

## *Completed Responses to FTTS ACTD Questions*

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
11	SOW		<p>23. XXXXXXXX has some serious concerns regarding the structure of the ACTD. The Army has not made a decision on the strategy for supporting the UA. Yet this ACTD will invest valuable dollars in potentially developing a new platform before the Army has determined that one is even necessary. In other words it presupposes a decision that a "new start" will be the outcome of that decision. There is nothing in the ACTD which directs that the designs developed under this effort be backward compatible to existing platforms should the Army decide that block upgrades are a cost affordable solution. The ACTD structure specifically identifies both a demonstrator design and an OP design. Would it not be more cost effective for the government to mandate that the demonstrator use an existing chassis for technology evaluation purposes, and that a new chassis be developed for the OP solution in a follow-on SDD effort only after a determination has been made that such a chassis is required? This would not only potentially save the government valuable funds, but also insure backward compatibility of the technologies should the government decide that an 85-90% solution can be achieved and will be a cost-affordable approach to support the UA. Many of the below specific comments on the Draft SOW reflect and elaborate on these concerns. (should this be considered a question to be answered only back to this contractor?)</p>	<p>The TWV Modernization Strategy was defined by the PEO CS/CSS COL(P) O'Reilly on 30 March 04. The TWV Modernization Strategy briefing will be made available on the ACE after award. In summary, the FTTS ACTD results will be used as input into the MS B/C decision in FY07. This decision will determine whether the FTTS will be a new start or block upgrades to the current fleet.</p>

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37	Attachment 2 UV spec	3.2.1.8.4	<p>49. Attachment 2, FTTS UV Performance Specification: 3.2.1.8.4 Grade. This paragraph does not identify a distance or time period over which this requirement must be met.</p>	<p>The specification has been revised. The distance or time period is established once the vehicles reach steady state operations. (i.e. cooling temperature has stabilized, the speed on grade has reached steady state speed.)</p>

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45	Attachment 2 UV spec	3.2.4.5	<p>57. Attachment 2, FTTS UV Performance Specification: 3.2.4.5 Towed Load Power &amp; Control Please explain further. Power for what? What is active control?</p>	<p>The section title has been updated to Towed Load Braking &amp; Lighting. The specification has been revised to state "Provisions to actuate the towed vehicles brakes and lights shall be provided."</p>

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49	Attachment 2 UV spec	3.4.11.2	61. Attachment 2, FTTS UV Performance Specification: 3.4.11.2 UH-60 Transport. If the other UA platforms, to include the MSV, are not Blackhawk transportable, why must the UV meet this requirement? What is the cargo weight limit for the aircraft for 30NM radius of action and 60NM radius of action at 4000 ft. and 95 degrees F?	Section 3.4.11.2 has been deleted from the UV Performance Specification.

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54	Attachment 2 UV spec	3.5.3.2.3	66. Attachment 2, FTTS UV Performance Specification: 3.5.3.2.3 Power and Data Growth Capability. Can you provide more specific definition of the provisions required by this paragraph?	Section 3.5.3.2.3 has been removed from the UV Performance Specification.

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57		3.5.8	69. Attachment 2, FTTS UV Performance Specification: 3.5.8 Electrical Connectors. Specifying the 7-pin SAE J560 connector would imply that the service lighting system is required to be 12 volts; however, a NATO 12-pin trailer connector is also required which is dedicated for 24V lighting circuits to support trailers identified by paragraph 3.2.4.4.2. We see no clear advantage to support both lighting system voltages and recommend the 24-volt system be specified since the 24V system must be provided to interface with the legacy trailers (reference Paragraph 3.2.4.4.2) and most of the exterior lighting is required to be LED. Therefore, the 12-volt benefits that were apparent in filament lighting are no longer pertinent. Further, the SAE J560 connector is a commercial automotive product and, by requirements, will not survive the military requirement without product development.	The requirement has been revised in both the MSV and UV Specifications to remove requirements for specific connectors.

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63		3.1.4.2	75. FTTS MSV Performance Specifications, 3.1.4.2 Storage Temperatures Question: Should solar loading/UV requirements be included within the specification? Recommendations: Add a solar/UV requirement as a separate requirement within the document. Reasons: Solar loading may increase interior temperatures and surface temperatures above the 160 F storage temperature, especially in desert environments. Benefits: Improved specification, more accurately reflect storage environment.	Section 3.1.4.2 will remain the same.

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64		3.1.4.3	76. FTTS MSV Performance Specifications, 3.1.4.3 Heater and Defrost Question: Is there a test procedure available for the heater pull-up rate described? Recommendations: Develop a cold room test procedure at -25 or -50 F ambient, no wind, engine run at 1500 rpm, warm-up devices operating. Reasons: Ensure adequate heating performance in severe climates. Benefits: Improved operator productivity.	Army test operating procedures define the cold temperature testing procedures. After award, the government will provide web access to all Test Operating Procedures.

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66		3.1.4.3	78. FTTS MSV Performance Specifications, 3.1.4.3 Heater and Defrost Question: Is there a fresh air volume requirement within the NBC specifications? If not, then should there be a requirement to provide a certain amount of filtered, fresh air for the cabin occupants? Recommendations: HVAC system shall exchange one cab volume of air in 15 minutes max. Reasons: Provides fresh air for occupants, reduces humidity levels in cab. Benefits: Improved specification	MIL- STD 1472 has been added to paragraph 3.1.4.3. MIL-STD-1472 defines the cab cooling requirements. It is up to the proposer to determine the method by which to meet the standard.

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74		3.2.1.14	86. FTTS MSV Performance Specifications, 3.2.1.14 Lane Changing Recommendations: Add targets for GVW and Stability Control. Make target for GVW equal to the target for GCW. UV target of 45 mph (threshold) and 50 mph (objective), without stability control assistance. MSV target of 40 mph (threshold) and 45 mph (objective), without stability control assistance. With Stability control assistance the operator should be able to initiate the maneuver at an increased speed of: UV target of 54 mph (threshold) and 60 mph (objective), MSV target of 48 mph (threshold) and 54 mph (objective), complete the maneuver and exit at a safe speed. Reasons: Stability control can compensate for inadequate driver judgment or experience and bring the vehicle under control faster. The AVTP 03-160W specifies a more aggressive, shorter course for vehicles without a trailer (GVW) due to the lower effective length of the vehicle. Benefits: Improved performance and safety.	It is up to the proposer to determine whether stability control is needed to meet the requirement. Lane change maneuver adjusts transition length according to vehicle combination length, i.e., truck/trailer combination has longer allowable transition length than truck by itself.

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78		3.5.4.1.1	90. FTTS MSV Performance Specifications, 3.5.4.1.1 Failure Detection and Recovery Question: Is the GPP a GFE or vendor selection? If it is GFE, what is its designation and where are bidders to gain access to information about the equipment and software? Reasons: Clarification of requirement	The requirement has been removed from both the MSV and UV Performance Specifications.

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110		3.1.4.2	122. FTTS UV Performance Specifications, 3.1.4.2 Storage Temperatures Question: Should solar loading/UV requirements be included within the specification? Recommendations: Add a solar/UV requirement as a separate requirement within the document. Reasons: Solar loading may increase interior temperatures and surface temperatures above the 160 F storage temperature, especially in desert environments. Benefits: Improved specification, more accurately reflect storage environment.	The requirement will remain the same.

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118		3.5.4.1.1	130. FTTS UV Performance Specifications, 3.5.4.1.1 Failure Detection and Recovery Question: Is the GPP a GFE or vendor selection? If it is GFE, what is its designation and where are bidders to gain access to information about the equipment and software? Reasons: Clarification of requirement	The requirement has been removed from both the MSV and UV Performance Specifications.

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147		3.9.5.5	159. FTTS MSV Performance Specification: "3.9.5.5 FCS Interface" States: "The MSV CT shall have capability to transload a FCS sustainment module directly to/from the ground (+/- 6 inches and level ground (threshold); +/- 12 inches and +/- 5 degrees (objective)) without disengaging from the prime mover (objective)), flatrack, 463L pallet, itself, another MSV CT, or an MSV to/from a FCS ground system or between FCS ground systems (objective). "Is the FCS sustainment module defined? If so, what is its overall dimensions and maximum weight? Are there any lifting provisions on the FCS sustainment module?"	We do not have the information available because some details are anticipated to be available after award and will be provided.

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190		3.10.4	202. Reference: Attachment 1 (MSV), Page: 55, Paragraph: 3.10.4., Title: General. Reference: Attachment 2 (UV), Page: 52, Paragraph: 3.10.4., Title: General. Statement: The MSV draft performance specification has a commonality requirement that states ?."The components of the FTTS MSV variants shall be 70% common (threshold), and 90% or greater (objective) and will achieve the maximum possible commonality with the FCS platform." To our knowledge, the FCS platform is not yet defined and therefore it will be difficult, if not impossible to achieve commonality with the FCS if it is a moving target. Furthermore, nothing is specified with respect to commonality with the UV even though both the MSV and UV must be addressed within the ACTD proposal. Clarification is needed on both the MVS and UV commonality requirements, which are similarly worded. Question: a) Please confirm that both the 70% and 90% threshold/objective commonality requirements in the MSV specification (paragraph 3.10.4) refers to commonality only within the MSV family of variants? b) Please confirm that both the 70% and 90% threshold/objective commonality requirements in the UV specification (paragraph 3.10.4) refers to commonality only within the UV family of variants? c) Please advise if there will be any basis for evaluation of commonality between the MSV and UV variant families? d) Please advise if the design specifics of the FCS will be made available with the ACTD solicitation, and if not, will the commonality requirement with FCS be dropped from the ACTD evaluation?	Section 3.10.4 has been revised in both the MSV and UV Specifications. A&B) Yes. C) No. D) Commonality with FCS has been deleted.

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202		3.7.2.1.1	214. Reference: Attachment 2 (MSV), Page: 41, Paragraph: 3.7.2.1.1, Title: Additional Seating. Statement: "Seating for at least two additional soldiers shall be provided for use in such missions as command and control and radio relay operations." This is under the headings of "Crew Compartment" and "Cab", which implies that these two additional soldiers would be located inside of the cab. Question: Is it acceptable to locate these two additional soldiers in the cargo area (outside of the cab)?	No.

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207	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.4.5/3.2.4.3 (MSV and UV)	219. Reference: Attachment 1 (MSV), Page: 22, Paragraph: 3.2.4.3, Title: Recovery/Towing. Reference: Attachment 1 (MSV), Page: 22, Paragraph: 3.2.4.5, Title: Towed Load Power & Control. Reference: Attachment 2 (UV), Page: 21-22, Paragraph: 3.2.4.3, Title: Recovery/Towing. Reference: Attachment 2 (UV), Page: 21-22, Paragraph: 3.2.4.5, Title: Towed Load Power & Control. Statement: Normally, power needs to be specified using frequency and voltage indices; active control may have lots of varieties, more specific definition is needed. Question: a) What kind of power is needed for towed load? b) What kind of active control is needed for towed vehicle breaking system and the towed load?	The section title has been updated to Towed Load Braking & Lighting. The specification has been revised to state "Provisions to actuate the towed vehicles brakes and lights shall be provided."

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208	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.4.1.4	220. Reference: Attachment 1 (MSV), Page: 30, Paragraph: 3.5.4.1.4, Title: Software-Enabled Vehicle Control. Reference: Attachment 2 (UV), Page: 29-30 (UV), Paragraph: 3.5.4.1.4, Title: Software-Enabled Vehicle Control. Statement: Closed-loop control may not be the best solution for a control system; it depends on the performance requirement and system constraints and the cost. Question: Please clarify the reason for requiring closed-loop control?	Section 3.5.4.1.4 has been deleted from both the MSV and UV Specifications.

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209	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.4.1.4	221. Reference: Attachment 1 (MSV), Page: 30, Paragraph: 3.5.4.1.4, Title: Software-Enabled Vehicle Control. Reference: Attachment 2 (UV), Page: 29-30, Paragraph: 3.5.4.1.4, Title: Software-Enabled Vehicle Control. Statement: The current specification states that "the vehicle control software shall allow other software components and/or crews to change vehicle software". The concern with this is that there will likely be some vehicle performance software that should not be modified from the original equipment factory setting due to other sensitive system relationships. Question: Please advise if there can be any exceptions or limitations with regard to crew initiated software changes.	Section 3.5.4.1.4 has been deleted from both the MSV and UV Specifications.

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226	Attachment 1 MSV spec/Attachment 2 UV spec	3.9.1	238. Reference: Attachment 1 (MSV), Page: 50, Paragraph: 3.9.1, Title: General. Reference: Attachment 2 (UV), Page: 48, Paragraph: 3.9.1, Title: General. Statement: Trailer performance requirements have increased significantly, and these new requirements have impact on weight. Question: a) What is the trailer threshold weight? b) How much load does the trailer have to carry on the C-130?	A&B) Section 3.4.4 C-130 Air Transport defines maximum C130 deployable weight of 18.1 ST. Section 3.9.8.2 C-130 Transportability states "one MSV-CT shall be transportable aboard an up-armored C-130 aircraft (all types) with a 6 ST load on a 2 ST flatrack (threshold), 9 ST load on a 1 ST flatrack (objective)."

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236	Attachment 1 MSV Spec	3.2.1.11.2/3.2.1.11.3	248. Reference: Attachment 1 (MSV), Page: 18, Paragraph: 3.2.1.11.2, Title: Run-Flat Capability. Reference: Attachment 1 (MSV), Page: 18, Paragraph: 3.2.1.11.3, Title: Limp Home Capability. Statement: Paragraph 3.2.1.11.2 and 3.2.1.11.3 both state requirements of vehicle performance without speed reduction over the OMS/MP terrain with failures in the tire air pressure and full loss of wheel conditions. Both of these type of failures will drastically impact the ride quality of the vehicle and significantly reduce the life of various components impacted by keeping the speeds high. Some relaxation in ride quality requirements and an understanding of the durability impact in other related systems is to be expected and considered when assessing this requirement. Another alternative is to add more axles than required such that failures will not effect the vehicle as much. Counterpoint to this strategy is it will drive higher weights in the vehicle system design. Question: Is decreased ride quality and reduced durability accepted for these modes of operations?	The specification has been updated. The threshold requirement is with speed reduction and the objective is without speed reduction.

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238	Attachment 1 MSV spec/Attachment 2 UV spec	2.1	250. Reference: Attachment 1 (MSV), Page: 4, Paragraph: 2.1, Title: Government Documents. Reference: Attachment 2 (UV), Page: 4, Paragraph: 2.1, Title: Government Documents. Statement: Paragraph 2.1 (Government Documents) refers to three versions of MIL-STD-209; MIL-STD-209E (HEMTT), MIL-STD-209G (PLS), and MIL-STD-209 current version. The current version is MIL-STD-209J, which requires non-removable lift/tie down provisions. There is also MIL-STD-209K which should be in affect by FTTS ACTD contract award, which adds additional requirements for the item such as supplementary tie downs to facilitate air transport. Question: a) Is the material developer required to meet the current version of MIL-STD-209K that would be in force at time of contract award? b) If the material developer were not required to meet the latest version of the standard, would they be able to choose between MIL-STD-209E/G?	A&B. The revision level and date of each specification will be added into section 2 of the UV and MSV specifications.

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241	Attachment 1 MSV spec/Attachment 2 UV spec	3.1.3.3	253. Reference: Attachment 1 (MSV), Page: 13, Paragraph: 3.1.3.3, Title: Length. Reference: Attachment 2 (UV), Page: 13, Paragraph: 3.1.3.3, Title: Length. Statement: The overall length of the MSV/MSV CT (truck/trailer) combination cannot exceed 60 feet during highway transport. The required payload of both vehicles is a platform or container that is 20 feet long, thereby consuming a significant portion of the overall length available. Given the additional requirements to carry a crew of 4 vs. 2 or 3, a significantly increased communication/computer package (C4ISR), and more personal equipment, it would be reasonable to assume that the overall length of the MSV would have to increase over the length of the M1120 potentially to the length of the M1075 PLS. The requirements for the MSV CT or trailer require additional equipment that could increase its overall length beyond that of the M1076 PLS Trailer. The overall length of the PLS truck/trailer combination with drawbar retracted is barely less than 60 feet with the drawbar of the trailer collapsed. Question: a) Could relief of the 60 foot overall length for the MSV/MSV CT requirement be provided if it can be demonstrated that the length is not achievable unless other operation requirements are reduced or eliminated? B) If the length requirement cannot change, would it be acceptable to extend the drawbar of the MSV CT when tight turning conditions are required to prevent contact between payload and vehicle? c) Would the procuring activity permit some equipment to be stored outside the vehicle if it were necessary to reduce the vehicle length provided adequate tie down devices were present?	A) No, but reference paragraph C.1.2.1.1 in the Scope of Work. B) Yes, if it does not interfere with other requirements and the safe operation of the platform. C) Yes, if it does not interfere with other requirements and the safe operation of the platform

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250	Attachment 1 MSV Spec	3.2.1.11.3	262. Reference: Attachment 1 (MSV), Page: 18, Paragraph: 3.2.1.11.3, Title: Limp Home Capability. Statement: This capability implies that one or two wheels/wheel ends could be raised or chained up to allow the vehicle to continue on its mission. What is unclear is whether or not preparations can be made to allow the vehicle to be operated. For example, it may be unsafe to operate the vehicle with a missing or damaged wheel/tire on a front steering axle. It is also possible for that flat or damaged tire to separate and damage hoses in its proximity potentially compromising a portion of the air brake system. Question: a) Is it permissible to relocate a wheel/tire from another position on the vehicle to a front steering axle to maintain operational control? b) Is it permissible for the damaged wheel end position to be raised or chained up to minimize further damage if the activity can be performed with on-board Basic Issues Items (BII) or Additional Authorized item List (AAL) components? c) If it is not possible to change a damaged tire/wheel due to environmental or hostile conditions, could the vehicle speed be reduced in this mode to permit safe operation?	A & B) No C) Yes, section 3.2.1.11.3 Limp Home Capability has been revised to state "The loss of the function of one wheel (threshold), (two wheels-Objective) shall not impede the FTTS MSV from driving 30 miles (threshold) (60 miles – Objective) with speed reduction (threshold), without speed reduction (objective) over the OMS/MP terrain. This capability shall be for emergency operation only in case of wheel bearing failure, damaged wheel, inability to change wheel/tire, etc."

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252	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.17 (MSV)/3.2.1.15 (UV)	264. Reference: Attachment 1 (MSV), Page: 20, Paragraph: 3.2.1.17, Title: Emissions. Reference: Attachment 2 (UV), Page: 19, Paragraph: 3.2.1.15, Title: Emissions. Statement: This paragraph requires the vehicle to meet EPA exhaust emission standards applicable to on-road vehicles at the time of production. This emission certification is performed with a commercially available fuel or DF-2. The military standard fuel is JP-8, which could have potentially high sulfur content. One of the approaches to meet the stricter emission requirement is to utilize exhaust after treatment such as a catalytic converter that has been used in the automotive industry for years. A high sulfur content fuel, like JP-8, will plug the openings in the catalyst or foul the catalyst resulting in a premature need to replace the catalytic converter or muffler if the brick are internal to the muffler. Question: a) Given the potential for high sulfur fuels could the engine be certified to either previous emission requirements, certified to off-road emission requirements, or be exempted as a combat vehicle? b) If on-road emissions are required for the engine, should there be a bypass for the catalyst, provisions to easily replace the catalyst, or can the catalyst be removed for use with JP-8 fuels? c) If there is a shortened life to the catalyst due to the fuels used, and the catalyst is located in the muffler, could the materials selected for the muffler permit a shorter corrosion life due to the need to replace the catalyst?	a) No, not for the demonstration. Sulfur content and emission standards are two separate issues. The Government is currently applying for a National Security Exemption (NSE) permitting the use of JP-8 despite 2007 on-road diesel fuel standards which limit a maximum sulfur content of 15 parts/million (ppm). The specification will not be modified. 2007 standards do not apply to the FTTS ACTD which will produce vehicles in 2005. The Government recognizes the strict emissions standards and will continue to analyze tactical vehicle emission compliance on a case-by-case basis. B & C) The Government will not dictate design.

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263	Attachment 1 MSV spec/Attachment 2 UV spec	2.1	275. Reference: Attachment 1 (MSV), Page: 4, Paragraph: 2.1, Title: Government Documents. Reference: Attachment 2 (UV), Page: 4, Paragraph: 2.1, Title: Government Documents. Statement: In the Department of Defense standards section, MIL-STD-461, MIL-STD-461B, and MIL-STD-461C are listed. MIL-STD-461E is the most current version. Usually these documents supersede the older version and only one version is listed. Question: Please clarify if there are specific sections from each of the older MIL-STD-461 documents you wish contractors to follow, and if not, why these older versions of MIL-STD-209 were listed.	The revision level and date of each specification will be added into section 2 of the UV and MSV specifications. The material developer is required to identify applicable specification revision for all specifications referenced in the FTTS ACTD Solicitation package.

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265	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.1.5	277. Reference: Attachment 1 (MSV), Page: 26, Paragraph: 3.5.1.5, Title: Sustainment Data & Reporting. Reference: Attachment 2 (UV), Page: 26, Paragraph: 3.5.1.5, Title: Sustainment Data & Reporting. Statement: The specification requires "report automatically to the battle command node." The specification does not include what information shall be reported or how often. No technical information on the COP, CLOE, or Log systems was provided. Question: a) What data and at what frequency should be reported automatically? b) What other systems or organizations will require information and how shall it be sent (message specification)? c) Will information on the COP, CLOE, and Log environments be provided including what information should be sent to them and in what format?	Paragraph: 3.5.1.5 has been revised to say, "FTTS systems must be capable of automatically monitoring, collecting, storing and reporting real-time cargo (payload) and maintenance data from the platform/system level sensors (Non-real time sensitive data will remain stored on board for downloading as required). See Scope of Work paragraphs C.4.4.2.2 - C.4.4.2.2.1.5 for types of data required. Additional details will be provided after award.

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274	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.2.10	286. Reference: Attachment 1 (MSV), Page: 38, Paragraph: 3.6.2.10, Title: Prognostics & Diagnostics. Reference: Attachment 2 (UV), Page: 38, Paragraph: 3.6.2.10, Title: Prognostics & Diagnostics. Statement: This requirement states: "The embedded prognostics capability will supplement? precursor-based prognostics with prognostics based on component life and stress-histories." Precursor is one that announces or foreshadows what is coming. It is not clear how this is different from prognostics based on component life and stress-histories. Question: Please clarify the term "precursor", and better define what are the precursor diagnostics based on?	Paragraph 3.6.2.10 in the MSV & UV Specifications has been update. The reference to precursor-based diagnostics has been deleted.

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278	Attachment 2 UV Spec	3.5.1.7	290. Reference: Attachment 2 (UV), Page: 26, Paragraph: 3.5.1.7, Title: Crewman's Wireless Remote Interface System. Statement: If CWRIS is to be developed, the CWRIS is to contain the Army's training management system, the Scenario Generation System, and Standard Army SAF for the information is needed about the applications that run on it. Question: When will the requirements such as memory, processor, and operating system for these applications be provided?	This requirement will be deleted from the specification.

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279	Attachment 11 WBS	page 6 lines 330-334	291. Reference: Attachment 11 (WBS), Page: 6, Paragraph: Lines 330-334, Title: Integrated Logistics System Reference: Attachment 11 (WBS), Page: 6, Paragraph: Lines 343-344, Title: Reliability and Maintainability Statement: Lines 330-334 and 343-344 reference Tasks 102, 205, 301, 303, 501, 101, and 104. There does not appear to be a definition of these tasks in the draft solicitation. Question: When will these tasks be defined?	The WBS has been revised to remove those tasks.

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289		3.4	301. Reference: Attachment 1 (MSV), Page: 23, Paragraph: 3.4, Title: Transportability. Reference: Attachment 2 (UV), Page: 22, Paragraph: 3.4, Title: Transportability. Statement: The paragraph implies that the MSV and companion trailer should be able to be transported at Gross Combination Weight (GCW) on a C-130, C-5 and C-17 aircraft. Based on the cargo compartment dimensions and the permissible payload, the combination could only be transported on a C-5 or C-17 aircraft in a coupled condition. The payload capability of the C-130 cannot accept a fully laden MSV even if the payload could be configured to fit within the required projected height limits. The transport of a truck/trailer combination on the larger air transports may be restricted due to required placement to achieve the required center of balance beneath the wing base. Question: a) Will the paragraph requirement be revised to eliminate the requirement of a fully laden MSV and companion trailer on a C-130 aircraft? b) Will the requirement to transport a fully loaded combination on the C-5/C-17 requirement to be revised to reflect the "as permissible within the published guidelines contained in MIL-STD-1366/MIL-STD-1791?"	A & B) Yes. Paragraphs 3.4, 3.4.5 and 3.4.6 have been updated.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
296	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.3.2.1	308. Reference: Attachment 1 (MSV), Page: 29, Paragraph: 3.5.3.2.1, Title: Meals Ready to Eat (MRE) Outlet. Reference: Attachment 2 (UV), Page: 29, Paragraph: 3.5.3.2.1, Title: Meals Ready to Eat (MRE) Outlet. Statement: This paragraph specifies that three 12/24 VDC power outlets are required in the cab to power items such as the MRE/Water heater. It states that a power switch be provided for one/all the outlets. Question: a) Will the procuring activity define whether the outlets are to be 12 or 24 VDC, the maximum capacity in amps, their location, what the interface connector needs to be, and where they need to be located? b) Is a single power switch sufficient to control all three outlets and do the outlets need to be able to be energized in the vehicle ignition is off? c) Is there a required location and mounting interface required for the MRE/Water heater within the crew compartment?	Paragraph 3.5.3.2.1 has been revised. The new title is "DC Electrical Power", and the paragraph Reads "A minimum of 2 convenience outlets (one 12v outlet and one 24v outlet, 15 amp including on/off switch) shall be provided as a power source for portable electrical equipment in the cab compartment. A grounding circuit shall be autonomous and separate from the chassis." A) The location of the outlets should be easily accessible to the crew. The interface connectors shall be determined by the proposer. Reference MIL-STD-1275, MIL-HDBK-455 and FMCSR 393.27 through 393.33 for guidance. B) It is up to the proposer to determine the number of switches and the outlets do need to be energized while the vehicle ignition is off. C) Yes, the specification has been updated to reflect the requirement.

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297	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.3.2.2	309. Reference: Attachment 1 (MSV), Page: 29, Paragraph: 3.5.3.2.2, Title: 110 V AC Electrical Power Location. Reference: Attachment 2 (UV), Page: 29, Paragraph: 3.5.3.2.2, Title: 110 V AC Electrical Power Location. Statement: This paragraph requires a minimum of one 110V AC power outlet to be provided in the compartment. It is assumed that since it could be exposed to the environment that a GFI circuit should protect it. Question: a) Is this outlet only applicable to the cargo distribution (LHS) and potentially the wrecker variant or must it be supplied on all variants? b) What is the rated capacity in amps for the outlet (s)? c) Does this outlet have to be accessible from ground level or only the cargo area? d) How is the cargo area of a LHS distribution variant defined?	Paragraph 3.5.3.2.2, AC Clean Electrical Power has been revised to state "Electrical power source outlet for 110v AC, 15 amp shall be provided in the cab compartment with minimum interference to the occupants with outlets being easily accessible (Threshold). A 220V AC, 20 amp outlet and a 110v AC, 20 amp outlet shall be provided outside the cab with outlets being easily accessible from ground level (Objective). All outlets shall be ground fault interrupt." A) It is applicable to all variants. B & C & D) See revised paragraph.

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304	Attachment 1 MSV Spec	3.8.2.1.3	316. Reference: Attachment 1 (MSV), Page: 46, Paragraph: 3.8.2.1.3, Title: Semi-Autonomous Transport Path. Statement: The intent of this requirement is to utilize preprogrammed paths to simplify the effort required to load/unload payload modules to/from the vehicle. The system needs to be sufficiently smart to prevent damage to the material handling equipment or the payload while transiting to and on these paths. Question: a) Is there any special qualification that will be required since explosive or flammable liquids could be handled in this mode? b) Do additional safety devices such as proximity sensors need to be incorporated should a person stray into the operational zone? c) Does the system need to adjust for shifting payloads or fluid payloads that may cause the end effectors to stray from the programmed path?	Section 3.8 Material Handling Equipment (MHE) has been updated. All references to autonomous operation are provided for Objective Performance (OP) modeling only, however if the contractor chooses, they may demonstrate these capabilities in the ACTD demonstration period A) At this time in the program, no special qualification other than those normally applied to hazardous load qualifications. During the M & S phase, as the concept designs mature, the Government will work with the Army test community and the FTTS ACTD contractors to determine the safety assessment testing that will be needed to release the vehicles to the SBCT for the MUA. B) Semi autonomous are required to be safe for both material and personnel. Specific design solutions are up to the contractor. C) the system must provide safe operations for the programmed path for any payload.

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306	Attachment 1 MSV Spec	3.8.2.2.2/3.8.2.2.1	<p>318. Reference: Attachment 1 (MSV), Page: 48, Paragraph: 3.8.2.2.2, Title: Self Load/Off Load. Statement: The MSV needs to be able to load and unload material and body's to/from the ground or trailer just as the current system. One of the payloads defined in 3.8.2.2.1 is for containers or shelters to be transported on the MSV/MSV trailer. The current approach to handling these containers is to utilize a lift adapter from the Container Handling Unit (CHU) Kit to turn the item into a flatrack like item. To secure the lift adapter it is necessary for a crewmember to exit the vehicle to engage the twist lock fittings at the base of the lift adapter. The current trailer restraint system requires an operator to release locking devices on the trailer prior to unloading of material. Question: a) Can a crewmember exit the vehicle to release payload/body prior to, or after, a loading/unloading operation? B) Can a crewmember be outside the vehicle to assist with guiding operations while loading/unloading? c) Can a crewmember exit the vehicle to secure items such as the Front Lift Adapter to an ISO container/shelter prior to loading? d) Can detail be provided on the required vehicle/aircraft loading/unloading scenarios?</p>	<p>A &amp; B &amp; C) Yes, the paragraph has been revised D) The vehicle will need to act as a K-Loader and be exactly level with the C-130 ramp/deck height when pulling off, in a controlled motion, flatracks, containers, CROPS and pallets. This is an objective performance which currently will require significant coordination and testing with the Air Force to become an approved method of unloading a C-130. Currently the Air Force requires a 6" clearance for all operations (manipulator include) under the tail wing of a C-130.</p>