.	A, I	A-715	I	D
PL-407	3.2.6.0-2	(U) The Platform shall use standard military vehicles for ground transportation.	I	A-716	D, I	D, L
PL-408	3.2.6.0-3	(U) The Platform shall use standard military	I	A-719	D, I	D, L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		vehicles for handling.				
PL-413	3.3.2.0-1	(U) The JLENS Orbit shall have equipment marked in accordance with MIL-STD-130L for unique identification with the following provisos and exceptions.	A, I	A-726	I	L
PL-423	3.3.3.1.0-1	(U) The Platform shall be designed such that components containing hazardous materials from Class 1 ozone depleting substances and the EPA-17 list will only be utilized in compliance with the JLENS Hazardous Materials Management Plan (HMMP). (U) NOTE: Appendix A of the JLENS System Specification contains the aforementioned lists.	I	A-2126 A-2127	I, A I, A	D D
PL-424	3.3.3.1.0-2	(U) The Platform shall have no radioactive materials which are defined by the Nuclear Regulation Commission that have greater than 0.002 microcuries per gram or activity per item equals or exceeds 0.01 microcuries.	A	A-2126 A-2127	I, A I, A	D D
PL-425	3.3.3.1.0-3	(U) Platform monitoring equipment shall provide warnings and alarms to identify critical conditions.	D	A-620	I, D	L
PL-426	3.3.3.1.0-4	(U) Appropriate Platform MMS equipment shall use temperature measuring devices and over temperature devices to provide a warning for potential equipment damage due to overheating.	D	A-1816 A-1828	I, A I, A	S S
PL-427	3.3.3.1.0-5	(U) The Platform Aerostat, GSE, and MMS subsystems shall power up into a safe state.	D	A-2132 A-2133	D, A, I D, A, I	S S
PL-428	3.3.3.1.0-6	(U) Provided that power is restored within the life cycle of the emergency battery subsystem, the Platform shall survive without damage and return to operational performance upon the restoration of 400 Hz power. The batteries within the airborne emergency power subsystem may need to be	D	A-2158 A-2159	D, A, I D, A, I	S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		replaced/replenished as required.				
PL-429	3.3.3.1.0-7	(U) The Platform shall utilize safety warning signs and labels which are compliant with ANSI Z535 (2002) American National Standard for Product Safety Signs and Labels.	I	A-2092 A-2093	I I	D D
PL-431	3.3.3.1.0-8	(U) The Platform shall have a configuration that prevents equipment from tipping over or falling on personnel performing operations, maintenance, or training tasks.	I	A-1818	I, A	S
PL-432	3.3.3.1.0-9	(U) The Platform shall have lift points that are clearly labeled.	I	A-1818	I, A	S
PL-433	3.3.3.1.0-10	(U) The Platform shall have a combination of warning labels, procedures, guards, and safety devices to preclude contact with moving mechanical parts such as gears, fans, and belts during operation and maintenance.	I	A-1818	I, A	S
PL-434	3.3.3.1.0-11	(U) Platform devices used to stop and secure movable parts shall have locking features.	I	A-1818	I, A	S
PL-436	3.3.3.1.0-12	(U) Rechargeable batteries used in Platform hardware shall have enclosures as required to prevent the buildup of flammable gas.	I	A-3864	I, A	D
PL-437	3.3.3.1.0-13	(U) The Platform MMS Machinery Enclosure shall have fire extinguishers, smoke alarms, and carbon monoxide detectors.	I	A-3864	I, A	D
PL-439	3.3.3.1.0-14	(U) The Platform interlocks shall be self-resetting. A self-resetting interlock automatically resets the interlock to function normally upon closing the associated door, cover or plate.	D	A-1837 A-1838	I, A I, A	S S
PL-440	3.3.3.1.0-15	(U) The Platform interlocks shall be redundant. Redundant is defined as the use of multiple functionally similar components. The interlocks must be free of common mode failure.	I	A-1837 A-1838	I, A I, A	S S
PL-441	3.3.3.1.0-16	(U) The Platform shall use self-sealing	I	A-1816	I, A	S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		connectors for coolant lines to reduce the likelihood of coolant leakage during Platform maintenance as appropriate.		A-1828	I, A	S
PL-442	3.3.3.1.0-17	(U) The Platform shall have emergency lighting capability inside the MMS Machinery Enclosure upon power failure.	D	A-1820 A-1827	I, A I, A	D D
PL-443	3.3.3.1.0-18	(U) Over the expected life of the Platform, the design shall mitigate Catastrophic Hazards to a probability of occurrence of less than 1 in 1,000,000 using at least three barriers, one of which is a safety device.	A, I	A-1816 A-1817 A-1818 A-1820 A-1827 A-1828 A-1837 A-1838 A-3864 A-10316 A-10317 A-10318 A-10319	I, A I, A I, A I, A I, A I, A I, A I, A I, A I, A I, A I, A I, A	S S S D D S S S D S S S D
PL-444	3.3.3.1.0-19	(U) Over the expected life of the Platform, the design shall mitigate Critical Hazards to a probability of occurrence of less than 1 in 1,000 using at least two barriers, one of which is a safety device.	A, I	A-1816 A-1817 A-1818 A-1820 A-1827 A-1828 A-1834 A-1835 A-1837 A-1838 A-2088 A-2089 A-3864 A-10316 A-10317 A-10318	I, A I, A I, A I, A I, A I, A I, D, A I, D, A I, A I, A I, T, A I, T, A I, A I, A I, A I, A	S S S D D S S S S S S S D S S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
				A-10319	I, A	D
PL-475	3.3.3.1.0-20	(U) The Platform shall have nonslip finishes on all surfaces which are normally accessed.	I	A-1817	I, A	S
PL-476	3.3.3.1.0-21	(U) The Platform shall provide hand railings on all ladders, stairs and around elevated regions which are normally accessed.	I	A-1817	I, A	S
PL-477	3.3.3.1.0-22	(U) The Platform shall provide safety harnesses for climbing towers, working in aerial lift baskets, and accessing/working on top of the Aerostat.	I	A-1817	I, A	S
PL-446	3.3.3.2.0-1	(U) Acoustic noise levels of the Platform shall meet levels and durations in MIL-STD-1474D, Steady State Noise, Personnel Occupied areas and MIL-STD-1472F, Acoustical Noise Hearing Protection or Electronic Communication. Noise protection may be required.	A, T	A-618 A-2090	I, T, A I, T, A	S S
PL-448	3.3.3.3.0-1	(U) The Platform shall implement grounding and bonding using MIL-STD-464A as guidance.	A, T	A-538 A-539 A-541 A-542 A-6891 A-6892	T T A, T A, T A, T A, T	L S D, L D, S D, L D, L
PL-449	3.3.3.3.0-2	(U) All electrically conductive chassis and racks of the Platform shall have a dedicated bonding point such that the item can be system bonded regardless of the electrical condition of its mounting surface.	I	A-538 A-539	T T	L S
PL-450	3.3.3.3.0-3	(U) The Platform's external chassis shall provide external grounding provisions to control electrical current flow and static charging for protecting personnel from shock.	I	A-538 A-539	T T	L S
PL-452	3.3.3.3.0-4	(U) The Platform shall utilize no glass fiber materials as the outer surface or covering on cables or wiring where they may cause skin	I	A-1825 A-1829	I, A I, A	D D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		irritation, per the guidelines of MIL-HDBK-454A, General Guidelines for Electronic Equipment, Guideline 1, Section 4.9.4.				
PL-453	3.3.3.3.0-5	(U) The Platform shall have a point on all electrically conductive chasses that will serve as the chasses' common tie point so that it may be connected to static and to safety ground as shown in MIL-HDBK-454A, General Guidelines for Electronic Equipment, Guideline 1, Ground.	I	A-1825 A-1829	I, A I, A	D D
PL-457	3.3.3.3.0-6	(U) The Platform shall provide local emergency power shutdown capability at occupied locations and shelters.	D	A-1831 A-1832	I, D, A I, D, A	S S
PL-458	3.3.3.3.0-7	(U) The Platform shall have at least 3 barriers, to preclude accidental contact under all conditions of operation and maintenance, for all potentials between 30V and 500V.	I	A-1837 A-1838	I, A I, A	S S
PL-459	3.3.3.3.0-8	(U) The Platform shall prevent shorting of circuits carrying more than 25A. Appropriate means may include guards and warning labels.	I	A-1837 A-1838	I, A I, A	S S
PL-460	3.3.3.3.0-9	(U) The Platform assemblies which contain circuits operating at potentials in excess of 500 volts shall be completely enclosed with any access covers and plates equipped with non-bypassable interlocks that activate to shut down power.	I	A-1837 A-1838	I, A I, A	S S
PL-461	3.3.3.3.0-10	(U) The Platform shall have visible markings for LRUs sensitive to Electrostatic Discharge (ESD).	A, I	A-1837 A-1838	I, A I, A	S S
PL-462	3.3.3.3.0-11	(U) The Platform shall have Ground Fault Circuit Interrupters (GFCI) for all external single-phase, 60-Hz outlets.	I	A-1837 A-1838	I, A I, A	S S
PL-463	3.3.3.3.0-12	(U) The Platform circuits with voltages over 30 V containing capacitors which store more than 0.25 joules shall have discharging devices	A, I	A-1825 A-1829	I, A I, A	D D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		unless they discharge to 30 V or less within 2 seconds after power removal for maintenance purposes. NOTE: This does not apply to batteries.				
PL-464	3.3.3.3.0-13	(U) Platform connectorized power sources which provide 70V or greater shall present no catastrophic hazards with a probability greater than 0.000001 associated with mating, demating, and handling of the cables.	A, I	A-1837 A-1838	I, A I, A	S S
PL-465	3.3.3.3.0-14	(U) The Platform shall ensure that powered ends of connectors are protected from accidental contact.	I	A-1837 A-1838	I, A I, A	S S
PL-466	3.3.3.3.0-15	(U) The Platform shall have a means to reduce the voltage at test points to less than 300V if the potential to be measured is in excess of 300V peak.	A, I	A-1837 A-1838	I, A I, A	S S
PL-467	3.3.3.3.0-16	(U) The Platform shall use applicable portions of MIL-HDBK-454A, Guidelines on Personnel Hazards, Flammability, and Electrical Overload Protection.	A, I	A-1825 A-1829	I, A I, A	D D
PL-469	3.3.3.3.0-17	(U) The Platform shall have external conductive surfaces of equipment housing hazardous voltages grounded to a common static and safety ground point.	I	A-1837 A-1838	I, A I, A	S S
PL-471	3.3.3.4.0-1	(U) The Platform shall provide physical guards to prevent inadvertent exposure of personnel to surface temperatures outside of the maximum/minimum recommended in MIL-STD-1472F, Table XXI, or less than 0° C (32°F) except for surface temperatures induced by the climatic environment.	A, I	A-2088 A-2089	I, T, A I, T, A	S S
PL-473	3.3.3.4.0-2	(U) The Platform MMS shall provide methods to allow dual path ingress and egress to and from the confined area of the machinery enclosure.	I	A-3864	I, A	D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-474	3.3.3.4.0-3	(U) The Platform shall incorporate provisions to protect personnel from electromagnetic radiation from any of its equipment operating at ground level if such radiation exceeds the permissible levels (controlled and uncontrolled) as specified in IEEE C95.1-2005.	A, I	A-616	I, A	S
PL-479	3.3.3.5.0-1	(U) Any electrically initiated devices (EIDs) and electro-explosive devices (EEDs) employed within the Platform design shall be protected from inadvertent ignition and from being degraded in performance after exposure to externally radiated electromagnetic environments (EME) using MIL-STD-464A as guidance.	I	A-529 A-530	I I	D D
PL-480	3.3.3.5.0-2	(U) Any electrically initiated devices (EIDs) or electro-explosive devices (EEDs) which are incorporated in the Platform design shall be rendered safe using explosive ordnance disposal (EOD) tools, methods and technology.	I	A-526 A-527	I I	D D
PL-483	3.3.3.6.0-1	(U) The Platform equipment shall have door or hinged covers that are rounded at the corners and provided with stops to hold them open.	I	A-1825	I, A	D
PL-484	3.3.3.6.0-2	(U) The Platform equipment shall preclude sharp projections on cabinets, doors, and similar parts.	I	A-1825	I, A	D
PL-468	3.3.3.6.1.0-1	(U) The Platform equipment shall have connectors that preclude the mismatching of cables in a manner which would cause malfunction, damage to equipment, or hazard to personnel. Where design considerations require plug and receptacles of similar configuration in close proximity, the mating plugs and receptacles should be suitably coded or marked to clearly indicate the mating	I	A-1825 A-1829	I, A I, A	D D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		connectors.				
PL-492	3.3.3.7.0-1	(U) Safety interlocks of the Platform hardware shall be independent of software such that they cannot be overridden by software.	A, I	A-2135 A-2136	I, A, D I, A, D	S S
PL-494	3.3.3.7.0-2	(U) Whether the Platform software for operator stations is shutdown by an operator or occurs automatically, the Platform shall remain safe and return to full performance upon restoration of the station.	D	A-2158 A-2159	D, A, I D, A, I	S S
PL-496	3.3.4.0-1	(U) The Platform shall have work areas and equipment that accommodate a soldier population that ranges in stature from 5th percentile female to 95th percentile male as specified in MIL-STD-1472F, sections titled Physical Accommodation and Workspace Design.	A, I	A-624	I	S
PL-2109	3.3.4.0-2	(U) The Platform equipment external to CPG ground shelters shall have displays and equipment that permit performance of mission-essential operations and decontamination tasks by personnel wearing combat gear and MOPP-IV as specified in MIL-STD-1472F, sections titled Operational Environment and Use With Individual Protective Equipment.	D	A-624	I	S
PL-2110	3.3.4.0-3	(U) The Platform equipment external to CPG ground shelters shall have displays and equipment that permit performance of operations, maintenance, and support tasks by personnel wearing combat gear and cold weather gear as specified in MIL-STD-1472F, sections titled Operational Environment and Use With Individual Protective Equipment.	D	A-624	I	S
PL-2111	3.3.4.0-4	(U) The Platform shall have interchangeable line replaceable units as specified in MIL-STD-1472F, section titled Design for	A, I	A-624	I	S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		Maintainer.				
PL-498	3.3.4.0-5	(U) The Platform equipment external to CPG ground shelters shall have connectors and controls with spacing designed to be compatible with Field Level Maintenance and operation in cold weather/MOPP IV protective clothing as specified in MIL-STD-1472F, section titled Spacing.	A, I	A-620 A-624	I, D I	L S
PL-499	3.3.4.0-6	(U) The Platform MMS winch operator cab and machinery enclosure shall have ambient lighting with controls at the entrances.	I	A-624	I	S
PL-500	3.3.4.0-7	(U) The Platform shall have visual displays designed using the guidance of MIL-STD-1472F, section titled Visual Displays.	A, I	A-620	I, D	L
PL-501	3.3.4.0-8	(U) The Platform shall have audio signals designed using the guidance of MIL-STD-1472F, section titled Audio Displays.	A, I	A-620	I, D	L
PL-502	3.3.4.0-9	(U) The Platform shall have controls designed using the guidance of MIL-STD-1472F, section titled Controls.	A, I	A-620	I, D	L
PL-503	3.3.4.0-10	(U) The Platform shall have indications of equipment and system status during operation and maintenance designed using the guidance of MIL-STD-1472F, sections titled Visual Displays and Audio Displays.	A, I	A-620	I, D	L
PL-504	3.3.4.0-11	(U) The Platform shall have emergency indications and related controls designed using the guidance of MIL-STD-1472F, section titled Emergency Use.	A, I	A-620	I, D	L
PL-505	3.3.4.0-12	(U) The Platform shall have alerts and rejects designed using the guidance of MIL-STD-1472F, section titled User-Computer Interface. Alerts and rejects are defined as audio displays, visual displays, or tactile displays as shown in MIL-STD-1472F, Sections 5.14.3.8	A, I	A-620	I, D	L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		(Audio Displays) and 5.2.1.1 (Warning/Caution).				
PL-508	3.3.4.1.0-1	(U) The Platform shall have reach access for inserting, adjusting, and/or removing a unit or assembly as specified in MIL-STD-1472F, section titled Physical Access.	A, I	A-624	I	S
PL-509	3.3.4.1.0-2	(U) The Platform shall have replacement units, assemblies, and connectors that meet insertion, removal, and grip force requirements as specified in MIL-STD-1472F, section titled Design for Maintainer.	A, I	A-624	I	S
PL-510	3.3.4.1.0-3	(U) The Platform shall have visual access for corrective and preventative maintenance tasks as specified in MIL-STD-1472F, section titled Visual Access.	A, I	A-624	I	S
PL-511	3.3.4.1.0-4	(U) The Platform shall have access openings and clearance dimensions for inserting, adjusting, and/or removing a unit or assembly as specified in MIL-STD-1472F, section titled Physical Access.	A, I	A-624	I	S
PL-512	3.3.4.1.0-5	(U) The Platform shall have units and assemblies configured for removal, carrying, and replacement as specified in MIL-STD-1472F, section titled Weight.	A, I	A-624	I	S
PL-513	3.3.4.1.0-6	(U) The Platform winch operator cab shall have workstations, controls, indicators, and displays mounted for seated operations as specified in MIL-STD-1472F, section titled Seated Operations.	A, I	A-624	I	S
PL-515	3.3.4.2.0-1	(U) The Platform winch operator cab shall have environmental controls and equipment to adjust and maintain temperature, humidity, and ventilation as specified in MIL-STD-1472F, section titled Environment.	A, I	A-626 A-1746	I I	D D
PL-517	3.3.4.3.0-1	(U) The Platform shall have human-to-	A, I	A-628	I	D



ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		machine interfaces designed to use state-of-the-art computer and display technology, excluding GFE.		A-1747	I	D
PL-522	3.3.5.1.1.0-1	<b>b(3)</b>	A, I	A-634 A-635	I I	S S
PL-523	3.3.5.1.1.0-2	(U) The Platform shall incorporate the security principle of least privilege, see 6.2.	A, I	A-1671 A-1674	D D	S S
PL-2149	3.3.5.1.1.0-2.0-1	(U) The Platform shall only use binary or machine executable public domain software products or other software products, such as those commonly known as freeware or shareware, that have been assessed for information assurance impacts or which have been approved by the DoD Approving Authority.	A	A-1681 A-1682	I I	S S
PL-2148	3.3.5.1.1.0-2.0-2	<b>b(3)</b>	A	A-1678 A-1679	I I	S S
PL-2147	3.3.5.1.1.0-2.0-3	<b>b(3)</b>	A	A-1675 A-1676	I I	S S
PL-2146	3.3.5.1.1.0-2.0-4	(U) The Platform shall incorporate identification, authentication, and access	A	A-1694 A-1695	D D	S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		controls.				
PL-529	3.3.5.1.1.0-3	(U) The security support structure of the Platform shall be isolated. Means of isolation may include the use of partitions and/or domains that control access to and integrity of hardware, software, and firmware that perform security functions.	A, I	A-111698 A-111699	I I	S S
PL-525	3.3.5.1.2.0-1	<b>b(3)</b>	A	A-637 A-638	I I	S S
PL-531	3.3.5.1.2.0-2	<b>b(3)</b>	A	A-1702 A-1703	I I	D D
PL-527	3.3.5.1.2.0-3	(U) The Platform shall implement virus protection for all servers, workstations, and mobile computing devices. Virus protection software will be provided CFE.	A, I	A-643 A-644	I I	S S
PL-533	3.3.5.1.4.0-1	(U) The Platform shall implement locks and alarms for the protection of classified information systems in accordance with the appropriate level of classification.	A, I	A-1692 A-1693	I I	S S
PL-537	3.4.0-1	(U) The Platform design shall comply with the applicable information technology standards contained in the DoD Information Technology Standards Registry (DISR).	A	A-698 A-699	I, D I, D	S S
PL-544	3.5.3.0-1	(U) Except for items approved by the government JLENS Product Manager, such as the Aerostat flexible structure, the Mobile Mooring Station (MMS) and some Platform	A, I	A-599	I	D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		associated Ground Support Equipment (GSE), see 3.3.2.4.3, all JLENS equipment shall be packed for shipment using ISO containers sized at 8 ft or 8.5 ft height, 8 ft width and 20 ft length.				
PL-545	3.5.3.0-2	(U) In transport mode, the Platform equipment shall have lift and tie-down provision in accordance with MIL-STD-209K section titled Lifting Provisions and Equipment Tie-down Provisions.	A, I	A-1609	I, A	D
PL-546	3.5.3.0-3	(U) The Platform in the transport configuration shall meet the U.S. Department of Transportation (DOT), NATO, and European Union (EU) Performance-Oriented Packaging (POP) standards for unrestricted highway, rail, and sea transportation.	A, I	A-601	D, I	D, L
PL-547	3.5.3.0-4	(U) The Platform shall operate in accordance with the requirements after exposure to transportation by rail <b>b(3)</b> , road or air.	A	A-512 A-513	A, T, D A, T, D	S S
PL-548	3.5.3.0-5	(U) The Platform shall perform mission critical functions after being transported off-road to reach preselected emplacement sites over terrain and unimproved roads that meet Perryman Cross-Country Course No.1 criteria.	A	A-586	A, T	S
PL-549	3.5.3.0-6	(U) The Platform, in Road March mode, shall be transportable over primary and secondary roads (within highway permit limits). <b>b(3)</b> to reach preselected emplacement sites under the following conditions. a. Where the primary, secondary, unimproved and off-road characteristics	A	A-580 A-582 A-584	A, T A, T A, T	L L L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		do not exceed the conditions stated in the Perryman Cross Country Course No. 1 and the vibration spectra presented in section 7.2. b. Where the Perryman Cross Country Course No. 1 is defined in Vehicle Test Facilities and Aberdeen Proving Ground, U. S. Army Test and Evaluation Command, Test Operations Procedure Report Number TOP 1-1-011.				
PL-562	3.5.3.1.0-1	[REDACTED] b(3)	A	A-571	A, T	L
PL-563	3.5.3.1.0-2	[REDACTED] b(3) ISO container sizes which differ from 8' x 8' x 20', except for the ISO for the aerostat, require approval by the JLENS Government Product Manager.	A	A-573	A	L
PL-564	3.5.3.1.0-3	(U) In the appropriate operational mode, the Platform shall meet performance requirements after exposure, while in the transport configuration, to the Railroad Transportation vibrations of NGT than 0.488 g rms longitudinal, 0.488 g rms vertical, and 0.488 g rms lateral.	A	A-575	A, T	L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-565	3.5.3.1.0-4	(U) In the appropriate operational mode, the Platform shall meet performance requirements after being subjected, while in the transport configuration, to rail impact static equivalent loads NGT 5.0 g longitudinal, 3.0 g vertical and 3.0 g lateral.	A	A-519	A, T	L
PL-566	3.5.3.1.0-5	(U) In the Transport Mode, the Platform shall be transportable on highways defined in MIL-STD-1366D including an allowance for special permits where the limits for load, vibration, and shock are presented in Section 7.2 (Ground Transport).	A	A-578	A, T	L
PL-567	3.5.3.1.0-6	(U) In the Transport Mode, the Platform shall be transportable on secondary roads where the limits for load, vibration, and shock are presented in Section 7.2 (Ground Transport).	A	A-580	A, T	L
PL-568	3.5.3.1.0-7	(U) In the Transport Mode, the Platform shall be transportable on unimproved roads where the limits for load, vibration, and shock are presented in Section 7.2 (Ground Transport).	A	A-582	A, T	L
PL-569	3.5.3.1.0-8	(U) In the Transport Mode the Platform shall be transportable <b>b(3)</b>	A	A-584	A, T	L
PL-571	3.5.3.2.0-1	(U) In the Transport Mode, the Platform shall be marine transportable in accordance with MIL-STD-1366D section titled Water Transportation (Load on / Load off), where load limits and vibrations are presented in Section 7.1 (Shock and Vibration).	A	A-589	A, T	S
PL-572	3.5.3.2.0-2	(U) Brought to the appropriate operational mode the Platform shall meet performance requirements after exposure, while in transport configuration, to the Ship Transportation vibrations of NGT 0.315 g rms longitudinal, 0.315 g rms vertical, and 0.3 15 g rms lateral.	A	A-591	A, T	S
PL-574	3.5.3.3.0-1	(U) In the Transport Mode, the Platform shall	A	A-594	A, T	L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		be transportable on C-130 (except the mobile mooring station, associated peculiar support equipment and ISOs or shelters which differ from 8' x 8' x 20'), C-5 and C-17 aircraft. The shock and vibrations experienced during C-130, C-5, and C-17 aircraft transport are presented in Section 7.1 (Shock and Vibration).				
PL-575	3.5.3.3.0-2	(U) Brought to the appropriate operational mode, the Platform shall meet performance requirements after exposure, while in the transport configuration, to the aircraft random vibrations of NGT 5.17 g rms longitudinal, 5.17 g rms vertical, and 5.17 g rms lateral.	A	A-596	A, T	S
PL-577	3.5.4.0-1	(U) The Platform shall use military lifting and handling equipment, unless the government approves justification for nonmilitary equipment.	A, I	A-718	I	D
PL-579	3.5.5.0-1	b(3)	D	A-731 A-732	D D	S S
PL-580	3.5.5.0-2	b(3)	D	A-734 A-735	D D	S S
PL-586	3.7.1.0-2	(U) The Platform shall be designed such that it can be used for the Surveillance System and the Fire Control System.	A, I	A-761	I	D

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-587	3.7.1.0-3	(U) The Platform shall control EMI characteristics of subsystems using MIL-STD-461E as a guideline.	A	A-533 A-7049 A-7050	T T T	L, S L L
PL-591	3.7.1.1.0-3	(U) The Aerostat shall elevate a distributed payload of 7,000 lb to 10,000 ft. altitude MSL from a sea level pad with a pad temperature of 49 °C at zero wind.	A, T	A-774	A, T	S
PL-592	3.7.1.1.0-4	(U) The Aerostat shall carry a Mode 3C transponder that can be enabled and disabled from the flight director's station within the ground CPG. <b>b(3)</b>	I, D	A-759	D	L
PL-593	3.7.1.1.0-5	<b>b(3)</b>	A, T	A-776	I, T, A	L
PL-594	3.7.1.1.0-6	(U) The Aerostat shall include visible and IR strobe lighting which can be operator selected .	D	A-782	D	L
PL-595	3.7.1.1.0-7	(U) At the lift check prior to the mission, the Aerostat shall have 15% of Standard Gross Lift at operational altitude.	A, D	A-774	A, T	S
PL-596	3.7.1.1.0-8	(U) The Aerostat shall meet appropriate safety requirements for airborne platforms as specified by the Federal Aviation Administration (FAA) and the international community.	A, I	A-6376	I	D
PL-597	3.7.1.1.0-9	(U) The Aerostat shall include strobe lights and beacon transponder allowing flights in Visual Flight Rules (VFR) conditions.	I	A-798	I	S
PL-598	3.7.1.1.0-10	<b>b(3)</b>	I,D	A-800	I	S
PL-599	3.7.1.1.0-11	(U) Flight termination receivers on the Aerostat shall preclude inadvertent activation by unauthorized sources.	A	A-777	A, T	L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
PL-600	3.7.1.1.0-12	b(3)	A, D	A-778	I, T, A	L
PL-601	3.7.1.1.0-13	b(3)	A	A-776 A-778	I, T, A I, T, A	L L
PL-602	3.7.1.1.0-14	(U) The Aerostat's strobe lighting shall have operator control to enable it to be turned on and off during flight.	D	A-782	D	L
PL-604	3.7.1.2.0-8	b(3)	A, T	A-764 A-767	D, A D, A	L L
PL-605	3.7.1.2.0-9	b(3)	A, T	A-765 A-768	D, A D, A	L L
PL-607	3.7.1.2.0-10	(U) The MMS winch cab operator station shall have human-to-machine interfaces which are designed to use state-of-the-art computer and display technology.	A, I	A-628 A-1747	I I	D D
PL-608	3.7.1.2.0-11	(U) In order to minimize the probability of being detected, targeted and damaged, the MMS shall be colored to minimize its visible signature.	I	A-1657	I	D
PL-611	3.7.1.3.0-1	(U) The Tether shall have sufficient design margin to reduce the Mishap Risk Category to "Medium" or "Low" as defined in Table A-IV of MIL-STD-882D, Appendix A.	A, I	A-1820 A-1827 A-2150 A-2151	I, A I, A D, A, I D, A, I	D D S S
PL-612	3.7.1.3.0-2	(U) The Tether shall provide mechanical connection between the mooring station and	I, D	A-789 A-792	A I	L L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		the Aerostat as well as a means to control the Aerostat operating altitude.				
PL-613	3.7.1.3.0-3	b(3)	A, I	A-794	I	D
PL-614	3.7.1.3.0-4	b(3)	A, I	A-791	I	L
PL-616	3.7.1.3.0-5	b(3)	I	A-538 A-539	T T	L S
PL-618	3.7.1.4.0-3	(U) The Platform GSE shall include equipment to monitor and record meteorological data and flight conditions where meteorological data includes temperature, precipitation, humidity, wind velocity, barometric pressure and icing.	D	A-802	I	L
PL-619	3.7.1.4.0-4	(U) The Platform meteorological subsystem shall have a minimum range to allow time for the Aerostat to be inhaled and moored for protection against thunderstorms and winds that exceed the limits defined in the Natural Environmental conditions in 3.7.1.	A	A-804	D, A	L
PL-620	3.7.1.4.0-5	(U) Ground based detection, monitoring, and recording for lightning shall be provided.	I, D	A-802 A-3864	I I, A	L D
PL-621	3.7.1.4.0-6	(U) A weather radar shall be provided that can be enabled and disabled from the flight director's station within the ground CPG.	I, D	A-6424	D	L
PL-622	3.7.1.4.0-7	(U) The Platform shall include software to allow control of critical airborne subsystems, and for general monitoring and recording in near real time of Aerostat and MMS data.	A, D	A-679 A-680	T T	S S
PL-623	3.7.1.4.0-8	b(3)	I	A-800	I	S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		b(3)				
PL-624	3.7.1.4.0-9	(U) The operator station software in the Platform shall be designed to utilize human-to-machine interfaces associated with state-of-the-art computer and display technology.	A, I	A-628 A-1747	I I	D D
PL-625	3.7.1.4.0-10	(U) The Platform shall have an inherent 50% reserve data processing capability, computer memory, and computer throughput at the time of software requirements validation. Note: The COTS weather radar is not included in this allocation as the software is not available for upgrade or modification.	A	A-669 A-670	T T,A	L L
PL-627	3.7.1.4.1.0-1	b(3)	A	A-122 A-123	T, A T, A	S S
PL-628	3.7.1.4.1.0-2	b(3)	D	A-108 A-109	T T	S S
PL-629	3.7.1.4.1.0-3	b(3)	T	A-108 A-109	T T	S S
PL-630	3.7.1.4.1.0-4	b(3)	D	A-108 A-109	T T	S S
PL-631	3.7.1.4.1.0-5	b(3)	D	A-108 A-109	T T	S S
PL-636	3.7.1.4.1.0-6	b(3)	A, D	A-114 A-119	I, D D, I	S S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		<b>b(3)</b>				
PL-637	3.7.1.4.1.0-7	<b>b(3)</b>	A, D	A-115 A-120	D, I D, I	S S
PL-638	3.7.1.4.1.0-8	<b>b(3)</b>	A, D	A-3777 A-3778	D, I D, I	S S
PL-639	3.7.1.4.1.0-9	<b>b(3)</b>	D	A-800	I	S
PL-640	3.7.1.4.1.0-10	<b>b(3)</b>	A, T	A-796	T	L
PL-641	3.7.1.4.1.0-11	<b>b(3)</b>	I, A	A-111709 A-111712	I I	D D
PL-642	3.7.1.4.1.0-12	<b>b(3)</b>	A, T	A-796	T	L
PL-643	3.7.1.4.1.0-13	<b>b(3)</b>	A, T	A-796	T	L
PL-644	3.7.1.4.1.0-14	<b>b(3)</b>	T	A-796	T	L
PL-645	3.7.1.4.1.0-15	<b>b(3)</b>	A, T	A-796 A-6318	T T	L L
PL-646	3.7.1.4.1.0-16	<b>b(3)</b>	D	A-800	I	S

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		<b>b(3)</b>				
PL-647	3.7.1.4.1.0-17	<b>b(3)</b>	I	A-108 A-109	T T	S S
PL-648	3.7.1.4.1.0-18	<b>b(3)</b>	I	A-108 A-109	T T	S S
PL-653	3.7.1.4.1.0-19	<b>b(3)</b>	D	A-800	I	S
PL-654	3.7.1.4.1.0-20	<b>b(3)</b>	A, D	A-800	I	S
PL-2135	3.7.1.4.1.0-21	<b>b(3)</b>	I	A-800	I	S
PL-656	3.7.1.4.2.0-1	(U) The GSE shall include gaseous helium storage.	I	A-722	I	S
PL-658	3.7.1.4.2.0-3	(U) The GSE shall include sufficient helium to provide two (2) fills for the Aerostat plus a 120-day mission.	A, I	A-724	I	S
PL-660	3.7.1.4.3.0-1	(U) The Platform GSE shall include the following types of support equipment. The determination of Contractor Furnished Equipment (CFE) or Government Furnished Equipment (GFE) will be made at a later date: <ul style="list-style-type: none"> <li>a. 70 foot (minimum) crane with minimum lift of 30 tons,</li> <li>b. Trackcat with auger drive and accessories,</li> <li>c. Organic vehicles equipped with winches,</li> <li>d. 150-foot aerial lift maintenance vehicle,</li> </ul>	I	A-599 A-802	I I	D L

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ID	Section	Platform PIDS Requirement	Verification Method	A-Spec ID	A-Spec Verification Method	A-Spec Verification Class
		e. Aerostat Snubber Vehicles, f. Tools and test equipment, g. MPU-810 Power Units, h. Mobile Flood Lights, i. Forklift (10 ton), and j. Trailers.				
PL-662	3.7.2.0-1	(U) The Platform software shall continuously record organic weather data for NLT 12 hours.	A, D	A-694 A-695	D D	S S
PL-663	3.7.2.0-2	(U) The Platform software shall report weather data to the associated ground CPG equipment.	T	A-2180	T	L
PL-664	3.7.2.0-3	(U) The Platform software shall report Platform status data, including telemetry data and deployed tether length, to the associated ground CPG equipment.	T	A-2181	D	L
PL-665	3.7.2.0-4	(U) The Platform software shall include all available data recording details in the automatic level.	A, D	A-691 A-692	D D	L L
PL-666	3.7.2.0-5	(U) The Platform software shall have a data interface with the ground CPG for Platform status transfer.	A, I	A-111709 A-111712	I I	D D
PL-668	3.7.2.0-6	(U) The Platform operator station software shall deliver safety critical alerts to the operator.	D	A-2144 A-2145	D, A, I D, A, I	S S
PL-669	3.7.2.0-7	(U) The Platform operator station software shall display hazardous condition alerts.	D	A-2147 A-2148	D, A, I D, A, I	S S
PL-670	3.7.2.0-8	(U) The Platform operator station software shall monitor temperature within critical hardware to provide alerts of hazardous temperature extremes.	D	A-1816 A-1828	I, A I, A	S S

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## 5 (U) Preparation for Delivery

(U) Preservation, packaging, marking and labeling will be in accordance with MIL-STD-2073D, 10 May 2002, adequate to ensure safe arrival at destination. MIL-STD-129P, 12 December 2002, marking requirements will apply to shipments of non-hazardous materials moving wholly or in part within the Department of Defense transportation system and ASTM designation D3951-90 will apply to commercial transportation shipments. Marking requirements for shipment of hazardous materials will be in accordance with CFR Title 49, MIL-STD-129P and TM-38-250.

## 6 (U) Notes

### 6.1 (U) Acronyms

AC	Alternating Current
AFOI	Airborne Fiberoptic Interface
AMSL	Above Mean Sea Level
	<b>b(3)</b>
ARS	Attitude Reference System
	<b>b(3)</b>
	<b>b(3)</b>
C	Celsius
CASE	Computer Aided Software Engineering
CI	Configuration Item or Critical Item
CTT	Commanders Tactical Terminal
CDRL	Contract Data Requirements List
CEP	Cooperative Engagement Processing
CFE	Customer Furnished Equipment
CIDS	Critical Item Development Specification
CHS	Common Hardware and Software
COMSEC	Communications Security
COTS	Commercial Off-The-Shelf
CPG	Communications and Processing Group
CS	Communications Subsystem
DC	Direct Current
DDS	Data Distribution System
DLA	Defense Logistics Agency
DOT	Department of Transportation
EED	Electro-explosive Device
EID	Electrically Initiated Device
EM	Electromagnetic
EOO	Environment of Opportunity
D-EOO	Demonstrated in an Environment of Opportunity
EU	European Union
FAT	Factory Acceptance Testing
FCR	Fire Control Radar
FD	Flight Director
FD	Flight Directors Station
FVT	Functional Verification Test
GFE	Government Furnished Equipment
GFOI	Ground Fiberoptic Interface
GOTS	Government Off-The-Shelf
GPS	Global Positioning System
GSE	Ground Support Equipment
HW	Hardware

hr	hour
Hz	Hertz
IAW	In accordance with
ICD	Interface Control Document
IFF	Identification Friend or Foe
INFOSEC	Information Security
ISO	International Standards Organization
JLENS	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System
JSS	JLENS System Specification
kA	Kilo Amperes
kft	Kilo feet
km	Kilometer
kVA	Kilo Volt Amps
LACMD	Land Attack Cruise Missile Defense
LAN	Local Area Network
lb	Pounds
LEMP	Lightning Electromagnetic Pulse
LRU	Line Replaceable Unit
MHz	Megahertz
MMD	Mass Median Diameter
MOPP	Mission Oriented Protective Posture
MMS	Mobile Mooring Station
mph	Miles per Hour
MS	Mission Support
MSL	Mean Sea Level
MTBSA	Mean Time Between System Aborts
MTTR	Mean Time to Repair
NBC	Nuclear, Biological, Chemical
NLT	No Later Than
OPSEC	Operational Security
PCU	Power Conversion Unit
PIDS	Prime Item Development Specification
PM&C	Platform Monitoring and Control
PMCS	Preventive Maintenance Checks and Services
POP	Performance Oriented Packaging
RF	Radio frequency
RTVM	Requirements Traceability and Verification Matrix
SDRL	Subcontract Data Requirements List
SSPP	System Safety Program Plan
SuR	Surveillance Radar
SW	Software
T&E	Test and Evaluation
TBD	To Be Determined
TPM	Test Performance Measure
V/m	Volts per meter
WDM	Wavelength Division Multiplexer

## 6.2 Glossary of Definitions

**(U) Active Power Source** - A power source, that when a load is applied to it, requires 0.5 seconds or less of total response time before it can carry that load, within the specified voltage tolerance limits of the system it is powering.

**(U) Best Commercial Practices** - "Best Commercial Practices" is defined by the best of private-sector business practices.

(U) **Condition Based Maintenance (CBM)** - An estimation of remaining useful life of a device based on information linked to the mission critical failure mode(s) that represents the severity of the failure mode(s) as a function of time.

(U) **Fragile component** - Equipment which can not withstand a [REDACTED] b(3) bottom face flat drop of the ISO within which it is packaged for the Movement State.

(U) **LEMP**- Lightning Electromagnetic Pulse is defined as an electromagnetic pulse (EMP) generated by a lightning strike or in the vicinity (within approximately 1.5 kilometers) of a lightning event.

(U) **Mission Critical Functions** - The Platform mission critical functions are:

- a. Launch, Operations, Retrieval and Mooring,
- b. Lightning Protection,
- c. Platform Monitoring and Control,
- d. Payload Systems Attachment and Support,
- e. Electric Power Conversion, Transmission and Distribution,
- f. Data Link Medium, and
- g. Maintenance Support.

(U) **Non-fragile components** - Equipment which can withstand a [REDACTED] b(3) bottom face flat drop of the ISO within which it is packaged for the Movement State.

(U) **Reliability Centered Maintenance (RCM)** - An estimation of remaining useful life of a device based on measured and/or predicted time usage of the device and predicted device reliability.

(U) **Prognostic Information** - Data that can support prediction of remaining useful life of mission critical hardware using Reliability Centered Maintenance (RCM) or Condition Based Maintenance (CBM).

(U) **Security Principle of Least Privilege** - Users are only allowed to access the minimum information required to perform their duties. (Access control) Requires that in a particular abstraction layer of a computing environment, every module (such as a process, a user or a program on the basis of the layer being considered) must be able to access only such information and resources that are necessary to its legitimate purpose.

(U) **Survive/Survival** - In the context of the air vehicle, "survival" means that when exposed to any single threatening event, the air vehicle can be recovered from flight albeit repairs to the structure and/or rigging may be needed before entering a new flight. Furthermore, any resulting damage can be repaired in the field without returning to the factory. In the context of the Platform components excluding the air vehicle, unless otherwise noted, "survive" means that when exposed to any single threatening event, the components may need repairs, which meet the Platform MTTR.

(U) **System Peculiar Equipment** - Within JLENS, system peculiar (or unique) equipment is defined as anything associated with the radars or Platform while everything else is considered common equipment.

(U) **Tending Toward Saturation** - An industry term used to describe Relative Humidity in cold air temperatures. Since colder air has the capacity to hold less humidity than warm air, the term Tending Toward Saturation is used to indicate a condition in which precipitation will likely occur.



## 6.3 System Specification Traceability Matrix

Table I A-Spec RevN : Platform Compliance View

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
A-15	3.2.1.1.1.1.0-1	(U) The Surveillance System shall be designed for land-based operations on a prepared site, see 6.2.	PL-131	3.2.1.1.0-3
A-24	3.2.1.1.1.1.0-2	(U) The Fire Control System shall be designed for land-based operations on a prepared site, see 6.2.	PL-131	3.2.1.1.0-3
A-17	3.2.1.1.1.2.0-1	b(3)	PL-132	3.2.1.1.0-4
A-26	3.2.1.1.1.2.0-2	b(3)	PL-132	3.2.1.1.0-4
A-391	3.2.1.2.3.11.0-1	(U) The Surveillance System shall incorporate an emission control (EMCON) capability which reduces all radiated energy in compliance with MIL-STD-464A, Section titled <i>Emission control (EMCON)</i> , see Appendix H, within 2 seconds of command.	PL-404	3.2.5.2.4.0-4
A-10312	3.2.1.2.3.11.0-2	b(3)	PL-2142	3.2.5.2.4.0-5
A-122	3.2.1.2.3.12.2.0-1	(U) The Surveillance System, while in the appropriate operational mode, shall meet performance requirements in 3.2.1.2 <i>Surveillance System</i> while operating on power supplied from the U.S commercial power system.	PL-627 PL-238	3.7.1.4.1.0-1 3.2.2.3.1.4.2.0-1
A-108	3.2.1.2.3.12.3.0-1	(U) The Surveillance System shall use redundant standard DoD generators as an alternate for power where commercial power is not available.	PL-648 PL-647 PL-628 PL-240 PL-631 PL-630 PL-629	3.7.1.4.1.0-18 3.7.1.4.1.0-17 3.7.1.4.1.0-2 3.2.2.3.1.4.2.0-2 3.7.1.4.1.0-5 3.7.1.4.1.0-4 3.7.1.4.1.0-3
A-114	3.2.1.2.3.12.5.0-1	(U) The Surveillance System, while in an operational mode, shall automatically transfer from primary power to an active backup power source, when the primary power becomes insufficient for operations, without system interruption.	PL-636	3.7.1.4.1.0-6
A-115	3.2.1.2.3.12.5.0-2	(U) The Surveillance System, while in an operational mode, shall provide for manual transfer from primary power to an active backup power source without system	PL-637	3.7.1.4.1.0-7

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		interruption.		
A-3778	3.2.1.2.3.12.5.0-3	(U) The Surveillance System, while in an operational mode, shall provide for manual transfer from backup power to an active primary power source system interruption.	PL-638	3.7.1.4.1.0-8
A-669	3.2.1.2.3.14.0-1	(U) The Surveillance System, with the exception of the signal processor, shall be designed such that there is an inherent 50% reserve, see 6.2, computer memory and computer throughput for data processing.	PL-625	3.7.1.4.0-10
A-688	3.2.1.2.3.15.7.0-1	(U) The Surveillance System shall provide non-volatile data storage devices with removable media.	PL-311	3.2.4.2.0-3
A-694	3.2.1.2.3.15.8.0-1	(U) The Surveillance System shall continuously record organic weather data for NLT 12 hours.	PL-662	3.7.2.0-1
A-691	3.2.1.2.5.5.0-1	(U) The Surveillance System shall have manual controls for selecting data recording details in addition to the automatic level, see 3.2.1.2.3.13 <i>Data Recording</i> .	PL-665	3.7.2.0-4
A-392	3.2.1.3.3.11.0-1	(U) The Fire Control System shall incorporate an emission control (EMCON) capability which reduces all radiated energy in compliance with MIL-STD-464A, Section titled <i>Emission control (EMCON)</i> , see Appendix H, within 2 seconds of command.	PL-404	3.2.5.2.4.0-4
A-10313	3.2.1.3.3.11.0-2	b(3)	PL-2142	3.2.5.2.4.0-5
A-123	3.2.1.3.3.12.2.0-1	(U) The Fire Control System, while in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> while operating on power supplied from the U.S commercial power system.	PL-627	3.7.1.4.1.0-1
A-109	3.2.1.3.3.12.3.0-1	(U) The Fire Control System shall use redundant standard DoD generators as an alternate for power where commercial power is not available.	PL-648 PL-647 PL-628 PL-631 PL-630 PL-629	3.7.1.4.1.0-18 3.7.1.4.1.0-17 3.7.1.4.1.0-2 3.7.1.4.1.0-5 3.7.1.4.1.0-4 3.7.1.4.1.0-3
A-119	3.2.1.3.3.12.5.0-1	(U) The Fire Control System, while in an operational mode, shall automatically transfer from primary power to an active backup power source, when primary power becomes insufficient for operations, without system interruption.	PL-636	3.7.1.4.1.0-6
A-120	3.2.1.3.3.12.5.0-2	(U) The Fire Control System, while in an operational mode, shall provide for manual transfer from primary power to an active backup power source without system interruption.	PL-637	3.7.1.4.1.0-7
A-3777	3.2.1.3.3.12.5.0-3	(U) The Fire Control System, while in an operational mode, shall provide for manual transfer from backup power to an active primary power source without system interruption.	PL-638	3.7.1.4.1.0-8
A-670	3.2.1.3.3.14.0-1	(U) The Fire Control System, with the exception of the	PL-625	3.7.1.4.0-10

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		signal processor, shall be designed such that there is an inherent 50% reserve computer memory and computer throughput for data processing.		
A-689	3.2.1.3.3.15.7.0-1	(U) The Fire Control System shall provide non-volatile data storage devices with removable media.	PL-311	3.2.4.2.0-3
A-695	3.2.1.3.3.15.8.0-1	(U) The Fire Control System shall continuously record organic weather data for NLT 12 hours.	PL-662	3.7.2.0-1
A-692	3.2.1.3.5.5.0-1	(U) The Fire Control System shall have manual controls for selecting data recording details in addition to the automatic level, see 3.2.1.3.3.13 <i>Data Recording</i> .	PL-665	3.7.2.0-4
A-111715	3.2.2.1.0-1	(U) The Surveillance System shall have external interfaces in accordance with the JLENS System External IRS.		
A-111714	3.2.2.1.0-2	(U) The Fire Control System shall have external interfaces in accordance with the JLENS System External IRS.		
A-111712	3.2.2.2.0-1	(U) The Surveillance System shall have internal interfaces in accordance with the JLENS System Internal IRS.	PL-154 PL-155 PL-200 PL-201 PL-203 PL-204 PL-209 PL-210 PL-230 PL-231 PL-235 PL-236 PL-241 PL-242 PL-243 PL-247 PL-248 PL-641 PL-666 PL-153	3.2.1.6.0-3 3.2.1.6.0-4 3.2.2.3.1.1.1 .0-1 3.2.2.3.1.1.1 .0-2 3.2.2.3.1.1.2 .0-1 3.2.2.3.1.1.2 .0-2 3.2.2.3.1.1.4 .0-1 3.2.2.3.1.1.4 .0-2 3.2.2.3.1.3.4 .0-1 3.2.2.3.1.3.4 .0-2 3.2.2.3.1.4.1 .0-1 3.2.2.3.1.4.1 .0-2 3.2.2.3.1.4.2 .0-3 3.2.2.3.1.4.2 .0-4 3.2.2.3.1.4.2 .0-5 3.2.2.3.1.4.4 .0-1 3.2.2.3.1.4.4 .0-2 3.7.1.4.1.0-11 3.7.2.0-5 3.2.1.6.0-2

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
A-111709	3.2.2.2.0-2	(U) The Fire Control System shall have internal interfaces in accordance with the JLENS System Internal IRS.	PL-154	3.2.1.6.0-3
			PL-155	3.2.1.6.0-4
			PL-200	3.2.2.3.1.1.1
			PL-201	.0-1
			PL-203	3.2.2.3.1.1.1
			PL-204	.0-2
			PL-209	3.2.2.3.1.1.2
			PL-210	.0-1
			PL-230	3.2.2.3.1.1.2
			PL-231	.0-2
			PL-235	3.2.2.3.1.1.4
			PL-236	.0-1
			PL-241	3.2.2.3.1.1.4
			PL-242	.0-2
			PL-243	3.2.2.3.1.3.4
			PL-247	.0-1
			PL-248	3.2.2.3.1.3.4
			PL-641	.0-2
			PL-666	3.2.2.3.1.4.1
			PL-153	.0-1
				3.2.2.3.1.4.1
				.0-2
				3.2.2.3.1.4.2
	.0-3			
	3.2.2.3.1.4.2			
	.0-4			
	3.2.2.3.1.4.2			
	.0-5			
	3.2.2.3.1.4.4			
	.0-1			
	3.2.2.3.1.4.4			
	.0-2			
	3.7.1.4.1.0-11			
	3.7.2.0-5			
	3.2.1.6.0-2			
A-1657	3.2.3.1.0-1	(U) All exterior metal surfaces of ground based equipment and the exterior surfaces of airborne enclosures external to the windscreen and aerostat excluding the SEMS and non-GFE Communications Payload airborne enclosures and support equipment shall be painted with Chemical Agent Resistant Coating (CARC), in accordance with H372287, with exterior topcoat 383 Green (color 34094 of Fed-Std-595).	PL-608 PL-387	3.7.1.2.0-11 3.2.5.2.1.0-9
A-112573	3.2.3.1.0-2	(U) All exterior surfaces of non-GFE Communications Payload airborne enclosures external to both the windscreen and the aerostat; the surfaces of the Hull Measurement System which are exterior to the aerostat; and all Platform airborne frames and racks shall be painted with Chemical Agent Resistant Coating (CARC), in accordance with H372287, with exterior	PL-2154	3.2.5.2.1.0-9.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		topcoat white (color 37875 of Fed-Std-595).		
A-1661	3.2.3.2.0-1	(U) JLENS enclosures which are mounted on the aerostat, exterior to the windscreen, and have the purpose to protect the equipment interior from NBC shall protect internal equipment from contamination, see 6.2, caused by an NBC event as described in 3.2.5.2.9.1 <i>Nuclear, Biological, and Chemical, Definitions.</i>	PL-377	3.2.5.2.1.0-4
A-599	3.2.3.3.0-1	(U) Except for items approved by the government JLENS Product Manager, the aerostat flexible structure, the Mobile Mooring Station (MMS) and some Platform associated Ground Support Equipment (GSE), see 6.2, all JLENS equipment shall be packed for shipment using 8 or 8.5 ft height, 8 ft width and 20 ft length ISO containers.	PL-660 PL-544	3.7.1.4.3.0-1 3.5.3.0-1
A-346	3.2.4.2.1.0-1	(U) While in an operational mode, the Surveillance System shall continually monitor the system's operational status. Operational status for the system is collected in the Communication and Processing Group Prime Item.	PL-310	3.2.4.2.0-2
A-347	3.2.4.2.1.0-2	(U) While in an operational mode, the Fire Control System shall continually monitor the system's operational status. Operational status for the system is collected in the Communication and Processing Group Prime Item.	PL-310	3.2.4.2.0-2
A-349	3.2.4.2.2.0-1	b(3)	PL-311	3.2.4.2.0-3
A-350	3.2.4.2.2.0-2	b(3)	PL-311	3.2.4.2.0-3
A-352	3.2.4.2.3.0-1	b(3)	PL-313 PL-312	3.2.4.2.0-5 3.2.4.2.0-4
A-1839	3.2.4.2.3.0-2	b(3)	PL-316	3.2.4.2.0-8
A-353	3.2.4.2.3.0-3	b(3)	PL-313 PL-312	3.2.4.2.0-5 3.2.4.2.0-4
A-1840	3.2.4.2.3.0-4	b(3)	PL-316	3.2.4.2.0-8

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		b(3)		
A-355	3.2.4.2.4.0-1	b(3)	PL-317	3.2.4.2.0-9
A-356	3.2.4.2.4.0-2	b(3)	PL-317	3.2.4.2.0-9
A-358	3.2.4.2.5.0-1	b(3)	PL-320	3.2.4.2.0-12
A-6389	3.2.4.2.5.0-2	b(3)	PL-319	3.2.4.2.0-11
A-359	3.2.4.2.5.0-3	b(3)	PL-320	3.2.4.2.0-12
A-6390	3.2.4.2.5.0-4	b(3)	PL-319	3.2.4.2.0-11
A-361	3.2.4.2.6.0-1	b(3)	PL-321	3.2.4.2.0-13
A-367	3.2.4.2.7.0-1	b(3)	PL-315	3.2.4.2.0-7
A-368	3.2.4.2.7.0-2	b(3)	PL-315	3.2.4.2.0-7
A-370	3.2.4.2.8.0-1	b(3)	PL-318	3.2.4.2.0-10
A-371	3.2.4.2.8.0-2	b(3)	PL-318	3.2.4.2.0-10
A-398	3.2.4.4.1.0-1	b(3)	PL-314	3.2.4.2.0-6
A-399	3.2.4.4.1.0-2	b(3)	PL-314	3.2.4.2.0-6
A-401	3.2.4.4.2.0-1	(U) The Surveillance System Prime Items shall pass all configuration checks prior to transitioning to an operational mode.	PL-314	3.2.4.2.0-6
A-402	3.2.4.4.2.0-2	(U) The Fire Control System Prime Items shall pass all configuration checks prior to transitioning to an operational mode.	PL-314	3.2.4.2.0-6
A-404	3.2.4.4.3.0-1	(U) The Surveillance System Prime Items shall have	PL-314	3.2.4.2.0-6

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		manual override of the automatic configuration checks.		
A-405	3.2.4.4.3.0-2	(U) The Fire Control System Prime Items shall have manual override of the automatic configuration checks.	PL-314	3.2.4.2.0-6
A-410	3.2.4.4.5.0-1	(U) The Surveillance System shall include a configuration log which includes the results of the configuration checks.	PL-324 PL-2136	3.2.4.2.0-16 3.2.4.2.0-17
A-411	3.2.4.4.5.0-2	(U) The Fire Control System shall include a configuration log which includes the results of the configuration checks.	PL-324 PL-2136	3.2.4.2.0-16 3.2.4.2.0-17
A-423	3.2.5.1.3.1.0-1	(U) The Surveillance System in an appropriate operational mode shall meet the performance specified in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> during exposure to an ambient temperature range from -40°C to +49°C (Mean Sea Level). Temperature as a function of altitude is provided in Appendix F.	PL-337	3.2.5.1.2.0-1
A-424	3.2.5.1.3.1.0-2	(U) The Fire Control System in an appropriate operational mode shall meet the performance specified in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> during exposure to an ambient temperature range from -40°C to +49°C (Mean Sea Level). Temperature as a function of altitude is provided in Appendix F.	PL-337	3.2.5.1.2.0-1
A-426	3.2.5.1.3.2.0-1	(U) The Surveillance System in the appropriate operational mode shall meet the performance specified in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> after exposure to an ambient temperature range from -46°C to +71°C while in the storage and movement configurations, with the allowance of environmental kits and procedures for temperature extremes.	PL-338	3.2.5.1.2.0-2
A-427	3.2.5.1.3.2.0-2	(U) The Fire Control System in the appropriate operational mode shall meet the performance specified in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> after exposure to an ambient temperature range from -46°C to +71°C while in the storage and movement configurations, with the allowance of environmental kits and procedures for temperature extremes.	PL-338	3.2.5.1.2.0-2
A-429	3.2.5.1.4.1.0-1	(U) The Surveillance System, in an appropriate operational mode, shall meet all performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> during exposure to a relative humidity range from 3 to 100% non-condensing.	PL-340	3.2.5.1.3.0-1
A-431	3.2.5.1.4.1.0-2	(U) The Fire Control System, in an appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> during exposure to a relative humidity range from 3 to 100% non-condensing.	PL-340	3.2.5.1.3.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
A-7058	3.2.5.1.4.2.0-1	(U) The Surveillance System, in an appropriate operational mode, shall meet all performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> after exposure, while in the deployment, storage and movement configurations, to a relative humidity range from 3 to 100% non-condensing.	PL-2151	3.2.5.1.3.0-2
A-7059	3.2.5.1.4.2.0-2	(U) The Fire Control System, in an appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> after exposure, while in the deployment, storage and movement configurations, to a relative humidity range from 3 to 100% non-condensing.	PL-2151	3.2.5.1.3.0-2
A-436	3.2.5.1.5.1.1.0-1	b(3)	PL-361	3.2.5.1.8.2.0-1
A-437	3.2.5.1.5.1.1.0-2		PL-361	3.2.5.1.8.2.0-1
A-440	3.2.5.1.5.1.2.0-1		PL-362	3.2.5.1.8.2.0-2
A-441	3.2.5.1.5.1.2.0-2		PL-362	3.2.5.1.8.2.0-2
A-444	3.2.5.1.5.2.1.0-1		PL-363	3.2.5.1.8.2.0-3
A-445	3.2.5.1.5.2.1.0-2		PL-363	3.2.5.1.8.2.0-3



A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
A-447	3.2.5.1.5.2.2.0-1	b(3)	PL-364	3.2.5.1.8.2.0-4
A-448	3.2.5.1.5.2.2.0-2	b(3)	PL-364	3.2.5.1.8.2.0-4
A-451	3.2.5.1.6.1.0-1	(U) The Surveillance System shall survive during exposure to hail up to one-half inch in diameter while in the appropriate operational mode.	PL-366	3.2.5.1.8.3.0-1
A-452	3.2.5.1.6.1.0-2	(U) The Fire Control System shall survive during exposure to hail up to one-half inch in diameter while in the appropriate operational mode.	PL-366	3.2.5.1.8.3.0-1
A-454	3.2.5.1.6.2.0-1	(U) While in the storage and movement configurations, the Surveillance System shall be protected during exposure to hail up to one-half inch in diameter.	PL-367	3.2.5.1.8.3.0-2
A-455	3.2.5.1.6.2.0-2	(U) While in the storage and movement configurations, the Fire Control System shall be protected during exposure to hail up to one-half inch in diameter.	PL-367	3.2.5.1.8.3.0-2
A-458	3.2.5.1.7.1.0-1	(U) The Surveillance System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> except sensor performance, which can degrade, during exposure up to 10.2 cm (4 inches) of snow accumulation on ground equipment surfaces where the snow has a density of 0.3 gram per cubic centimeter.	PL-358	3.2.5.1.8.1.0-1
A-7044	3.2.5.1.7.1.0-2	(U) The Surveillance System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> except sensor performance, which can degrade, during a snow falling rate of up to 2.54 cm/hour (1 inch/hour). Note: The falling snow does not accumulate on the aerostat.	PL-2150	3.2.5.1.8.1.0-3
A-459	3.2.5.1.7.1.0-3	(U) The Fire Control System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> except sensor performance, which can degrade, during exposure up to 10.2 cm (4 inches) of snow accumulation on ground equipment surfaces where the snow has a density of 0.3 gram per cubic centimeter.	PL-358	3.2.5.1.8.1.0-1
A-7045	3.2.5.1.7.1.0-4	(U) The Fire Control System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> except sensor performance, which can degrade, during a snow falling rate of up to 2.54 cm/hour (1 inch/hour). Note: The falling snow does not accumulate on the aerostat.	PL-2150	3.2.5.1.8.1.0-3
A-461	3.2.5.1.7.2.0-1	(U) While in the storage and movement configurations,	PL-359	3.2.5.1.8.1.0

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		the Surveillance System shall be protected during exposure to snow accumulation, with a density of 0.3 gram per cubic centimeter, of up to 15.2 cm (6 inches) in 12 hours.		-2
A-462	3.2.5.1.7.2.0-2	(U) While in the storage and movement configurations, the Fire Control System shall be protected during exposure to snow accumulation, with a density of 0.3 gram per cubic centimeter, of up to 15.2 cm (6 inches) in 12 hours.	PL-359	3.2.5.1.8.1.0-2
A-464	3.2.5.1.8.1.0-1	(U) The Surveillance System, in the appropriate operational mode, shall meet performance specification in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> when exposed to a salt atmosphere in sea locations and coastal regions. For information on salt atmospheres please see Appendix B.	PL-353	3.2.5.1.7.0-1
A-467	3.2.5.1.8.1.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet performance specifications in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> when exposed to a salt atmosphere in sea locations and coastal regions.	PL-353	3.2.5.1.7.0-1
A-465	3.2.5.1.8.2.0-1	(U) The Surveillance System, in the appropriate operational mode, shall meet performance specifications in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> after exposure to a salt atmosphere in sea locations and coastal regions while in a non-operational mode.	PL-354	3.2.5.1.7.0-2
A-468	3.2.5.1.8.2.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet performance specifications in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> after exposure to a salt atmosphere in sea locations and coastal regions while in a non-operational mode.	PL-354	3.2.5.1.7.0-2
A-466	3.2.5.1.8.3.0-1	(U) The Surveillance System, in the appropriate operational mode, shall meet performance specifications in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> after exposure to a salt atmosphere during ocean transportation while in the transport configuration.	PL-355	3.2.5.1.7.0-3
A-469	3.2.5.1.8.3.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet performance specifications in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> after exposed to a salt atmosphere during ocean transportation while in the transport configuration.	PL-355	3.2.5.1.7.0-3
A-472	3.2.5.1.9.1.0-1	(U) The Surveillance System, in the appropriate operational mode, shall meet performance in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when	PL-2134	3.2.5.1.5.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		exposed to blowing dust of up to 149 $\mu\text{m}$ diameter in concentrations of up to $10 \pm 7 \text{ g/m}^3$ ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).		
A-7038	3.2.5.1.9.1.0-2	(U) The Surveillance System, in the appropriate operational mode, shall meet performance in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when surface equipment is exposed to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $1.1 \pm 0.3 \text{ g/m}^3$ ( $0.033 \pm 0.0075 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).	PL-2133	3.2.5.1.5.0-2
A-7039	3.2.5.1.9.1.0-3	(U) The Surveillance System, in the appropriate operational mode, shall meet performance in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when airborne equipment is exposed to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $0.18 -0.0/+0.2 \text{ g/m}^3$ ( $0.005 - 0.0/+0.0057 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr). Note: for the Tactical Mode, blowing sand does not reach operational altitude.	PL-2132	3.2.5.1.5.0-3
A-473	3.2.5.1.9.1.0-4	(U) The Fire Control System, in the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when exposed to blowing dust of up to 149 $\mu\text{m}$ diameter in concentrations of up to $10 \pm 7 \text{ g/m}^3$ ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).	PL-2134	3.2.5.1.5.0-1
A-7040	3.2.5.1.9.1.0-5	(U) The Fire Control System, in the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when surface equipment is exposed to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $1.1 \pm 0.3 \text{ g/m}^3$ ( $0.033 \pm 0.0075 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).	PL-2133	3.2.5.1.5.0-2
A-7041	3.2.5.1.9.1.0-6	(U) The Fire Control System, in the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> (degraded sensor performance during operation is permitted) and 3.2.4 <i>System Quality Factors</i> when airborne equipment is exposed to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $0.18 -0.0/+0.2 \text{ g/m}^3$ ( $0.005 - 0.0/+0.0057 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4	PL-2132	3.2.5.1.5.0-3

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		knots) (104.5 km/hr). Note: for the Tactical Mode, blowing sand does not reach operational altitude.		
A-475	3.2.5.1.9.2.0-1	(U) The Surveillance System, after assembly into the appropriate operational mode, shall meet performance in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> following exposure, while in the storage and movement configurations, to blowing dust of up to 149 $\mu\text{m}$ diameter in concentrations of up to $10 \pm 7 \text{ g/m}^3$ ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).	PL-2131	3.2.5.1.5.0-4
A-7042	3.2.5.1.9.2.0-2	(U) The Surveillance System, after assembly into the appropriate operational mode, shall meet performance in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> following exposure, while in the storage and movement configurations, to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $2.2 \pm 0.5 \text{ g/m}^3$ ( $0.06 \pm 0.015 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).	PL-2130	3.2.5.1.5.0-5
A-476	3.2.5.1.9.2.0-3	(U) The Fire Control System, after assembly into the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> following exposure, while in the storage and movement configurations, to blowing dust of up to 149 $\mu\text{m}$ diameter in concentrations of up to $10 \pm 7 \text{ g/m}^3$ ( $0.3 \pm 0.2 \text{ g/ft}^3$ ) for velocities up to 8.9 m/s (17.3 knots) (32.04 km/hr).	PL-2131	3.2.5.1.5.0-4
A-7043	3.2.5.1.9.2.0-4	(U) The Fire Control System, after assembly into the appropriate operational mode, shall meet performance in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> following exposure, while in the storage and movement configurations, to blowing sand for diameters in the range of 150 to 850 $\mu\text{m}$ diameter in concentrations of up to $2.2 \pm 0.5 \text{ g/m}^3$ ( $0.06 \pm 0.015 \text{ g/ft}^3$ ) for velocities up to 29.0 m/s (56.4 knots) (104.5 km/hr).	PL-2130	3.2.5.1.5.0-5
A-478	3.2.5.1.10.0-1	(U) The Surveillance system shall be either composed of materials that inhibit the fungus growth or composed of materials which are protected from environments that would encourage fungus growth.	PL-351	3.2.5.1.6.0-1
A-479	3.2.5.1.10.0-2	(U) The Fire Control System shall be either composed of materials that inhibit the fungus growth or composed of materials which are protected from environments that would encourage fungus growth.	PL-351	3.2.5.1.6.0-1
A-482	3.2.5.1.11.1.0-1	(U) The Surveillance System, in the appropriate operational mode, shall meet performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> while being subjected to steady state winds up to 73 km/hr (40	PL-332	3.2.5.1.1.1.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		knots) with turbulence of 1.98 m/s (6.5 fps) rms.		
A-483	3.2.5.1.11.1.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> while being subjected to steady state winds up to 73 km/hr (40 knots) with turbulence of 1.98 m/s (6.5 fps) rms.	PL-332	3.2.5.1.1.1.0-1
A-486	3.2.5.1.11.2.1.0-1	(U) The Surveillance System while moored or at altitude, while either operational or non-operational, shall survive, see 6.2, an exposure to steady state winds of up to 148 km/hr (80 knots) with turbulence of 3.05 m/s (10 fps) rms.	PL-335	3.2.5.1.1.2.0-2
A-487	3.2.5.1.11.2.1.0-2	(U) The Fire Control System while moored or at altitude, while either operational or non-operational, shall survive, see 6.2, an exposure to steady state winds of up to 148 km/hr (80 knots) with turbulence of 3.05 m/s (10 fps) rms.	PL-335	3.2.5.1.1.2.0-2
A-489	3.2.5.1.11.2.2.0-1	(U) The Surveillance System, in the storage, movement and operations configurations, shall survive an exposure to steady state winds of up to 185 km/hr (100 knots).	PL-334	3.2.5.1.1.2.0-1
A-490	3.2.5.1.11.2.2.0-2	(U) The Fire Control System, in the storage, movement, and operations configurations, shall survive an exposure to steady state winds of up to 185 km/hr (100 knots).	PL-334	3.2.5.1.1.2.0-1
A-495	3.2.5.1.12.1.0-1	(U) The Surveillance System ground equipment, in the operations configuration, movement configuration, or storage configuration, shall be protected from direct and indirect lightning, including LEMP, in accordance with the lightning requirements of MIL-STD-464. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.	PL-371 PL-344 PL-136 PL-135	3.2.5.1.9.0-3 3.2.5.1.4.0-3 3.2.1.2.0-3 3.2.1.2.0-2
A-496	3.2.5.1.12.1.0-2	(U) The Fire Control System ground equipment, in the operations configuration, movement configuration, or storage configuration, shall be protected from direct and indirect lightning, including LEMP, in accordance with the lightning requirements of MIL-STD-464. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.	PL-371 PL-344 PL-136 PL-135	3.2.5.1.9.0-3 3.2.5.1.4.0-3 3.2.1.2.0-3 3.2.1.2.0-2
A-498	3.2.5.1.12.2.0-1	(U) The Surveillance System airborne equipment, when in the operations configuration, shall survive direct or indirect lightning strikes to the aerostat lightning cage, which produce a maximum induced current of 145 kA including LEMP. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.	PL-345 PL-342 PL-136 PL-135	3.2.5.1.4.0-4 3.2.5.1.4.0-1 3.2.1.2.0-3 3.2.1.2.0-2
A-499	3.2.5.1.12.2.0-2	(U) The Fire Control System airborne equipment, when in the operations configuration, shall survive direct or indirect lightning strikes to the aerostat lightning cage, which produces a maximum induced current of 145 kA including LEMP. Relevant sections of MIL-HDBK-419A and NFPA-780 can be used for guidance.	PL-345 PL-342 PL-136 PL-135	3.2.5.1.4.0-4 3.2.5.1.4.0-1 3.2.1.2.0-3 3.2.1.2.0-2
A-501	3.2.5.1.12.3.0-1	(U) The Surveillance System shall return to the state, mode and stored configuration existing prior to a near	PL-346	3.2.5.1.4.0-5

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		lightning strike, see 6.2, after a controlled restart, not requiring repair. By definition, a nearby lightning strike does not cause equipment damage. A controlled restart is according to procedures.		
A-502	3.2.5.1.12.3.0-2	(U) The Fire Control System shall return to the state, mode and stored configuration existing prior to a near lightning strike, see 6.2, after a controlled restart, not requiring repair. By definition, a nearby lightning strike does not cause equipment damage. A controlled restart is according to procedures.	PL-346	3.2.5.1.4.0-5
A-509	3.2.5.2.1.1.0-1	(U) The Surveillance System, while in the appropriate operational mode, shall meet performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> while being subjected to vibration levels caused by operation.	PL-394	3.2.5.2.2.0-1
A-510	3.2.5.2.1.1.0-2	(U) The Fire Control System, while in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> while being subjected to vibration levels caused by operation.	PL-394	3.2.5.2.2.0-1
A-512	3.2.5.2.1.2.0-1	(U) The Surveillance System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> following exposure to vibration levels caused by normal transportation, maintenance, or storage. Transportation includes, air, ground (both road and <b>b(3)</b> ), and sea.	PL-547 PL-395	3.5.3.0-4 3.2.5.2.2.0-2
A-513	3.2.5.2.1.2.0-2	(U) The Fire Control System, in the appropriate operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> following exposure to vibration levels caused by normal transportation, maintenance, or storage. Transportation includes, air, ground (both road and <b>b(3)</b> ), and sea.	PL-547 PL-395	3.5.3.0-4 3.2.5.2.2.0-2
A-516	3.2.5.2.2.1.0-1	(U) The Surveillance System, while in an operational mode, shall meet all performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> , and 3.2.4 <i>System Quality Factors</i> applicable to that operational mode, while being subjected to shock levels caused during normal operation of that mode.	PL-397	3.2.5.2.3.0-1
A-517	3.2.5.2.2.1.0-2	(U) The Fire Control System, while in an operational mode, shall meet all performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> applicable to that operational mode, while being subjected to shock levels caused during normal operation of that mode.	PL-397	3.2.5.2.3.0-1
A-521	3.2.5.2.2.2.0-1	(U) The JLENS LRUs shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after the LRUs are dropped, with the drop height dependent on the LRU	PL-398	3.2.5.2.3.0-2

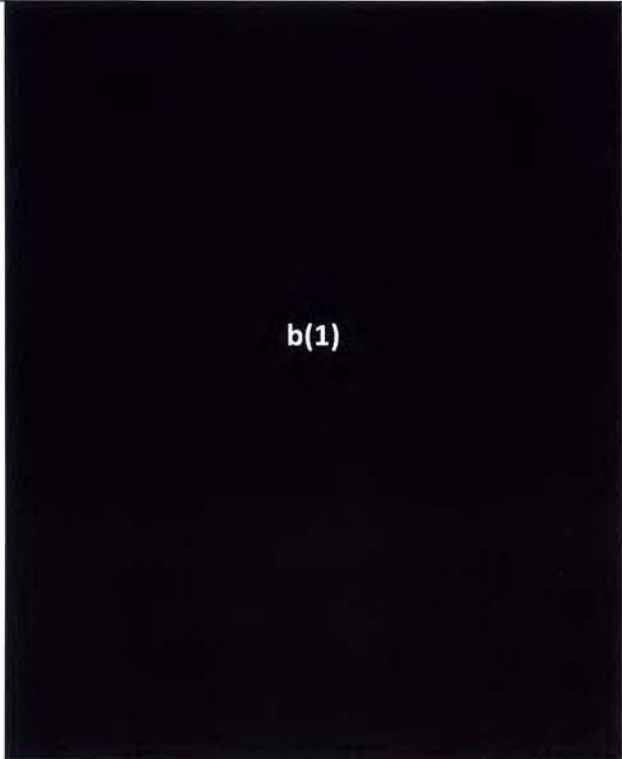
A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section																		
		<p>packaged weight as:</p> <table border="1"> <thead> <tr> <th>Package Gross Weight, kg (lb)</th> <th>Design Drop (in)</th> </tr> </thead> <tbody> <tr> <td>0 to 9.1 (0 to 20)</td> <td>76 (1930)</td> </tr> <tr> <td>9.2 to 18.2 (21 to 40)</td> <td>66 (1676)</td> </tr> <tr> <td>18.3 to 27.2 (41 to 60)</td> <td>61 (1549)</td> </tr> <tr> <td>27.4 to 36.3 (61 to 80)</td> <td>46 (1168)</td> </tr> <tr> <td>36.4 to 45.4 (81 to 100)</td> <td>38 (965)</td> </tr> <tr> <td>45.5 to 68.1 (101 to 150)</td> <td>31 (787)</td> </tr> <tr> <td>68.2 to 113.5 (151 to 250)</td> <td>26 (660)</td> </tr> <tr> <td>113.6 or greater (251 or greater)</td> <td>20 (508)</td> </tr> </tbody> </table> <p>while packaged in their transit containers according to the applicable technical documentation.</p>	Package Gross Weight, kg (lb)	Design Drop (in)	0 to 9.1 (0 to 20)	76 (1930)	9.2 to 18.2 (21 to 40)	66 (1676)	18.3 to 27.2 (41 to 60)	61 (1549)	27.4 to 36.3 (61 to 80)	46 (1168)	36.4 to 45.4 (81 to 100)	38 (965)	45.5 to 68.1 (101 to 150)	31 (787)	68.2 to 113.5 (151 to 250)	26 (660)	113.6 or greater (251 or greater)	20 (508)		
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A-111711	3.2.5.2.3.1.0-1	<p>(U) After assembly to an operational configuration and while in the appropriate operational mode, the JLENS Orbit components, which are packaged for the Movement State in ISO containers or ISO shelters, shall meet performance requirements in 3.2.1 Performance Characteristics and 3.2.4 System Quality Factors after exposure to a [REDACTED] <b>b(3)</b> while the JLENS equipment is mounted in the designated ISO shelters or ISO containers for that equipment and while the JLENS equipment is in the transport configuration.</p>	PL-2153	3.2.5.2.3.0-5																		
A-113361	3.2.5.2.3.2.0-1	<p>(U) After assembly to an operational configuration and while in the appropriate operational mode, the JLENS Orbit non-fragile components, see 6.2, except the MMS, shall meet performance requirements in 3.2.1 Performance Characteristics and 3.2.4 System Quality Factors after exposure to a [REDACTED] <b>b(3)</b> while the JLENS equipment is mounted in the designated ISO shelters or ISO containers for that equipment and while the JLENS equipment is in the transport configuration.</p>	PL-3406	3.2.5.2.3.0-4																		
A-523	3.2.5.2.3.3.0-1	<p>(U) After assembly to an operational configuration and while in the appropriate operational mode, the JLENS Orbit fragile components, see 6.2, which are packaged for the Movement State in ISO containers or ISO shelters, shall meet performance requirements in 3.2.1 Performance Characteristics and 3.2.4 System Quality Factors after exposure to a [REDACTED] <b>b(3)</b> while the JLENS equipment is mounted in the designated ISO shelters or ISO containers for that equipment and while the JLENS equipment is in the transport configuration.</p>	PL-399	3.2.5.2.3.0-3																		
A-113362	3.2.5.2.3.4.0-1	<p>(U) The JLENS ISO shipping containers and shelters which contain fragile equipment shall include</p>	PL-3407	3.2.5.2.3.0-5.0-3																		

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		mechanical shock indicators. Note: The design of the JLENS equipment and packaging is <b>b(3)</b> . <b>b(3)</b> By analysis, any ISO shelter or ISO container that houses only non-fragile components, that is components which will withstand a <b>b(3)</b> will not be designated as containing fragile equipment.		
A-113363	3.2.5.2.3.5.0-1	(U) The exterior of the shipping containers containing fragile hardware shall be marked with special handling procedures using MIL-STD-129P as guidance. Note: The design of the JLENS equipment and packaging is for <b>b(3)</b> and <b>b(3)</b> . By analysis, any ISO shelter or ISO container that houses only non-fragile components, that is components which will withstand <b>b(3)</b> , will not be designated as containing fragile equipment.	PL-3408	3.2.5.2.3.0-5.0-2
A-113342	3.2.5.2.3.6.0-1	(U) Each JLENS unique transportation fixture onto which fragile hardware is mounted shall be marked with special handling procedures using MIL-STD-129P as guidance.	PL-3411	3.2.5.2.3.0-5.0-1
A-526	3.2.5.2.4.1.0-1	(U) The electrically initiated devices (EID) or electro-explosive devices (EED) used in the Surveillance System shall be rendered safe using explosive ordnance disposal (EOD) tools, methods, and technology.	PL-480	3.3.3.5.0-2
A-527	3.2.5.2.4.1.0-2	(U) The electrically initiated devices (EID) or electro-explosive devices (EED) used in the Fire Control System shall be rendered safe using explosive ordnance disposal (EOD) tools, methods, and technology.	PL-480	3.3.3.5.0-2
A-529	3.2.5.2.4.2.0-1	(U) The Surveillance System EIDs and EEDs shall be protected from inadvertent ignition during, or experience degraded performance characteristics after, exposure to externally radiated electromagnetic environments (EME) using MIL-STD-464A as guidance.	PL-479	3.3.3.5.0-1
A-530	3.2.5.2.4.2.0-2	(U) The Fire Control System EIDs and EEDs shall be protected from inadvertent ignition during, or experience degraded performance characteristics after, exposure to externally radiated electromagnetic environments (EME) using MIL-STD-464A as guidance.	PL-479	3.3.3.5.0-1
A-533	3.2.5.2.5.1.1.0-1	(U) The Surveillance System shall control unintentional emissions, see 6.2, using MIL-STD-461E, Figure RE102-4, Army curve as a guide.	PL-587 PL-403	3.7.1.0-3 3.2.5.2.4.0-3
A-10326	3.2.5.2.5.1.1.0-2	(U) The Surveillance System shall control conducted emissions on commercial power lines in accordance with MIL-STD-461E, CE102. The fit to the CE102 limit relaxation is $10 \cdot \log(V) - 14.47$ in dB.	PL-403	3.2.5.2.4.0-3
A-10330	3.2.5.2.5.1.1.0-3	(U) The Surveillance System, in the appropriate operational mode, shall meet performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> in the	PL-401	3.2.5.2.4.0-1



A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		presence of intra-system radiated and conducted emissions.		
A-535	3.2.5.2.5.1.1.0-4	(U) The Fire Control System shall control unintentional emissions, see 6.2, using MIL-STD-461E, RE102-4 Army curve as a guide.	PL-403	3.2.5.2.4.0-3
A-10327	3.2.5.2.5.1.1.0-5	(U) The Fire Control System shall control conducted emissions on commercial power lines in accordance with MIL-STD-461E, CE102. The fit to the CE102 limit relaxation is $10 \cdot \log(V) - 14.47$ in dB.	PL-403	3.2.5.2.4.0-3
A-10331	3.2.5.2.5.1.1.0-6	(U) The Fire Control System, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of intra-system radiated and conducted emissions.	PL-401	3.2.5.2.4.0-1
A-7050	3.2.5.2.5.1.2.0-1	(U) The Surveillance System ground equipment, in the appropriate operational mode, shall meet performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> in the presence electromagnetic interference using MIL-STD-461E, RS103, as a guide. The "tuned frequency" referred into MIL-STD-461E, RS103, is defined as the in-band frequency in 6.2.	PL-587 PL-403	3.7.1.0-3 3.2.5.2.4.0-3
A-7049	3.2.5.2.5.1.2.0-2	(U) The Fire Control System ground equipment, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of electromagnetic interference using MIL-STD-461E, RS103, as a guide. The "tuned frequency" referred into MIL-STD-461E, RS103, is defined as the in-band frequency in 6.2.	PL-587 PL-403	3.7.1.0-3 3.2.5.2.4.0-3
A-10328	3.2.5.2.5.1.2.1.0-1	(U) The Surveillance System airborne equipment, excluding the IFF subsystem and the GPS, in the appropriate operational mode, shall meet performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious in-band electromagnetic interference using MIL-STD-461E, RS103 (RE102 + 20dB). GFE must be MIL-STD-461E compliant.	PL-403	3.2.5.2.4.0-3
A-10329	3.2.5.2.5.1.2.1.0-3	(U) The Fire Control System airborne equipment excluding the IFF subsystem and the GPS, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious in-band electromagnetic interference using MIL-STD-461E, RS103 (RE102 + 20dB) as a guide. GFE must be MIL-STD-461E compliant.	PL-403	3.2.5.2.4.0-3
A-534	3.2.5.2.5.1.2.2.0-1	(U) The Surveillance System airborne equipment excluding the IFF subsystem, in the appropriate operational mode, shall meet performance requirements	PL-401	3.2.5.2.4.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious non-in-band (out of band) electromagnetic interference, from 1 MHz to 40 GHz, at a level NGT 50 V/m. GFE must be compliant with MIL-STD-461E. See 6.2 for the definition of in-band frequencies for antenna-connected equipment.		
A-10332	3.2.5.2.5.1.2.2.0-3	(U) The Fire Control System airborne equipment excluding the FCR but including the GPS, in the appropriate operational mode, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> in the presence of spurious non-in-band electromagnetic interference, from 1 MHz to 40 GHz, at a level NGT 50 V/m. GFE must be compliant with MIL-STD-461E. See 6.2 for the definition of in-band frequencies for antenna-connected equipment.	PL-401	3.2.5.2.4.0-1
A-538	3.2.5.2.5.2.0-1	(U) Grounding and bonding on the Surveillance System shall be implemented in accordance with the electrical bonding and external grounds requirements of MIL-STD-464A.	PL-616 PL-450 PL-449 PL-295 PL-285 PL-284 PL-278 PL-272 PL-271 PL-266 PL-260 PL-259 PL-245 PL-228 PL-224 PL-207 PL-206 PL-448	3.7.1.3.0-5 3.3.3.3.0-3 3.3.3.3.0-2 3.2.2.3.2.4.3 .0-1 3.2.2.3.2.3.3 .0-2 3.2.2.3.2.3.3 .0-1 3.2.2.3.2.3.1 .0-1 3.2.2.3.2.2.3 .0-2 3.2.2.3.2.2.3 .0-1 3.2.2.3.2.2.1 .0-2 3.2.2.3.2.1.3 .0-2 3.2.2.3.2.1.3 .0-1 3.2.2.3.1.4.3 .0-1 3.2.2.3.1.3.3 .0-1 3.2.2.3.1.3.1 .0-2 3.2.2.3.1.1.3 .0-2 3.2.2.3.1.1.3 .0-1 3.3.3.3.0-1
A-539	3.2.5.2.5.2.0-2	(U) Grounding and bonding on the Fire Control System shall be implemented in accordance with the electrical bonding and external grounds requirements of MIL-	PL-616 PL-450 PL-449	3.7.1.3.0-5 3.3.3.3.0-3 3.3.3.3.0-2

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		STD-464A.	PL-285 PL-284 PL-278 PL-272 PL-271 PL-266 PL-260 PL-259 PL-245 PL-228 PL-224 PL-207 PL-206 PL-448	3.2.2.3.2.3.3 .0-2 3.2.2.3.2.3.3 .0-1 3.2.2.3.2.3.1 .0-1 3.2.2.3.2.2.3 .0-2 3.2.2.3.2.2.3 .0-1 3.2.2.3.2.2.1 .0-2 3.2.2.3.2.1.3 .0-2 3.2.2.3.2.1.3 .0-1 3.2.2.3.1.4.3 .0-1 3.2.2.3.1.3.3 .0-1 3.2.2.3.1.3.1 .0-2 3.2.2.3.1.1.3 .0-2 3.2.2.3.1.1.3 .0-1 3.3.3.3.0-1
A-541	3.2.5.2.6.1.0-1	 b(1)	PL-2115 PL-2114 PL-245 PL-228 PL-448	3.2.5.2.4.0-7 3.2.5.2.4.0-6 3.2.2.3.1.4.3 .0-1 3.2.2.3.1.3.3 .0-1 3.3.3.3.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		<b>b(1)</b>		
A-542	3.2.5.2.6.1.0-2	<b>b(1)</b>	PL-2115 PL-2114 PL-245 PL-228 PL-448	3.2.5.2.4.0-7 3.2.5.2.4.0-6 3.2.2.3.1.4.3 .0-1 3.2.2.3.1.3.3 .0-1 3.3.3.3.0-1
A-6891	3.2.5.2.6.2.0-1	<b>b(1)</b>	PL-2115 PL-2114 PL-245 PL-228 PL-448	3.2.5.2.4.0-7 3.2.5.2.4.0-6 3.2.2.3.1.4.3 .0-1 3.2.2.3.1.3.3 .0-1 3.3.3.3.0-1
A-6892	3.2.5.2.6.2.0-2	<b>b(1)</b>	PL-2115 PL-2114 PL-245 PL-228 PL-448	3.2.5.2.4.0-7 3.2.5.2.4.0-6 3.2.2.3.1.4.3 .0-1 3.2.2.3.1.3.3 .0-1 3.3.3.3.0-1
A-546	3.2.5.2.7.0-1	(U) The Surveillance System LRUs or equipment cabinets as appropriate, except for GFE, shall meet performance requirements in 3.2.1.2 <i>Performance Characteristics, Surveillance System</i> and 3.2.4 <i>System Quality Factors</i> following exposure to an electrostatic <b>b(3)</b> (U) Note: ESD discharges directly to connector pins are not included. This only includes ESD discharges to LRU or equipment cabinet external surfaces, as	PL-370 PL-369	3.2.5.1.9.0-2 3.2.5.1.9.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		appropriate.		
A-547	3.2.5.2.7.0-2	(U) The Fire Control System LRUs or equipment cabinets as appropriate, except for GFE, shall meet performance requirements in 3.2.1.3 <i>Performance Characteristics, Fire Control System</i> and 3.2.4 <i>System Quality Factors</i> following exposure to an electrostatic <b>b(3)</b>  (U) Note: ESD discharges directly to connector pins are not included. This only includes ESD discharges to LRU or equipment cabinet external surfaces, as appropriate.	PL-370 PL-369	3.2.5.1.9.0-2 3.2.5.1.9.0-1
A-1571	3.2.5.2.9.2.1.1.0-1	(U) The Surveillance System shall be able to withstand contamination/decontamination as described herein while in the movement configuration. Items packaged in NBC protective ISO containers are protected by the containers.	PL-376	3.2.5.2.1.0-3
A-1574	3.2.5.2.9.2.1.1.0-2	(U) The Fire Control System shall be able to withstand contamination/decontamination as described herein while in the movement configuration. Items packaged in NBC protective ISO containers are protected by the containers.	PL-376	3.2.5.2.1.0-3
A-552	3.2.5.2.9.2.2.1.0-1	(U) The Surveillance System shall be able to perform mission critical functions after five exposures to NBC agents, decontaminants and the decontamination process with discard items allowed. Equipment that is not practical to design as NBC contamination/decontamination survivable will be identified.	PL-384 PL-378	3.2.5.2.1.0-6 3.2.5.2.1.0-5
A-553	3.2.5.2.9.2.2.1.0-2	(U) The Fire Control System shall be able to perform mission critical functions after five exposures to NBC agents, decontaminants and the decontamination process with discard items allowed. Equipment that is not practical to design as NBC contamination/decontamination survivable will be identified.	PL-384 PL-378	3.2.5.2.1.0-6 3.2.5.2.1.0-5
A-555	3.2.5.2.9.2.2.2.0-1	<b>b(3)</b>	PL-386 PL-378	3.2.5.2.1.0-8 3.2.5.2.1.0-5
A-556	3.2.5.2.9.2.2.2.0-2	<b>b(3)</b>	PL-386 PL-378	3.2.5.2.1.0-8 3.2.5.2.1.0-5
A-558	3.2.5.2.9.2.2.3.0-1	(U) The Surveillance System, after subsection to worst case chemical and biological contamination, as specified herein, shall be restorable to an operational condition such that use of MOPP IV need not be continued, after being decontaminated using JLENS	PL-391	3.2.5.2.1.0-13

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		specific decontamination procedures.		
A-559	3.2.5.2.9.2.2.3.0-2	b(3)	PL-391	3.2.5.2.1.0-13
A-561	3.2.5.2.9.2.2.4.0-1	b(3)	PL-389	3.2.5.2.1.0-11
A-562	3.2.5.2.9.2.2.4.0-2	b(3)	PL-389	3.2.5.2.1.0-11
A-1666	3.2.5.2.9.2.2.5.0-1	b(3)	PL-390	3.2.5.2.1.0-12
A-1667	3.2.5.2.9.2.2.5.0-2	b(3)	PL-390	3.2.5.2.1.0-12
A-571	3.2.6.1.1.0-1	b(3)	PL-562	3.5.3.1.0-1
A-573	3.2.6.1.1.1.0-1	b(3)	PL-563	3.5.3.1.0-2
A-575	3.2.6.1.1.2.0-1	(U) The JLENS Orbit, in the appropriate operational mode, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to the Railroad Transportation vibrations NGT than 0.488 g rms longitudinal, 0.488 g rms vertical, and 0.488 g rms lateral, incurred while in the movement configuration.	PL-564	3.5.3.1.0-3
A-519	3.2.6.1.1.3.0-1	(U) The JLENS Orbit, while in the appropriate operational mode, shall meet performance requirements specified in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after being subjected to rail impact static equivalent loads NGT 5.0 g	PL-565	3.5.3.1.0-4

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		longitudinal, 3.0 g vertical and 3.0 g lateral, incurred while in the transport configuration. Note: The accelerations provided here are applied to the center of mass of the ISO container. Accelerations on individual components will depend on packaging.		
A-578	3.2.6.1.2.1.0-1	(U) The JLENS Orbit, in the Transport Mode, shall be transportable on highways defined in MIL-STD-1366D including an allowance for special permits where the limits for load, vibration, and shock are presented in Appendix E.	PL-566	3.5.3.1.0-5
A-580	3.2.6.1.2.2.0-1	(U) The JLENS Orbit, in the transport configuration, shall be transportable on secondary roads, see 6.2, where the limits for load, vibration, and shock are presented in Appendix E.	PL-567 PL-549	3.5.3.1.0-6 3.5.3.0-6
A-582	3.2.6.1.2.3.0-1	(U) The JLENS Orbit, in the transport configuration, shall be transportable on unimproved roads, see 6.2, where the limits for load, vibration, and shock are presented in Appendix E.	PL-568 PL-549	3.5.3.1.0-7 3.5.3.0-6
A-584	3.2.6.1.2.4.0-1	(U) The JLENS Orbit, in the transport configuration, shall be transportable <b>b(3)</b>	PL-569 PL-549	3.5.3.1.0-8 3.5.3.0-6
A-586	3.2.6.1.2.5.0-1	(U) The JLENS Orbit, in the appropriate operational mode, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to the Large Assembly Transport vibration where the vibration levels are NGT those represented by the Perryman Cross-Country Course No. 1 and the mobility profile for primary, secondary and unimproved roads given in Table IX, in the transport configuration.	PL-548	3.5.3.0-5
A-589	3.2.6.2.1.0-1	(U) The JLENS Orbit, in the transport configuration, shall be marine transportable in accordance with MIL-STD-1366D section titled <i>Water Transportation (Load on / Load off)</i> , where load limits and vibrations are presented in Appendix E.	PL-571	3.5.3.2.0-1
A-591	3.2.6.2.2.0-1	(U) The JLENS Orbit, in the appropriate operational mode, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality Factors</i> after exposure to the Ship Transportation vibrations NGT 0.315 g rms longitudinal, 0.315 g rms vertical, and 0.315 g rms lateral, incurred while in the transport configuration.	PL-572	3.5.3.2.0-2
A-594	3.2.6.3.1.0-1	(U) The JLENS Orbit, in the transport configuration, shall be transportable on C-130 (except the mobile mooring station, associated peculiar support equipment, and ISOs or shelters which differ from 8' x 8' x 20'), C-5 and C-17 aircraft. The shock and vibrations experienced during C-130, C-5, and C-17 aircraft transport are presented in Appendix E.	PL-574	3.5.3.3.0-1
A-596	3.2.6.3.2.0-1	(U) The JLENS Orbit, in the appropriate operational mode, shall meet performance requirements in 3.2.1 <i>Performance Characteristics</i> and 3.2.4 <i>System Quality</i>	PL-575	3.5.3.3.0-2

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		<i>Factors</i> after exposure to the aircraft random vibrations NGT 5.17 g rms longitudinal, 5.17 g rms vertical, and 5.17 g rms lateral, incurred while in the transport configuration.		
A-1609	3.2.6.4.0-1	(U) The JLENS Orbit equipment in transport configuration shall have lift and tie-down provision in accordance with MIL-STD-209K section titled <i>Lifting Provisions and Equipment Tie-down Provisions</i> .	PL-545	3.5.3.0-2
A-6894	3.2.6.4.1.0-1	(U) Transportation enclosures which are non-GFE and delivered as part of the Orbit shall protect the equipment contained within the enclosure from damage due to: <ul style="list-style-type: none"> <li>a. Temperature extremes, as needed</li> <li>b. Snow</li> <li><b>b(3)</b></li> <li>d. Hail</li> <li>e. High humidity</li> <li>f. Wind</li> <li>g. Blowing sand</li> <li>h. Lightning</li> <li><b>b(3)</b></li> <li>j. NBC</li> </ul> as specified in section 3.2.5 <i>Environmental Conditions</i> when in the transport configuration.	PL-375 PL-2115 PL-2114	3.2.5.2.1.0-2 3.2.5.2.4.0-7 3.2.5.2.4.0-6
A-1572	3.2.6.4.2.0-1	(U) Transportation enclosures which are non-GFE and delivered as part of the Surveillance System shall be able to withstand contamination/decontamination described herein such that it protects the equipment contained within the enclosure.	PL-375	3.2.5.2.1.0-2
A-1575	3.2.6.4.2.0-2	(U) Transportation enclosures which are non-GFE and delivered as part of the Fire Control System shall be able to withstand contamination/decontamination described herein such that it protects the equipment contained within the enclosure.	PL-375	3.2.5.2.1.0-2
A-601	3.2.6.4.4.0-1	(U) The JLENS Orbit, in the transport configuration, shall meet the U.S. Department of Transportation (DOT), NATO, and European Union (EU) Performance-Oriented Packaging (POP) standards for unrestricted highway, rail, and sea transportation.	PL-546	3.5.3.0-3
A-2126	3.3.1.2.0-1	(U) The Surveillance System shall be designed such that components containing hazardous materials listed in the EPA-17 and Class I Ozone Depleting Substances are only utilized in compliance with the JLENS Hazardous Materials Management Plan (HMMP). Note: Appendix A contains the aforementioned lists.	PL-424 PL-423	3.3.3.1.0-2 3.3.3.1.0-1
A-2127	3.3.1.2.0-2	(U) The Fire Control System shall be designed such that components containing hazardous materials listed in the EPA-17 and Class I Ozone Depleting Substances are only utilized in compliance with the JLENS Hazardous Materials Management Plan (HMMP). Note: Appendix A contains the aforementioned lists.	PL-424 PL-423	3.3.3.1.0-2 3.3.3.1.0-1
A-726	3.3.2.1.0-1	(U) The JLENS Orbit shall have all equipment marked	PL-413	3.3.2.0-1



A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		<p>in accordance with MIL-STD-130L for unique identification with the following provisos and exceptions.</p> <p>(U) Provisos to this requirement are:</p> <p>a. Only hardware and software items with a unit acquisition cost NLT \$5,000.</p> <p>b. All hardware items with a unit acquisition cost less than \$5,000 when they are serially managed, mission critical, or controlled inventory items.</p> <p>(U) Exceptions to this requirement are as specified in MIL-STD-130L section titled <i>Detailed Requirements</i> subsection titled <i>Exemptions</i>:</p> <p>a. "COTS items marked with commercial identification (firm name, logo, part number, etc.), and which present no identification difficulty may be exempt from additional marking requirements. This exemption extends to COTS items identified on a VICD."</p> <p>b. "Parts within an assembly or a sub-assembly, that are not subject to removal, replacement, or repair or"</p> <p>c. "When parts are deemed too small for the application of complete marking in accordance with MIL-STD-130L section titled <i>Machine-readable information (MRI) marking</i>, a logo or other abbreviated marking [will] be substituted for the design activity identification."</p>		
A-2092	3.3.2.2.0-1	(U) The Surveillance System shall utilize safety warning labels compliant with ANSI Z535.	PL-429	3.3.3.1.0-7
A-2093	3.3.2.2.0-2	(U) The Fire Control System shall utilize safety warning labels compliant with ANSI Z535.	PL-429	3.3.3.1.0-7
A-616	3.3.3.1.0-1	(U) The Surveillance System shall have no hazards, see 6.2, with Mishap Risk Categories rated "High" or "Serious", see Appendix A.3 (from MIL-STD-882D), associated with RF radiation.	PL-474	3.3.3.4.0-3
A-10316	3.3.3.1.0-2	(U) The Fire Control System shall have no hazards, see 6.2, with Mishap Risk Categories rated "High" or "Serious", see Appendix A.3 (from MIL-STD-882D), associated with RF radiation.	PL-443 PL-444	3.3.3.1.0-18 3.3.3.1.0-19
A-1817	3.3.3.1.0-3	(U) The Surveillance System shall provide safety devices, see 6.2, to mitigate personnel falling hazards to a hazard Mishap Risk Category, see Appendix A.3, of "Medium" or "Low."	PL-443 PL-444 PL-477 PL-476 PL-475	3.3.3.1.0-18 3.3.3.1.0-19 3.3.3.1.0-22 3.3.3.1.0-21 3.3.3.1.0-20
A-10317	3.3.3.1.0-4	(U) The Fire Control System shall provide safety devices, see 6.2, to mitigate personnel falling hazards to a hazard Mishap Risk Category, see Appendix A.3, of "Medium" or "Low."	PL-443 PL-444	3.3.3.1.0-18 3.3.3.1.0-19
A-1818	3.3.3.1.0-5	(U) The Surveillance System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, related to equipment motion.	PL-443 PL-444 PL-434 PL-433	3.3.3.1.0-18 3.3.3.1.0-19 3.3.3.1.0-11 3.3.3.1.0-10

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			PL-432 PL-431	3.3.3.1.0-9 3.3.3.1.0-8
A-10318	3.3.3.1.0-6	(U) The Fire Control System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, related to equipment motion.	PL-443 PL-444	3.3.3.1.0-18 3.3.3.1.0-19
A-3864	3.3.3.1.0-7	(U) The Surveillance System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, related to fire.	PL-443 PL-444 PL-620 PL-473 PL-437 PL-436 PL-343 PL-134	3.3.3.1.0-18 3.3.3.1.0-19 3.7.1.4.0-5 3.3.3.4.0-2 3.3.3.1.0-13 3.3.3.1.0-12 3.2.5.1.4.0-2 3.2.1.2.0-1
A-10319	3.3.3.1.0-8	(U) The Fire Control System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, related to fire.	PL-443 PL-444	3.3.3.1.0-18 3.3.3.1.0-19
A-1816	3.3.3.1.0-9	(U) The Surveillance System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, resulting in equipment damage due to overheating.	PL-443 PL-444 PL-670 PL-441 PL-426	3.3.3.1.0-18 3.3.3.1.0-19 3.7.2.0-8 3.3.3.1.0-16 3.3.3.1.0-4
A-1828	3.3.3.1.0-10	(U) The Fire Control System shall have no hazards with Mishap Risk Categories rated "High" or "Serious," see Appendix A.3, resulting in equipment damage due to overheating.	PL-443 PL-444 PL-670 PL-441 PL-426	3.3.3.1.0-18 3.3.3.1.0-19 3.7.2.0-8 3.3.3.1.0-16 3.3.3.1.0-4
A-1820	3.3.3.1.0-11	(U) The Surveillance System shall have no single point failures, see 6.2, which result in a hazard with a Mishap Risk Category of "High" or "Serious".	PL-611 PL-444 PL-443 PL-442 PL-305	3.7.1.3.0-1 3.3.3.1.0-19 3.3.3.1.0-18 3.3.3.1.0-17 3.2.4.1.0-2
A-1827	3.3.3.1.0-12	(U) The Fire Control System shall have no single point failures which result in a hazard with a Mishap Risk Category of "High" or "Serious".	PL-611 PL-444 PL-443 PL-442 PL-305	3.7.1.3.0-1 3.3.3.1.0-19 3.3.3.1.0-18 3.3.3.1.0-17 3.2.4.1.0-2
A-1837	3.3.3.1.0-13	(U) The Surveillance System shall have no hazards with Mishap Risk Categories of "High" or "Serious" associated with voltage and/or current.	PL-443 PL-444 PL-469 PL-466 PL-465 PL-464 PL-462 PL-461 PL-460 PL-459 PL-458 PL-440 PL-439	3.3.3.1.0-18 3.3.3.1.0-19 3.3.3.3.0-17 3.3.3.3.0-15 3.3.3.3.0-14 3.3.3.3.0-13 3.3.3.3.0-11 3.3.3.3.0-10 3.3.3.3.0-9 3.3.3.3.0-8 3.3.3.3.0-7 3.3.3.1.0-15 3.3.3.1.0-14
A-1838	3.3.3.1.0-14	(U) The Fire Control System shall have no hazards with Mishap Risk Categories of "High" or "Serious"	PL-443 PL-444	3.3.3.1.0-18 3.3.3.1.0-19

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		associated with voltage and/or current.	PL-469 PL-466 PL-465 PL-464 PL-462 PL-461 PL-460 PL-459 PL-458 PL-440 PL-439	3.3.3.3.0-17 3.3.3.3.0-15 3.3.3.3.0-14 3.3.3.3.0-13 3.3.3.3.0-11 3.3.3.3.0-10 3.3.3.3.0-9 3.3.3.3.0-8 3.3.3.3.0-7 3.3.3.1.0-15 3.3.3.1.0-14
A-1825	3.3.3.2.0-1	(U) The Surveillance System shall comply with the applicable portions of MIL-HDBK-454A Guidelines on <i>Personnel Hazards, Flammability, and Electrical Overload Protection</i> .	PL-468 PL-484 PL-483 PL-467 PL-463 PL-453 PL-452	3.3.3.6.1.0-1 3.3.3.6.0-2 3.3.3.6.0-1 3.3.3.3.0-16 3.3.3.3.0-12 3.3.3.3.0-5 3.3.3.3.0-4
A-1829	3.3.3.2.0-2	(U) The Fire Control System shall comply with the applicable portions of MIL-HDBK-454A Guidelines on <i>Personnel Hazards, Flammability, and Electrical Overload Protection</i> .	PL-468 PL-467 PL-463 PL-453 PL-452	3.3.3.6.1.0-1 3.3.3.3.0-16 3.3.3.3.0-12 3.3.3.3.0-5 3.3.3.3.0-4
A-1831	3.3.3.3.0-1	(U) The Surveillance System shall provide local emergency power shutdown, see 6.2, capability at manned shelters and locations.	PL-457	3.3.3.3.0-6
A-1832	3.3.3.3.0-2	(U) The Fire Control System shall provide local emergency power shutdown capability at manned shelters and locations.	PL-457	3.3.3.3.0-6
A-1834	3.3.3.4.0-1	(U) The Surveillance System shall provide electrical power for maintenance and emplacement inside the windscreen using MIL-HDBK-454A, section titled <i>General Guidelines, Power and Ground</i> , as guidance.	PL-444 PL-158	3.3.3.1.0-19 3.2.1.7.0-2
A-1835	3.3.3.4.0-2	(U) The Fire Control System shall provide electrical power for maintenance and emplacement inside the windscreen using MIL-HDBK-454A, section titled <i>General Guidelines, Power and Ground</i> , as guidance.	PL-444 PL-158	3.3.3.1.0-19 3.2.1.7.0-2
A-2088	3.3.3.5.0-1	(U) The Surveillance System shall have barriers to prevent accidental contact of personnel to surface temperatures outside the limits specified in MIL-STD-1472F section titled <i>Thermal Contact Hazards</i> .	PL-444 PL-471	3.3.3.1.0-19 3.3.3.4.0-1
A-2089	3.3.3.5.0-2	(U) The Fire Control System shall have barriers to prevent accidental contact of personnel to surface temperatures outside the limits specified in MIL-STD-1472F section titled <i>Thermal Contact Hazards</i> .	PL-444 PL-471	3.3.3.1.0-19 3.3.3.4.0-1
A-618	3.3.3.6.0-1	(U) The Surveillance System, in all configurations, shall have acoustic noise levels and durations that comply with MIL-STD-1474D requirement titled <i>Steady-State Noise, Personnel Occupied Areas</i> and MIL-STD-1472F section titled <i>Acoustical Noise</i> . Hearing protection may be required for some activities.	PL-446	3.3.3.2.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
A-2090	3.3.3.6.0-2	(U) The Fire Control System, in all configurations, shall have acoustic noise levels and durations that comply with MIL-STD-1474D requirement titled <i>Steady-State Noise, Personnel Occupied Areas</i> and MIL-STD-1472F section titled <i>Acoustical Noise</i> . Hearing protection may be required for some activities.	PL-446	3.3.3.2.0-1
A-2132	3.3.3.7.0-1	(U) The Surveillance System shall initialize (power-up) into a safe state, see 6.2.	PL-427	3.3.3.1.0-5
A-2133	3.3.3.7.0-2	(U) The Fire Control System shall initialize (power-up) into a safe state.	PL-427	3.3.3.1.0-5
A-2150	3.3.3.8.0-1	(U) The Surveillance System shall allow the system to perform a function which inherently increases Mishap Probability only if one of the following conditions are satisfied: a. All relevant pre-requisite safety checks are passed prior to performing the potentially hazardous function. b. The safety checks have been explicitly overridden.	PL-611	3.7.1.3.0-1
A-2151	3.3.3.8.0-2	(U) The Fire Control System shall allow the system to perform a function which inherently increases Mishap Probability only if one of the following conditions are satisfied: a. All relevant pre-requisite safety checks are passed prior to performing the potentially hazardous function. b. The safety checks have been explicitly overridden.	PL-611	3.7.1.3.0-1
A-2135	3.3.3.9.0-1	(U) The Surveillance System shall have hardware safety interlocks which cannot be overridden by software.	PL-492	3.3.3.7.0-1
A-2136	3.3.3.9.0-2	(U) The Fire Control System shall have hardware safety interlocks which cannot be overridden by software.	PL-492	3.3.3.7.0-1
A-2144	3.3.3.10.0-1	(U) The Surveillance System software shall deliver safety critical alerts to the operator.	PL-668	3.7.2.0-6
A-2145	3.3.3.10.0-2	(U) The Fire Control System software shall deliver safety critical alerts to the operator.	PL-668	3.7.2.0-6
A-2147	3.3.3.11.0-1	(U) The Surveillance System software shall display a hazardous condition alert.	PL-669	3.7.2.0-7
A-2148	3.3.3.11.0-2	(U) The Fire Control System software shall display a hazardous condition alert.	PL-669	3.7.2.0-7
A-2158	3.3.3.12.0-1	(U) The Surveillance System shall provide for a safe shutdown, whether operator initiated or automatic.	PL-494 PL-428	3.3.3.7.0-2 3.3.3.1.0-6
A-2159	3.3.3.12.0-2	(U) The Fire Control System shall provide for a safe shutdown, whether operator initiated or automatic.	PL-494 PL-428	3.3.3.7.0-2 3.3.3.1.0-6
A-620	3.3.4.0-1	(U) The JLENS Orbit workspaces, user interface displays, and controls shall be designed using the guidance of MIL-STD-1472F, sections titled <i>Control/Display Integration, Visual Displays, Audio Displays, Controls, Labeling and User-Computer Interface</i> .	PL-505 PL-504 PL-503 PL-502 PL-501 PL-500 PL-498	3.3.4.0-12 3.3.4.0-11 3.3.4.0-10 3.3.4.0-9 3.3.4.0-8 3.3.4.0-7 3.3.4.0-5

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
			PL-425	3.3.3.1.0-3
A-624	3.3.4.1.0-1	(U) The JLENS Orbit shall be operable, maintainable and supportable by 5th to 95th percentile of Army personnel while wearing Combat Gear and protective clothing (cold weather Mission Oriented Protective Posture (MOPP) IV) in accordance with MIL-STD-1472F, sections titled <i>Physical Accommodation</i> , <i>Workspace Design</i> , and <i>Design for Maintainer</i> .	PL-513 PL-512 PL-511 PL-510 PL-509 PL-508 PL-499 PL-498 PL-2111 PL-2110 PL-2109 PL-496	3.3.4.1.0-6 3.3.4.1.0-5 3.3.4.1.0-4 3.3.4.1.0-3 3.3.4.1.0-2 3.3.4.1.0-1 3.3.4.0-6 3.3.4.0-5 3.3.4.0-4 3.3.4.0-3 3.3.4.0-2 3.3.4.0-1
A-626	3.3.4.2.0-1	(U) The Surveillance System shall have environmental control systems and other features that support human physical needs, endurance, and comfort during extended operations as specified in MIL-STD-1472F, section titled <i>Environment</i> .	PL-515	3.3.4.2.0-1
A-1746	3.3.4.2.0-2	(U) The Fire Control System shall have environmental control systems and other features that support human physical needs, endurance, and comfort during extended operations as specified in MIL-STD-1472F, section titled <i>Environment</i> .	PL-515	3.3.4.2.0-1
A-628	3.3.4.3.0-1	(U) The operator stations in the Surveillance System shall have human-to-machine interfaces which are designed to use state-of-the-art computer and display technology.	PL-624 PL-607 PL-517	3.7.1.4.0-9 3.7.1.2.0-10 3.3.4.3.0-1
A-1747	3.3.4.3.0-2	(U) The operator stations in the Fire Control System shall have human-to-machine interfaces which are designed to use state-of-the-art computer and display technology.	PL-624 PL-607 PL-517	3.7.1.4.0-9 3.7.1.2.0-10 3.3.4.3.0-1
A-634	3.3.5.1.1.0-1	<b>b(3)</b>	PL-522	3.3.5.1.1.0-1
A-635	3.3.5.1.1.0-2	<b>b(3)</b>	PL-522	3.3.5.1.1.0-1
A-1671	3.3.5.1.1.0-3	(U) The Surveillance System shall incorporate the security principle of least privilege, see 6.2.	PL-523	3.3.5.1.1.0-2
A-1674	3.3.5.1.1.0-4	(U) The Fire Control System shall incorporate the security principle of least privilege, see 6.2.	PL-523	3.3.5.1.1.0-2
A-1694	3.3.5.1.1.0-5	(U) The Surveillance System shall incorporate identification, authentication, and access controls.	PL-2146	3.3.5.1.1.0-2.0-4
A-1695	3.3.5.1.1.0-6	(U) The Fire Control System shall incorporate identification, authentication, and access controls.	PL-2146	3.3.5.1.1.0-2.0-4
A-1675	3.3.5.1.1.0-7	<b>b(3)</b>	PL-2147	3.3.5.1.1.0-2.0-3

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		b(3)		
A-1676	3.3.5.1.1.0-8	b(3)	PL-2147	3.3.5.1.1.0-2.0-3
A-1678	3.3.5.1.1.0-9	b(3)	PL-2148	3.3.5.1.1.0-2.0-2
A-1679	3.3.5.1.1.0-10	b(3)	PL-2148	3.3.5.1.1.0-2.0-2
A-1681	3.3.5.1.1.0-11	(U) The Surveillance System shall only use binary or machine executable public domain software products or other software products, such as those commonly known as freeware or shareware, that have been assessed for information assurance impacts or which have been approved by the DAA.	PL-2149	3.3.5.1.1.0-2.0-1
A-1682	3.3.5.1.1.0-12	(U) The Fire Control System shall only use binary or machine executable public domain software products or other software products, such as those commonly known as freeware or shareware, that have been assessed for information assurance impacts or which have been approved by the DAA.	PL-2149	3.3.5.1.1.0-2.0-1
A-111699	3.3.5.1.1.0-13	(U) The security support structure of the Surveillance System shall be isolated. Means of isolation may include the use of partitions and/or domains that control access to and integrity of hardware, software, and firmware that perform security functions.	PL-529	3.3.5.1.1.0-3
A-111698	3.3.5.1.1.0-14	(U) The security support structure of the Fire Control System shall be isolated. Means of isolation may include the use of partitions and/or domains that control access to and integrity of hardware, software, and firmware that perform security functions.	PL-529	3.3.5.1.1.0-3
A-637	3.3.5.1.2.0-7	b(3)	PL-525	3.3.5.1.2.0-1
A-638	3.3.5.1.2.0-8	b(3)	PL-525	3.3.5.1.2.0-1
A-1702	3.3.5.1.2.0-11	b(3)	PL-531	3.3.5.1.2.0-2
A-1703	3.3.5.1.2.0-12	b(3)	PL-531	3.3.5.1.2.0-2
A-643	3.3.5.1.2.0-13	(U) The Surveillance System shall implement virus	PL-527	3.3.5.1.2.0-3

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		protection for all servers, workstations, and mobile computing devices.		
A-644	3.3.5.1.2.0-14	(U) The Fire Control System shall implement virus protection for all servers, workstations, and mobile computing devices.	PL-527	3.3.5.1.2.0-3
A-1692	3.3.5.1.4.0-1	(U) The Surveillance System shall implement locks and alarms for the protection of classified information systems in accordance with the appropriate level of classification.	PL-533	3.3.5.1.4.0-1
A-1693	3.3.5.1.4.0-2	(U) The Fire Control System shall implement locks and alarms for the protection of classified information systems in accordance with the appropriate level of classification.	PL-533	3.3.5.1.4.0-1
A-698	3.4.1.0-1	(U) The Surveillance System design shall comply with the applicable information technology standards contained in the DoD Information Technology Standards Registry (DISR).	PL-537	3.4.0-1
A-699	3.4.1.0-2	(U) The Fire Control System design shall comply with the applicable information technology standards contained in the DoD Information Technology Standards Registry (DISR).	PL-537	3.4.0-1
A-709	3.5.2.2.2.0-1	<b>b(3)</b>	PL-322	3.2.4.2.0-14
A-710	3.5.2.2.2.0-2	<b>b(3)</b>	PL-322	3.2.4.2.0-14
A-712	3.5.2.2.3.0-1	<b>b(3)</b>	PL-323	3.2.4.2.0-15
A-713	3.5.2.2.3.0-2	<b>b(3)</b>	PL-323	3.2.4.2.0-15
A-715	3.5.3.0-1	(U) The JLENS Orbit shall be designed to use standard military vehicles, shelters and trailers unless the government approves justification for non-military equipment.	PL-406	3.2.6.0-1
A-716	3.5.3.0-2	(U) The JLENS Orbit shall be designed such that standard military vehicles can be used for ground transportation.	PL-407	3.2.6.0-2
A-718	3.5.4.0-1	(U) The JLENS Orbit shall be designed to use military lifting and handling equipment, unless the government approves justification for non-military equipment.	PL-577	3.5.4.0-1
A-719	3.5.4.0-2	(U) The JLENS Orbit shall be designed such that standard military vehicles can be used for handling.	PL-408	3.2.6.0-3
A-731	3.5.6.1.0-1	<b>b(3)</b>	PL-579	3.5.5.0-1

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		b(3)		
A-732	3.5.6.1.0-2	b(3)	PL-579	3.5.5.0-1
A-734	3.5.6.2.0-1	b(3)	PL-580	3.5.5.0-2
A-735	3.5.6.2.0-2	b(3)	PL-580	3.5.5.0-2
A-747	3.7.1.1.1.0-1	b(3)	PL-306 PL-304	3.2.4.1.0-3 3.2.4.1.0-1
A-749	3.7.1.1.1.2.0-1	b(3)	PL-307 PL-304	3.2.4.1.0-4 3.2.4.1.0-1
A-751	3.7.1.1.2.0-1	b(3)	PL-309	3.2.4.2.0-1
A-2181	3.7.1.1.3.0-1	(U) The Platform shall report status data, including deployed tether length and telemetry data, to the associated system CPG.	PL-664	3.7.2.0-3
A-753	3.7.1.1.4.0-1	b(3)	PL-324 PL-2136	3.2.4.2.0-16 3.2.4.2.0-17
A-759	3.7.1.1.5.0-1	(U) The Platform shall incorporate a transponder disable capability.	PL-592	3.7.1.1.0-4
A-2180	3.7.1.1.6.0-1	(U) The Platform shall report weather data to the associated system CPG.	PL-663	3.7.2.0-2
A-6424	3.7.1.1.6.0-2	(U) The Platform shall incorporate a weather radar disable capability.	PL-621	3.7.1.4.0-6
A-6318	3.7.1.1.7.0-1	b(3)	PL-645	3.7.1.4.1.0-15
A-	3.7.1.1.8.0-1	b(3)	PL-615	3.2.1.6.0-5



A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
7015		<b>b(3)</b>		
A-761	3.7.1.2.0-1	(U) The Platform shall be designed such that it can be used for the Surveillance System and the Fire Control System.	PL-586 PL-300	3.7.1.0-2 3.2.3.0-2
A-764	3.7.1.3.1.0-1	<b>b(3)</b>	PL-604	3.7.1.2.0-8
A-765	3.7.1.3.1.0-2	<b>b(3)</b>	PL-605	3.7.1.2.0-9
A-767	3.7.1.3.2.0-1	<b>b(3)</b>	PL-604	3.7.1.2.0-8
A-768	3.7.1.3.2.0-2	<b>b(3)</b>	PL-605	3.7.1.2.0-9
A-774	3.7.1.4.1.0-1	(U) The Platform, in the appropriate operational mode, shall elevate a distributed 7,000 lb payload to an altitude of 10 kft MSL with a sea level pad at a temperature of 120°F at zero wind.	PL-591 PL-595	3.7.1.1.0-3 3.7.1.1.0-7
A-1664	3.7.1.4.2.0-1	<b>b(3)</b>	PL-388	3.2.5.2.1.0-10
A-6414	3.7.1.4.2.0-2	<b>b(3)</b>	PL-388	3.2.5.2.1.0-10
A-6413	3.7.1.4.3.0-1	<b>b(3)</b>	PL-148	3.2.1.4.0-3
A-6376	3.7.1.4.4.0-1	(U) The platform shall include an aerostat that meets appropriate safety requirements for airborne platforms as specified by the Federal Aviation Administration (FAA) and the international community.	PL-596	3.7.1.1.0-8
A-782	3.7.1.4.4.1.0-1	(U) The aerostat shall include strobe lighting configured for operator selected visual or infrared modes.	PL-602 PL-594	3.7.1.1.0-14 3.7.1.1.0-6
A-776	3.7.1.4.4.2.0-1	<b>b(3)</b>	PL-601 PL-593	3.7.1.1.0-13 3.7.1.1.0-5
A-777	3.7.1.4.4.2.0-2	(U) Flight termination receivers shall preclude	PL-599	3.7.1.1.0-11

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
		inadvertent activation by unauthorized sources.		
A-778	3.7.1.4.4.2.0-3	<b>b(3)</b>	PL-601 PL-600	3.7.1.1.0-13 3.7.1.1.0-12
A-785	3.7.1.4.5.0-1	(U) The Platform shall provide modular connectivity points, see 6.2, to accept alternative payloads. Note: If alternate payloads replace the main sensor, the interfaces, weight distribution, form factor, etc. must be maintained.	PL-147	3.2.1.4.0-2
A-789	3.7.1.6.1.0-1	(U) The tether shall provide a mechanical connection between the mooring station and the aerostat.	PL-612 PL-265 PL-253	3.7.1.3.0-2 3.2.2.3.2.2.1 .0-1 3.2.2.3.2.1.1 .0-1
A-791	3.7.1.6.1.0-2	<b>b(3)</b>	PL-614 PL-287 PL-275 PL-274 PL-262	3.7.1.3.0-4 3.2.2.3.2.3.4 .0-1 3.2.2.3.2.2.4 .0-2 3.2.2.3.2.2.4 .0-1 3.2.2.3.2.1.4 .0-1
A-792	3.7.1.6.1.0-3	(U) The tether shall be a component in the control of the aerostat operating altitude.	PL-612 PL-265 PL-253	3.7.1.3.0-2 3.2.2.3.2.2.1 .0-1 3.2.2.3.2.1.1 .0-1
A-794	3.7.1.6.2.0-1	<b>b(3)</b>	PL-613 PL-280	3.7.1.3.0-3 3.2.2.3.2.3.2 .0-1
A-796	3.7.1.6.2.0-2	<b>b(3)</b>	PL-645 PL-644 PL-643 PL-642 PL-640 PL-293 PL-292 PL-282 PL-281 PL-280 PL-269 PL-268 PL-257 PL-256	3.7.1.4.1.0-15 3.7.1.4.1.0-14 3.7.1.4.1.0-13 3.7.1.4.1.0-12 3.7.1.4.1.0-10 3.2.2.3.2.4.2 .0-2 3.2.2.3.2.4.2 .0-1 3.2.2.3.2.3.2 .0-3 3.2.2.3.2.3.2 .0-2 3.2.2.3.2.3.2

A-Spec ID	A-Spec Section Number	System Specification Text	PL ID	PL Section
				.0-1 3.2.2.3.2.2.2 .0-2 3.2.2.3.2.2.2 .0-1 3.2.2.3.2.1.2 .0-2 3.2.2.3.2.1.2 .0-1
A-798	3.7.1.7.0-1	(U) The Platform shall include all required equipment to fly in Visual Flight Rules (VFR) conditions.	PL-597	3.7.1.1.0-9
A-800	3.7.1.8.0-1	b(3)	PL-654 PL-653 PL-646 PL-639 PL-623 PL-598 PL-232 PL-143 PL-142 PL-141 PL-140 PL-2135	3.7.1.4.1.0-20 3.7.1.4.1.0-19 3.7.1.4.1.0-16 3.7.1.4.1.0-9 3.7.1.4.0-8 3.7.1.1.0-10 3.2.2.3.1.3.4 .0-3 3.2.1.3.0-6 3.2.1.3.0-5 3.2.1.3.0-4 3.2.1.3.0-3 3.7.1.4.1.0-21
A-802	3.7.1.9.0-1	(U) The Platform Ground Support Equipment (GSE) shall include equipment to monitor and record meteorological data and conditions to include: temperature, precipitation, humidity, icing, wind velocity, barometric pressure and lightning.	PL-660 PL-620 PL-618 PL-144	3.7.1.4.3.0-1 3.7.1.4.0-5 3.7.1.4.0-3 3.2.1.3.0-7
A-804	3.7.1.9.1.0-1	(U) The Platform meteorological equipment shall have a range to provide warning to allow the aerostat to be in-hauled and moored for protection against thunderstorms and winds greater then the limits specified in 3.2.5 <i>Environmental Conditions</i> .	PL-619	3.7.1.4.0-4

**6.4 Internal Traceability Matrix****Table I Platform PIDS : Internal Traceability Matrix**

ID	Section	Platform PIDS Text	Lower Section	Lower PL ID
PL-448	3.3.3.3.0-1	(U) The Platform shall implement grounding and bonding using MIL-STD-464A as guidance.	3.3.3.3.0-2 3.3.3.3.0-3 3.3.3.3.0-4 3.3.3.3.0-5	PL-449 PL-450 PL-452 PL-453
PL-595	3.7.1.1.0-7	(U) At the lift check prior to the mission, the Aerostat shall have 15% of Standard Gross Lift at operational altitude.	3.2.2.3.2.1.1.0-2 3.2.2.3.2.4.1.0-1	PL-254 PL-290

**6.5 Objective Requirements for Study**

(U) This section is not applicable to this specification

**6.6 Objective Requirements for Options**

(U) This section is not applicable to this specification

## 7 Appendix

### 7.1 (U) Transport Requirements

(U) See Table IV for transport requirements related to shock and vibration.

Table IV (U) Shock and Vibration

Parameter	Load Method	Longitudinal Value / Limits	Vertical Value / Limits	Lateral Value / Limits	Units	References
<b>Acceleration, Aerostat Induced, Operation</b>						
Acceleration, Aerostat Induced, Operation[1]	Static Equivalent	0.11	0.15	0.30	G	<i>Derived for 71 M aerostat. Static equivalent peak loads derived for 40 knot steady wind, 6.5 fps rms turbulence, Fred Folch-Pi, JLENS: A-Specification Motion and Shock Section, Updates, Revision C, 24 September 2005, revised 12 January 2005, page 4.</i>
<b>Operational Vibration - Aerostat Mounted Equipment</b>						
Acceleration, Aerostat Induced, Operation, RMS	Random Vibration	0.023	0.023	0.023	G	<i>Derived based on 71 M aerostat config. Only aerostat mounted equipment could be exposed to operational vibration. Ground based shelter mounted equipment will have no significant operational vibration requirement unless mounted on or very close to rotating equipment such as fans or pumps. Expected to be benign.</i>

<b>Acceleration, Aerostat Induced, Survival</b>						
Acceleration, Aerostat Induced, Survival[2]		See Reference	See Reference	See Reference	G	100 knot steady wind, 0 Turbulence, A-Spec., (80 knot winds, 10 fps rms turbulence is far more severe)
Acceleration, Aerostat Induced, Survival[2]	Static Equivalent	0.33	0.55	1.00	G	<i>Derived for 71 M Aerostat. Static equivalent peak load, 80 knot steady wind, 10 fps rms turbulence, Fred Folch-Pi, JLENS: A-Specification Motion and Shock Section, Updates, Revision C, 24 September 2005, revised 12 January 2005, page 4.</i>
Acceleration, Aerostat Induced, Survival[2]		See Reference	See Reference	See Reference	G	0 knot steady wind, 13 fps rms turbulence, (strictly by analysis where the starting point is the 71 m aerostat). (80 knot winds, 10 fps rms turbulence is far more severe.)
<b>Survival Vibration - Aerostat Mounted Equipment</b>						
Acceleration, Aerostat Induced, Survival, RMS	Random Vibration	0.18	0.18	0.19	G	<i>Derived based on 71 M aerostat config. Only aerostat mounted equipment could be exposed to survival vibration.</i>
<b>Acceleration, Aircraft Transportation, Acceleration</b>						
<b>Acceleration, Aircraft Transportation, Equipment Restraint Loads</b>						

Acceleration, Aircraft Transportation Equipment Restraint Inertial Loads[3]	Static Equivalent	Fore <sup>5</sup> = 3.0, Aft <sup>5</sup> = 1.5	Up <sup>4</sup> = 2.0, Down <sup>4</sup> = 4.5	Left <sup>5</sup> = 1.5, Right <sup>5</sup> = 1.5	G	Peak Static Equivalent Loads, Equipment Restraint Criteria, Source: MIL-HDBK-1791, 14 February 1997, Section 4.2.3.2, page 14, Restraint Criteria.
<b>Acceleration, Aircraft Transportation, Shock</b>						
<b>Acceleration, Aircraft Transportation, Landing Shock, General</b>						
Acceleration, Aircraft Transportation Landing Shock, General[3,6]	Static Equivalent	Fore <sup>5</sup> = 3.0, Aft <sup>5</sup> = 1.5	Up <sup>4</sup> = 2.0, Down <sup>4</sup> = 4.5	Left <sup>5</sup> = 1.5, Right <sup>5</sup> = 1.5	G	Peak Static Equivalent Loads, Equipment Restraint Criteria, Source: MIL-HDBK-1791, 14 February 1997, Section 4.2.3.2, page 14, Restraint Criteria.
<b>Acceleration, Aircraft Transportation, Loading/Unloading</b>						
Acceleration, Aircraft Transportation, Loading/Unloading[3]	Static Equivalent	0.25	3.00	0.25	G	Derived. Fred Folch-Pi, JLENS: A-Specification Motion and Shock Section, Updates, Revision C, 24 September 2005, revised 12 January 2005, page 3.
<b>Acceleration, Aircraft Transportation, Vibration</b>						
<b>Acceleration, Aircraft Transportation, C-130A-H, J Vibration, Composite</b>						



Acceleration, Aircraft Transportation, C-130 A-H, J Propeller Driven Random Vibration[3,7], rms	Random Vibration	4.91	4.91	4.91	G	Derived. Integrated Power Spectrum for reference use only. See PSD plot and breakpoint table for detailed design. Vibrations as experience by cargo affixed to the aircraft cargo floor. Source: Martin Blustine, Power Spectral Densities for Environmental Specifications, JLENS:2005:042, 19 July 2005, page 4 - 5.
<b>Acceleration, Aircraft Transportation, C-5A and C-17 Jet Driven Vibration[3,7], Area Under PSD Curve, Composite</b>						
Acceleration, Aircraft Transportation, C-5A and C-17 Jet Driven Vibration[3,7], rms	Random Vibration	5.17	5.17	5.17	G	Derived. Integrated Power Spectrum for reference use only. See PSD plot and breakpoint table for detailed design. Vibrations as experience by cargo affixed to the aircraft cargo floor. Source: Martin Blustine, Power Spectral Densities for Environmental Specifications, JLENS:2005:042, 19 July 2005, page 3.
<b>Acceleration, Ground Transportation, Truck, Loading/Unloading, Sling</b>						

Acceleration, Ground Transportation, Truck, Loading/Unloading[3], Sling	Static Equivalent	0.25	3.0	0.25	G	Derived. Crane and Rigging for Loading/Unloading Source: Fred Folch-Pi, MED-04-797/JLENS 24 September 2004, Revised 12 January 2005, page 2.
<b>Acceleration, Ground Transportation, Slow Moving Dolly</b>						
Acceleration, Ground Transportation, Slow-Moving Dolly, Limit Load Factors[3]	Static Equivalent	± 1.0	+ 2.0	± 0.75	G	Peak Limit Load Factors. Source: NASA SP-8077, Transportation and Handling Loads, page 7, Table 1.
<b>Acceleration, Ground Transportation, Truck, Shock</b>						
Acceleration, Ground Transportation, Truck, Shock Levels[3]	Static Equivalent	3.00	5.0	3.00	G	Derived. Flat Bed Truck on a paved or improved unpaved road. Source: Fred Folch-Pi, MED-04-797/JLENS 24 September 2004, Revised 12 January 2005, page 3.
<b>Acceleration, Ground Transportation, Truck, Vibration, Generalized</b>						
Acceleration, Ground Transportation, Truck, Random Vibration Levels[3,8], rms	Random Vibration	1.15	2.26	1.19	G	Derived. JLENS - 2008-0072. 'CPG <b>b(3)</b> Analysis', February 20, 2008
<b>Acceleration, Ground Transportation, Loading/Unloading, Sling, Rail</b>						

Acceleration, Ground Transportation, Rail, Loading/Unloading[3], Sling	Static Equivalent	0.25	3.0	0.25	G	Derived. Crane and Rigging for Loading/Unloading Source: Fred Folch-Pi, MED-04-797/JLENS 24 September 2004, Revised 12 January 2005, page 3.
<b>Acceleration, Ground Transportation, Rail, Shock</b>						
Acceleration, Ground Transportation, <b>b(3)</b> Impact, Shock	Static Equivalent	5.0	3.0	3.0	G	<b>b(3)</b>
<b>Acceleration, Ground Transportation, Rail, Random Vibration</b>						
Acceleration, Ground Transportation, Rail, Random Vibration[3], rms	Random Vibration	0.488	0.488	0.488	G	Derived. Source: MIL-STD-810F, page 514.5C-11, Figure 514.5C-7 Rail Cargo Vibration Exposure
<b>Acceleration, Sea Transportation</b>						
<b>Acceleration, Sea Transportation, Cargo Ship, Loading/Unloading</b>						

Acceleration, Sea Transportation, Cargo Ship, Loading/Unloading[3]	Static Equivalent	0.25	3.0	0.25	G	Derived. Crane and Rigging for Loading/Unloading. Source: Fred Folch-Pi memo MED-04-797/JLENS of 9/24/04, revised 12 January 2005, page 3.
<b>Acceleration, Sea Transportation, Barge, Static Equivalent Loads</b>						
Acceleration, Sea Transportation, Barge, Static Equivalent Loads[3] for Sea State 2	Static Equivalent	± 0.04	1 ± 0.08	± 0.07	G	Derived. Static Equivalent Peak Loads, Calculated from Sea State 2 winds and wave heights, 10 knot winds, 3 ft wave heights, Source: MIL-STD-1399, DoD Interface Standard for Shipboard Systems, Section 301A, Ship Motion and Attitude, 21 July 1986, Appendix.
<b>Acceleration, Sea Transportation, Cargo Ship, Limit Load Factors</b>						
Acceleration, Sea Transportation, Cargo Ship, Limit Load Factors[3]	Static Equivalent	± 0.14	1 ± 0.35	± 0.33	G	<b>b(3)</b>
<b>Acceleration, Sea Transportation, Vibration</b>						

Acceleration, Sea Transportation, Cargo Ship, Random Vibration[3] Levels, rms	Random Vibration	0.315	0.315	0.315	G	Derived. Source: MIL-STD-810F, DoD Test Method Standard for Environmental Engineering Considerations and Laboratory Tests, 1 January 2000, page 514.5C-15, Figure 514.5C-15, Shipboard Random Vibration Exposure.
<b>Transportation Drop Shock - LRUs in shipping containers</b>						
Acceleration, Static Equivalent Loads	Static Equivalent	5.0	5.0	5.0	G	Derived. Drop heights to be tailored. Shipping containers and shipping fixtures to be designed to limit g levels of item to be below design loads.
<b>Transit Drop</b>						
Drop heights	Drop test or simulation	See not [9]	See not [9]	See not [9]	G	<b>b(3)</b>
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(U) Notes:

1. "Operating" is defined to mean that, while in operation in its deployed state, the JLENS equipment maintains its mechanical and electrical integrity without damage, deterioration, or degradation of performance, reliability or maintainability, except that performance degradation is permissible in the presence of rain or other natural and induced environments.
2. "Survival" is defined to mean that in any state of operation or non-operation and in any state of deployment or transportation, the System equipment, when exposed to any single threatening event that may impair the ability of the System to perform mission critical functions and/or reduce the System MTBSA, the System may require repairs. These repairs will be completed within the MTTR of the System.
3. "Non-operating" is defined to mean that, while non-operating, in its deployed or non-deployed state, or in transportation, the JLENS equipment maintains its mechanical and electrical integrity without damage, deterioration or degradation of performance, reliability or maintainability.
4. Without loss of serviceability
5. Without loss of structural integrity

6. Any anticipated aircraft landing shock incurred by the ISO-containerized JLENS equipment will be less in all axes than those presented for ground transport shock in the referenced memo.

7. The aircraft requirements presented are for the C-5A, C-17 and C-130A-H, J transport aircraft. These vibration power spectral densities are to be considered as base input accelerations into the aircraft-borne ISO containers, only. The actual static equivalent rms accelerations that will be experienced by the JLENS containerized equipment will be determined by dynamic load path content characteristic of the specific transported equipment in question. Thus the processing station, while packaged in its ISO container, will exhibit a unique dynamic response to transport flight vibration different from the behavior exhibited by the FCR antenna ISO-containerized equipment. There are more than 20 distinct transport packaging configurations for JLENS ISO containers and each one will have its own unique dynamic response to the transport flight vibration input profiles appearing in the referenced memo.

8. "Off-road" is defined as a dirt road whose terrain profile smoothness is at or better than the smoothness characteristic of a Perryman I road course. The dynamic vibration responses of the ISO-containerized JLENS equipment will not exceed those characterized by the Perryman power spectral density (PSD) profiles shown in the referenced memo.

9. The JLENS equipment in its ISO container or in ISO shelters will be subjected to [REDACTED] b(3) in accordance with ASTM E 1976-05, Paragraph 7.22.1 [REDACTED] b(3) using the methodology defined in ASTM E 1976-05, Paragraph 7.22.2. Equipment protection will be provided by such means as shock isolation to limit equipment shock exposure to peak g's that are lower than the equipments fragility level.

The JLENS equipment in its ISO container or in ISO shelters [REDACTED] b(3) in accordance with ASTM E 1976-05, Paragraph 7.22.1 and [REDACTED] b(3) the methodology defined in ASTM E 1976-05, Paragraph 7.22.2. Equipment protection will be provided by such means as shock isolation to limit equipment shock exposure to peak g's that are lower than the equipments fragility level.

## 7.2 (U) Ground Transportation

### 7.2.1 (U) Road Transportation

(U) The ground transport vibration spectra given in Figure 7 with spectral break points given in Table V were developed based on a survey of commercial and military transportation vibration specifications and previously [REDACTED] b(3)

(U) A published reference specification for JLENS mobility for use in program-level requirements documentation, "SAE AS 8090, Type III Mobility with the exclusion of Belgian Block".

(U) The requirement for ground mobility has always been exposure to the vibration environment induced by road and off-road march over access terrain with surface characteristics NTE that represented by Perryman Cross-Country Road Course No.1. This design vibration environment accounts for travel over highways, secondary roads, improved unpaved roads and Perryman1-type off-road terrain. Several Major Items such as CPG, radar SDP, FCR Antenna, and the Aerostat support structures have been identified as risks for all-terrain transport in terms of packaging/crating/fixturing design and ISO container volume.

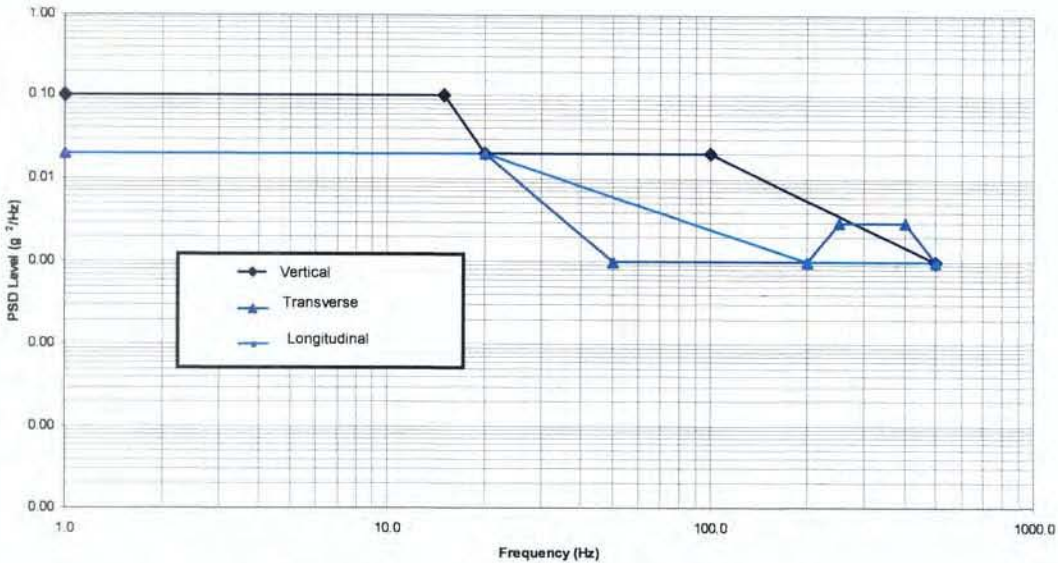


Figure 7 (U) Ground Transport Vibration Spectra

Table V (U) Breakpoints for Ground Transport Vibration Spectra

Ground Transport Spectra Break Points					
Vertical Axis		Transverse Axis		Longitudinal Axis	
Frequency (Hz)	Level (g <sup>2</sup> /Hz)	Frequency (Hz)	Level (g <sup>2</sup> /Hz)	Frequency (Hz)	Level (g <sup>2</sup> /Hz)
1.0	0.10	1.0	0.02	1.0	0.02
15.0	0.10	20.0	0.02	20.0	0.02
20.0	0.02	50.0	0.001	200.0	0.001
100.0	0.02	200.0	0.001	500.0	0.001
500.0	0.001	250.0	0.003		
		400.0	0.003		
		500.0	0.001		
g <sub>rms</sub> = 2.26		g <sub>rms</sub> = 1.19		g <sub>rms</sub> = 1.15	

### 7.2.2 (U) Rail Transportation

(U) Rail ISO cargo vibration exposure for ISO containers transported on **b(3)** cars and restrained to the rail car bed will experience input random vibration exposure per MIL-STD-810F, Annex C. The integrated 1σ value of random vibration per Figure 8 has been calculated to be 0.49 G rms while the peak 3σ value is 1.47 G rms. The breakpoints may be found in Table VI.

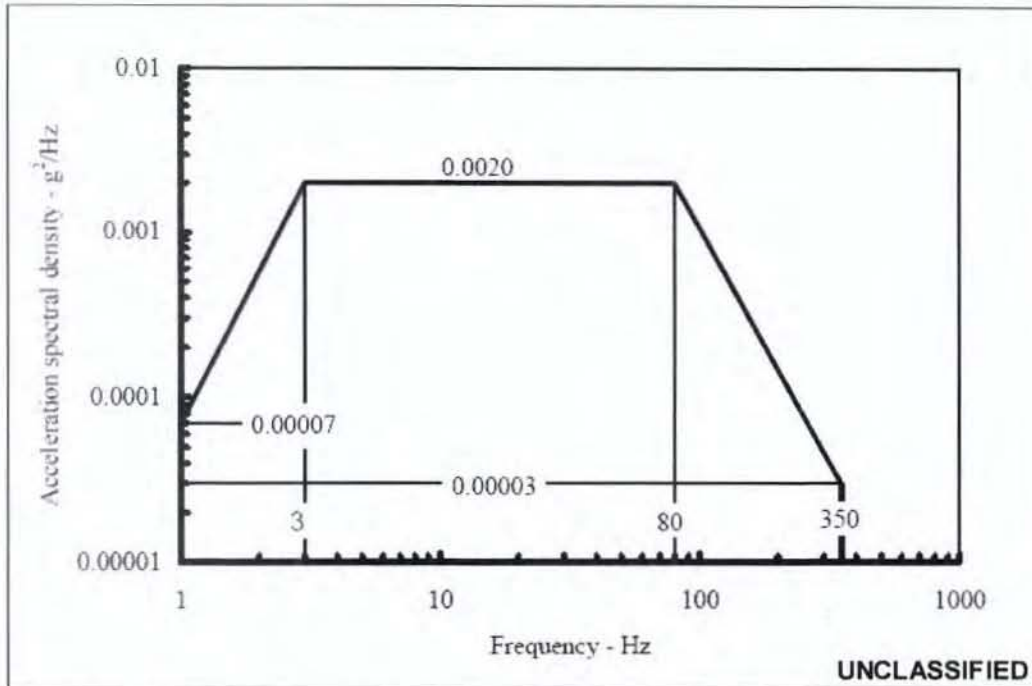


Figure 8 (U) Acceleration Power Spectral Density for Rail ISO Cargo Random Vibration  
 Table VI (U) Breakpoints for Rail ISO Cargo Random Vibration

Frequency (Hz)	Acceleration Power Spectral Density (G <sup>2</sup> /Hz)	Slope (dB/octave)
1	0.00007	
3	0.0020	9.18
80	0.0020	0.00
350	0.00003	-8.57
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### 7.3 (U) Transportation by Sea

(U) Ship ISO cargo vibration exposure for ISO containers transported on ships and restrained to the ship cargo hold floor will experience input random vibration exposure per MIL-STD-810F, Annex C. The integrated 1σ value of random vibration per Figure 9 has been calculated to be 0.315 G rms while the peak 3σ value is 0.945 G rms. The breakpoints may be found in Table VII.



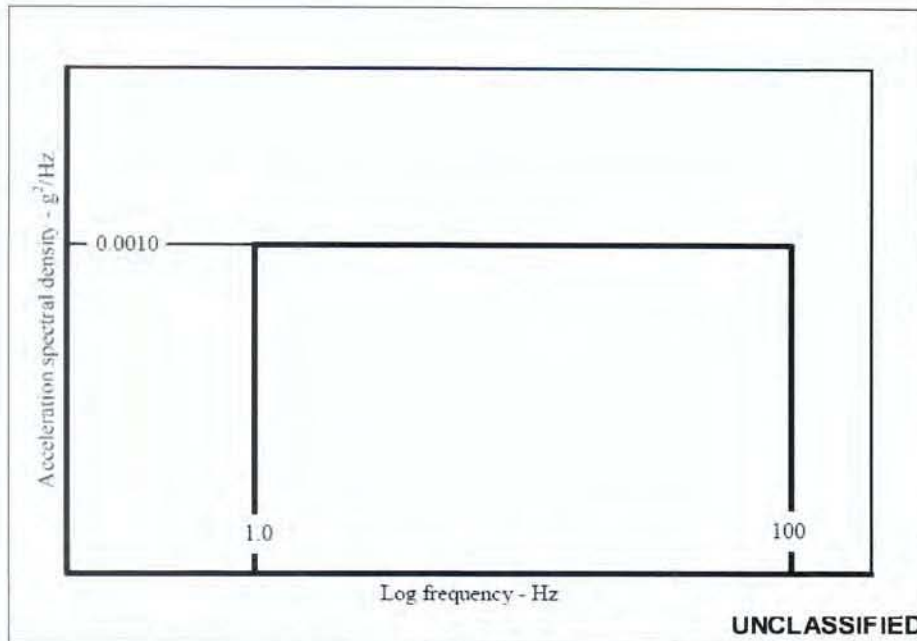


Figure 9 (U) Acceleration Power Spectral Density for Ship ISO Cargo Random Vibration  
 Table VII (U) Breakpoints for the Ship ISO Cargo Random Vibration

Frequency (Hz)	Acceleration Power Spectral Density (G <sup>2</sup> /Hz)	Slope (dB/octave)
1	0.001	
100	0.001	0.00
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**7.4 (U) Transportation by Air**

(U) The vibration profiles presented in this section, for jet and propeller transport aircraft, have been derived from MIL-STD-810F.

(U) The 1σ or rms value for the case of random vibration for each profile is obtained by integrating the area under each profile and taking its square root. The peak value for random vibration is taken to be the 3σ value.

**7.4.1 (U) JLENS Air Transport Vibration Profiles**

(U) Air transport requirements presented in this section are for the C-5A, C-17 and C-130A-H, J transport aircraft. These vibration power spectral density profiles are to be considered as base input accelerations into the aircraft-borne ISO containers only. The actual static equivalent rms accelerations that will be experienced by JLENS containerized equipment will be determined by dynamic load path content characteristic of the specific transported equipment in question. Thus, the processing station, in its ISO container state, will exhibit a unique dynamic response to transport flight vibration that is different from the behavior exhibited by the PTIR ISO-containerized equipment. There are more than 20 possible transport packaging configurations for JLENS ISO containers and each one will have its own unique dynamic response to the transport vibration input profiles.

**7.4.2 (U) JLENS Air Transport Jet Vibration Profile for C-5A, C-17 and C-141**

(U) The vibration profile for the JLENS transport jet aircraft is shown in Figure 10 with the breakpoints for the plot given in Table VIII. The integrated 1σ value computes to be 5.17 G-rms.

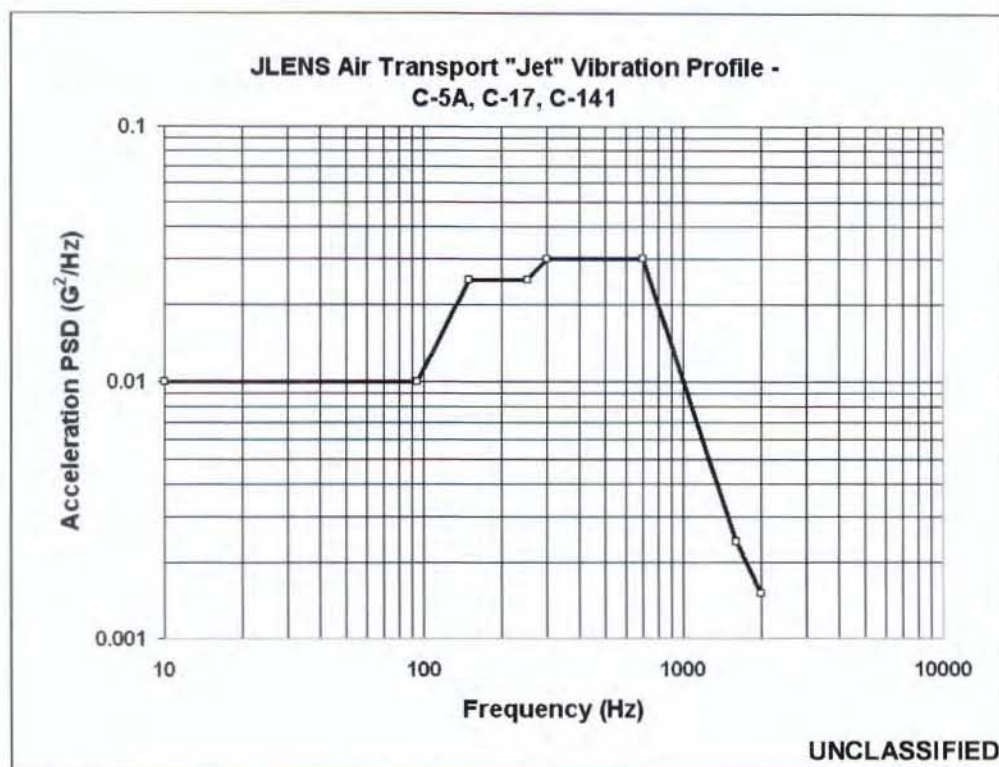


Figure 10 (U) JLENS Transport Jet Vibration Profile  
Table VIII(U) Breakpoints for Jet Vibration

<b>JLENS "Jet" Profile</b>	
<b>Break Points</b>	
<b>Frequency (Hz)</b>	<b>PSD (G<sup>2</sup>/Hz)</b>
10	0.01
94	0.01
150	0.025
250	0.025
300	0.03
700	0.03
1600	0.0024
2000	0.0015

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### 7.4.3 (U) JLENS Air Transport Propeller Driven Vibration Profile for C-130A-H, J

(U) The vibration profile for the JLENS transport propeller-driven aircraft is shown in Figure 11 with the breakpoints for the plot given in Table IX. The profile includes resonance peaks (stove-pipes) for sinusoidal vibrations for 3, 4 and 6 blade propellers, although these peaks are treated as random vibrations when the spectrum is integrated. The integrated  $1\sigma$  value computes to be 4.91 G-rms.

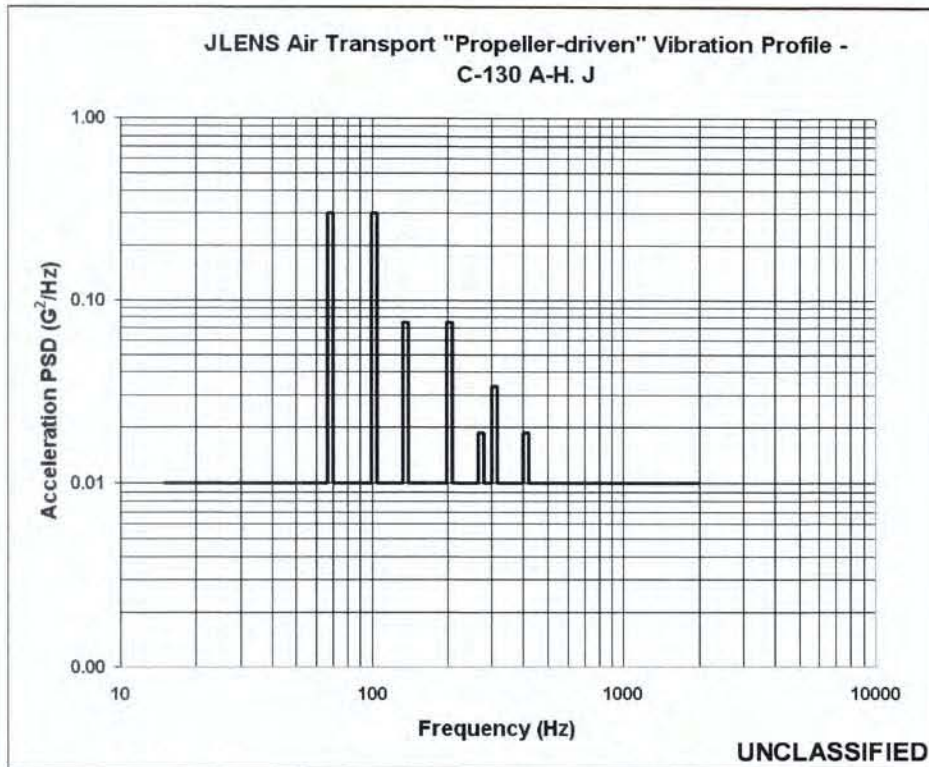


Figure 11 (U) JLENS Transport Propeller-Driven Aircraft Vibration Profile  
 Table IX (U) Breakpoints for Transport Propeller-Driven Aircraft Vibration

JLENS "Propeller" Profile Break Points			
Frequency (Hz)	PSD (G <sup>2</sup> /Hz)	Frequency (Hz)	PSD (G <sup>2</sup> /Hz)
15.0	0.01	209.1	0.075
66.3	0.01	209.1	0.01
66.3	0.30	265.2	0.01
69.7	0.30	265.2	0.01875
69.7	0.01	278.8	0.01875
99.45	0.01	278.8	0.01
99.45	0.30	298.35	0.01
104.55	0.30	298.35	0.0333
104.55	0.01	313.65	0.0333
132.6	0.01	313.65	0.01
132.6	0.075	397.8	0.01
139.4	0.075	397.8	0.01875
139.4	0.01	418.2	0.01875
198.9	0.01	418.2	0.01
198.9	0.075	2000.0	0.01

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REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
PROGRAM EXECUTIVE OFFICE, MISSILES AND SPACE  
5250 MARTIN ROAD  
REDSTONE ARSENAL, AL 35898-6000

April 9, 2010

Joint Land Attack Cruise Missile Defense  
Elevated Netted Sensor System Product Office

Mr. [REDACTED] b(6)  
Raytheon Systems Corporation  
350 Lowell Street  
Andover, Massachusetts 01810

Dear [REDACTED] b(6)

The following data item submitted for approval, via the noted transmittal letter under contract DASG60-98-C-0001, CLIN 0018, is approved.

JLENS SuR Prime Item Development Specification (PIDS) (Rev G)  
(CDRL Repository Folder\SDD\CDRL B009\046a SuR PIDS Rev G)

Transmittal Letter, Date: 10-JLSDD-0767a, 10 March 2010

This letter does not constitute or authorize a change to the contract terms and conditions or to the negotiated contract price.

The JLENS Product Office point of contact for this action is [REDACTED] b(6)


[REDACTED] For Configuration Management issues, contact [REDACTED] b(6)

Sincerely

[REDACTED] b(6)

JLENS Technical Monitor  
JLENS Product Office

b(7)(e)

TITLE JLENS SURVEILLANCE RADAR (SuR) PRIME ITEM DEVELOPMENT SPECIFICATION (PIDS) (U)			NUMBER 5219665	REV G	 Raytheon Company Space and Airborne Systems 2000 E. El Segundo Blvd El Segundo, CA 90245-0902 FILE NAME SuR PIDS 5219665RevG
			CAGE CODE 4U884	TOTAL PAGES 1 of 230	
REVISION					
EFF	AUTHORITY	LTR	DESCRIPTION	DATE	
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1-UP	CN_B_JL1031	B	REVISION FOR SDRL DELIVER	2007-12-13	
1-UP	CN_C_JL1077	C	REVISION FOR SDRL DELIVERY	2008-08-11	
1-UP	CN_D_JL1132	D	Revised Per CN_D_JL1132	2008-10-30	
1-UP	CN_E_JL1138	E	Revised Per CN_E_JL1138	2009-12-18	
1-UP	CN_F_JL1241	F	Revised Per CN_F_JL1241	2010-03-01	
1-UP	CN_G_JL1242	G	Revised Per CN_G_JL1242	2010-03-09	
APPROVAL					
PREPARER		DATE		DATE	
b(6)		2007-12-12			
CHECKER					
See PDM for Electronic Approvals					

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# 1 (U) Scope

## 1.1 (U) Description

(U) The JLENS orbit, which is comprised of a Surveillance System and a Fire Control System, includes elevated sensors for long range target detection and tracking. The scope of operations ranges from single Service applications to a full Joint environment in all phases of warfare. The orbit employs advanced technologies with specific attention given to Land Attack Cruise Missile Defense (LACMD) in order to:

- a. (U) Support Surface-to-Air Missile (SAM) systems to perform over-the-horizon (OTH) intercepts of Land Attack Cruise Missiles (LACM) under the Air Directed Surface-to-Air Missile (ADSAM) concept,
- b. (U) Contribute to the Single Integrated Air Picture (SIAP),
- c. (U) Provide target data on surface moving targets (SMT), and
- d. (U) Detect and track Theater Ballistic Missiles (TBM) and Large Caliber Rockets (LCR).

(U) The elevated Surveillance Radar in the Surveillance System detects hostile targets at long ranges. The Surveillance System target reports can be used to cue the Fire Control System to support weapon systems in the engagement of these hostile targets. The elevated Fire Control Radar enables air defense weapons to engage low-flying cruise missiles at extended ranges and minimizes the likelihood of these threats completing their mission. When tasked, the Fire Control System can perform other missions in support of the warfighter. Either system can be employed as a stand-alone system; however the Fire Control system engagement performance will be reduced when operating autonomously.

## 1.2 (U) Documentation Overview

(U) This Prime Item Development Specification (PIDS) defines the requirements and design constraints for the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Surveillance Radar (SuR), derived from the JLENS System Specification. The SuR PIDS also allocates those requirements down to the configuration item level either by derivation or allocation.

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## 2 (U) Applicable Documents

### 2.1 (U) General

(U) The following documents, of exact issue shown, form part of this specification to the extent specified in sections 3, 4, or 5, provided that they are not subject to any applicable federal law or regulation that prohibits their imposition, in which case, they will provide guidance only. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples.

### 2.2 (U) Government Documents

#### 2.2.1 (U) Specifications, Standards, and Handbooks

(U) The following specifications, standards, and handbooks of the exact revision listed below form a part of this specification to the extent specified herein.

(U) MIL-STD-130L, *Identification Marking of U.S. Military Property*, 20 December 2004

(U) MIL-STD-209K, *Interface Standard for Lifting and Tiedown Provisions*, 22 February 1998

(U) MIL-STD-461E, *Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment*, 20 August 1999

(U) MIL-STD-464A, *Electromagnetic Environmental Effects Requirements for Systems*, 19 December 2002

(U) MIL-STD-704F, *Aircraft Electric Power Characteristics*, 12 March 2004

(U) MIL-STD-810F, *Test Method Standard for Environmental Engineering Considerations and Laboratory Tests*, 1 January 2000

(U) MIL-STD-882D, *Standard Practice for System Safety*, 10 February 2000

(U) MIL-STD-1366D, *Interface Standard for Transportability Criteria*, 18 December 1998

(U) MIL-STD-1472F, *Human Engineering*, 23 August 1999

(U) MIL-STD-1474D, *Noise Limits*, 12 February 1997

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(U) MIL-STD-3011, *Interoperability Standard for the Joint Range Extension Application Protocol (JREAP)*, 30 September 2002

(U) MIL-STD-6016C, *Tactical Data Link (TDL) 16 Message Standard*, 31 March 2004

(U) MIL-HDBK-310, *Global Climatic Data for Developing Military Products*, 23 June 1997

(U) MIL-HDBK-419A, *Grounding, Bonding, and Shielding for Electronic Equipments and Facilities*, dated 29 December 1987

(U) MIL-HDBK-454A, *General Guidelines for Electronic Equipment*, 3 November 2000

(U) DoD AIMS 03-1000, *Performance/Design and Qualification Requirements Technical Standard for the ATCRBS/IFF/Mark XIIA Electronic Identification System and Military Implementation of Mode S*, 17 March, 2003.

**2.2.2 (U) Other Government Documents, Drawings, and Publications**

(U) The following other Government documents, drawings, and publications of the exact revision level shown form a part of this document to the extent specified herein.

(U) MIS-PRF-55628A, *Performance Specification for the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS)*

(U) National Telecommunications and Information Administration (NTIA), *Manual of Regulations and Procedures for Federal Radio Frequency Management*, May 2003, Revision: January 2006

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**2.3 (U) Non-Government Publications**

(U) The following documents of the exact revision listed below form a part of this document to the extent specified herein.

(U) 5218828, *SuR Hazardous Materials Management Plan (HMMP)*, Revision -

(U) 5218843, *Test Plan For The Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Surveillance Radar (SuR) Program*

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(U) 5222600-500, *Installation Control Drawing, Windscreen Hardware*

(U) H308499, *Coolant, Glycol Based, Non-Silicate Formulation, (Raytheon IDS Specification)*

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(U) H381794, *Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) System Specification (A-Specification)*

(U) H381794 Annex A, *Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) System Specification Annex A (Annex A-Specification), Rev H*

(U) NFPA-780, *Standard for the Installation of Lightning Protection Systems, 2004 Edition*

(U) *Interface Requirements Specification (IRS) for the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) System Orbit*

### 2.4 (U) Order of Precedence

(U) In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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