

Completed Responses to FTTS ACTD Questions

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
1	Attachment 2 UV spec	3.3	1. Paragraph 3.3 (Survivability) of the Utility Vehicle Performance Specification states "See Classified Annex D". When will the Classified Annex D be available?	There will not be an opportunity to comment on the classified annex at this time. All survivability requirements, with the exception of ballistic and signature management, will be incorporated into the body of Attachments 1 & 2. The remaining classified content will not be available until after award.

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2	Annex G: Survivability	NBC requirements	2. Any requirements for NBC protection are probably part of the classified Annex G Survivability. We wonder why the NBC portion of survivability is classified.	Original arrangement was to state all survivability requirements (unclassified & classified) in one specification section for ease of traceability. Revised specification will separate them. NBC requirements are unclassified and will be in the main body of Attachments 1 & 2.

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3	Attachment 1 MSV spec and Attachment 2 UV spec	3.10.3.4	3. Paragraph 3.10.3.4 calls for the condensation from the environmental control system to be captured and recycled. How will the recycled water be used? Does the crew have water filtrations and purification equipment?	The water should be potable. The recycled water will be used for the soldiers on board. Reference 3.10.3, Potable Water.

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9	Attachment 1 MSV Spec/Attachment 2 UV spec	3.2.1.18.4/3.2.1.16.4	21. Reference: Attachment 1 (MSV), Page: 20, Paragraph: 3.2.1.18.4, Title: Depleted Battery Engine Start Reference: Attachment 2 (UV), Page: 20, Paragraph: 3.2.1.18.4, Title: Depleted Battery Engine Start Statement: The paragraph title contains the term 'Depleted Battery', yet the narrative indicates a requirement for a system that 'precludes loss of battery power' If battery power loss is precluded, there cannot be a 'depleted battery'. It is not clear precisely what the Government is requiring.	Section 3.2.1.18.4 of the MSV and 3.2.1.16.4 UV Specifications have been updated to state "In the event of the use of supplemental electronic devices (ie radios), the vehicle shall be equipped with a device, which prevents the batteries or other storage devices from being depleted past the appropriate charge level sufficient to start the vehicle."

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13	Attachment 1	3.2.4.9	25. There appears to be dichotomies among the various specifications. In some cases, the specification is so general as to require further explanation. Yet in others, the specification is so detailed as to limit the design flexibility of the contractor and appears to presuppose a design solution. Case in point, the requirement that the pintle assembly mounting surface be forward of the rear of the vehicle by not more than 4 inches! XXXXXXXX recommends that the specification be reviewed to remove any requirements which presuppose a solution and /or restricts a contractor's design flexibility to meet a user requirement.	Section 3.2.4.9 of the MSV Attachment has been revised to remove the 4 inch requirement.

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20	SOW	c.1.1.	32. Section 3, Draft Scope of Work: C.1.1.1 FTTS Demonstrators. The program indicates that there will be a down-select to possibly a single contractor. This reduces the ability of the user community to evaluate alternative technology approaches and would make any alternative approach during an SDD phase a higher risk without the benefit of user input. Instead, the program should be restructured to maximize the number of alternative demonstrator designs by reducing the number of demonstrators built by any one contractor. Again the current ACTD structure appears designed to proceed directly from an ACTD to an SDD program. Since this is not the case, and the Army's strategy for supporting the UA is not yet determined, the ACTD should be maximizing the technology alternatives that it can evaluate instead of minimizing evaluated alternatives.	The ACTD has been revised to fit the TWV Modernization strategy.

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23	SOW	c.1.2.1	35. Section 3, Draft Scope of Work: C.1.2.1 Design Approach. The ACTD design approach does not appear to be flexible enough to insure that technologies and component designs developed during this program can be used for block upgrades if that is the Army's ultimate decision on how to meet UA requirements. This ACTD potentially marches the Army down a path of a "new start" before the Army has determined that such a program is affordable. Since the ACTD does not require backward compatibility, it will potentially develop designs that are a dead end if they are based on unique prototype platform and which are incompatible with existing platforms. The structure of the ACTD would be fine if it were based on an Army decision to proceed with a "new start". However, pending such a decision, the structure of the program should be as flexible as possible to support whatever Army decision is made on meeting FTTS requirements.	The ACTD has been revised to fit the TWV Modernization strategy.

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25	SOW	c.1.2.2.1	37. Section 3, Draft Scope of Work: C.1.2.2.1 Initial Contractor M&S. The modeling and simulation approach does not take into account the fact that there may be existing government test data on a particular technology which may obviate the need for M&S. Again, the HE HMMVV is an example of a technology which has proceeded beyond the M&S stage. Active suspension is another example of technology which may have actual government test data. Recommend that the ACTD be modified to require M&S only on technology for which there is no actual test data.	M&S is required for continuous technology assessments. Existing test data is useful for model validation and improved model robustness for vehicle system analyses. There is nothing that precludes the use of existing test data.

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58	Attachment 2 UV spec	3.6.2.5.2	70. Attachment 2, FTTS UV Performance Specification: 3.6.2.5.2 Scheduled Services. Replacement times for engine, transmission and T-case are identified under scheduled services. Do these times hold for unscheduled services as well?	The times hold for unscheduled maintenance. There is no such thing as unscheduled services.

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61	Attachment 1 MSV Spec	3.1.4.1	73. FTTS MSV Performance Specifications, 3.1.4.1 Operating Temperatures Recommendation: Revise statement: "The vehicle must start and attain operating temperature in extreme cold in no more than 30 minutes." TO: "The vehicle must start and attain operating temperature at -25F start (threshold) and -50F (objective) in 30 minutes (threshold). Benefits: Better defined performance specifications.	We concur. Section 3.1.4.1 of the MSV specification has been updated

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73	Attachment 1 MSV Spec	3.2.1.11.2	85.FTTS MSV Performance Specifications, 3.2.1.11.2 Run-Flat Capability Recommendations: Add - CTIS with Tire Pressure Monitoring that provides Prognostics and Diagnostic feedback. Benefits: Improve maintenance concept.	The minimum requirements are set forth in the specification. The offeror will propose how to achieve the requirements.

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75	Attachment 1 MSV Spec	3.2.1.17	87. FTTS MSV Performance Specifications, 3.2.1.17 Emissions Question: Will JP8 (NATO F34/35 and JP8+100) meet the 2007 EPA requirements for low sulfur diesel fuels required to meet 2007 emissions?	No.

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76	Attachment 1 MSV Spec	3.2.1.17	88. FTTS MSV Performance Specifications, 3.2.1.17 Emissions Question: Is the intent to meet Federal EPA emissions regulations at the time of each vehicle manufactured or at the time of production contract award? Recommendation: Clarify per below. Reasons: Clarify, insure that by stating at the time of production the Government means emissions calendar year of production and not date of production contract. This makes a big difference in the design of cooling modules and after treatment systems. Federal 49 states emissions apply. It is not economically feasible to manufacture engines in 2008 that meet 2005 stds. In order to maintain intent of producing vehicles to the year of manufacture a cost impact to each year of manufacture is necessary to keep pace with emissions technology. It is understood that upcoming idle time requirements will not apply to military vehicles. Also, it is assumed that JP8 fuel will have to meet ultra low sulphur requirements. Benefits: Insures that we use current calendar year parts, not building 2008 vehicle with 2005 engines and hardware. This statement should apply to the whole vehicle. This approach will reduce overall logistics requirements.	The Federal EPA standards must be met at the time of vehicle manufacturing.

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83	Attachment 1 MSV Spec	3.5.4.1.9	95. FTTS MSV Performance Specifications, 3.5.4.1.9.d Reporting Question: Is limit of 10 Hz report rate maximum inferring that status can be sent every 100 mS if there are new exceptions? Reasons: Clarification of requirement	It is recognized that an objective C4I definition is not available. That is why the requirement is an Objective and will not be demonstrated in this ACTD (Modeling & Simulation only). Reference the MSV Specification 3.5.2 requirements for the minimum demonstrator C4I functionality. As additional Objective C4I information becomes available it will be provided.

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84	Attachment 1 MSV Spec	3.5.13	96. FTTS MSV Performance Specifications, 3.5.13 Backup Alarm Question: Is the backup alarm to be disabled at all times while in blackout mode? If so, it would be possible to interlock without a separate backup alarm enable switch. Are there cases other than blackout mode where backup alarm should be manually disabled? Recommendations: Add: "Backup Alarm shall not sound while in Blackout mode." Reasons: Vehicle operation mode can automatically be used to disable/enable things such as backup alarm if the mode can be sensed by some other means available to the vetronics. Benefits: Fewer controls requiring manual operator intervention reduces chance of operator error and, in this case, improves warfighters' safety.	The backup alarm should be disabled at all times while in the blackout mode. Additionally, the requirement to have a crew control to disable the backup alarm remains. This requirement has been updated in section 3.5.13 in the MSV Specification.

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96	Attachment 1 MSV Spec	3.7.2.2	108. FTTS MSV Performance Specifications, 3.7.2.2 Crush Protection Recommendation: Add - Perform SAE J2422 (Cab Roof Strength Evaluation - Quasi-static Loading Heavy Trucks) in addition to FMVSS 208 Rollover requirements Reason: Spec calls out meeting crush protection of FMVSS 208, which states in a rollover incident that the occupant must stay completely inside the vehicle. FMVSS does not include any reduction constraint in the survival space requirement. Benefits: Increase occupant protection	The specifications will not be changed. SAE J2422 refers to a cab roof strength evaluation of quasi-static (and dynamic) loading. Although this defines a procedure for determining the load applied to the cab both dynamic and inverted. The test procedure does not define survival space and the load applied will determine yield points, etc. FMVSS.208 defines the injury criteria (survival space indirectly) allowed for a rollover test where the test conditions are defined in S8.

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98	Attachment 1 MSV Spec	3.7.2.3	110. FTTS MSV Performance Specifications, 3.7.2.3 Seating Recommendation: Add - Seat/cab structure meet FMVSS 210 Benefits: Increase occupant protection	3.7.2.4 Crew Restraint System defines the seat belt assembly and references FMVSS210 requirements for seating, crash protection, and seat belt assemblies.

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104	Attachment 1 MSV Spec	3.10.2.3	116. FTTS MSV Performance Specifications, 3.10.2.3 Corrosion Resistance Question: Are inspection/touch-up intervals allowed (i.e. @5 years inspect corrosion coatings and touch-up or recoat as required)?	No, because the government needs to limit the maintenance procedures. Touch-ups shall be limited for repairs due to operational damage or maintenance procedures degrading corrosion protection.

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111	Attachment 2 UV spec	3.2.1.5.4	123. FTTS UV Performance Specifications, 3.2.1.5.4 Brake Configuration Recommendation: Add - In case of a single point failure, half of the system shall be able to build and maintain pressure as a limp home mode capability. Reason: Match other limp home capabilities.	This is stated in FMVSS 571.121 and referenced in the specification. This will be an objective requirement and has been updated in section 3.2.1.5.4 of the UV specification.

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112	Attachment 2 UV spec	3.2.1.5.5	124. FTTS UV Performance Specifications, 3.2.1.5.5 Antilock Braking System (ABS) Recommendation: Add a new section for vehicle system stability control requirements. The section should also address the stability control requirements of the combined vehicle and trailer system. Reason: Vehicle technological requirements of this spec have the basic elements to enhance the stability of the vehicle with out a great increase in overall cost. Benefit: Enhanced vehicle performance and safety for lane change maneuver.	There will be no addition made to the section. The Contractor may propose the stability control.

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113	Attachment 2 UV spec	3.2.1.9.2	125. FTTS UV Performance Specifications, 3.2.1.9.2 Run-Flat Capability Recommendations: Add - CTIS with Tire Pressure Monitoring that provides Prognostics and Diagnostic feedback. Benefits: Improve maintenance concept.	The minimum requirements are set forth in the specification. The offeror will propose how to achieve the requirements.

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114	Attachment 2 UV spec	3.2.1.12	126. FTTS UV Performance Specifications, 3.2.1.12 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 somewhat 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.	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. The section 3.2.1.12 of the UV specification has been updated.

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115	Attachment 2 UV spec	3.2.1.15	<p>127. FTTS UV Performance Specifications, 3.2.1.15 Emissions Question: Is the intent to meet Federal EPA emissions regulations at the time of each vehicle manufactured or at the time of production contract award? Recommendation: Clarify per below. Reasons: Clarify, insure that by stating at the time of production the Government means emissions calendar year of production and not date of production contract. This makes a big difference in the design of cooling modules and after treatment systems. Federal 49 states emissions apply. It is not economically feasible to manufacture engines in 2008 that meet 2005 stds. In order to maintain intent of producing vehicles to the year of manufacture a cost impact to each year of manufacture is necessary to keep pace with emissions technology. It is understood that upcoming idle time requirements will not apply to military vehicles. Also, it is assumed that JP8 fuel will have to meet ultra low sulphur requirements. Benefits: Insures that we use current calendar year parts, not building 2008 vehicle with 2005 engines and hardware. This statement should apply to the whole vehicle. This approach will reduce overall logistics requirements.</p>	The Federal EPA standards must be met at the time of vehicle manufacturing.

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116	Attachment 2 UV spec	3.2.1.18	<p>128. FTTS UV Performance Specifications, 3.2.1.18 Power Generation Question: Are DC, AC and other loads to be run simultaneously? If not, what is the maximum expected power to be provided to these loads at any one time? Reasons: Impacts the size of the engine, power storage and alternator selection Benefits: Cost minimization</p>	Yes, the DC, AC and other loads are to be run simultaneously.

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117	Attachment 2 UV spec	3.2.2.1	129. FTTS UV Performance Specifications, 3.2.2.1 Range Recommendation: Revise fuel economy from 600 miles (threshold)/30 gallons and 900 miles (objective)/15 gallons TO: 600 miles (threshold)/60 gallons, to 900 miles (objective)/60 gallons. Reason: Without detailed duty cycle, it is impossible to agree to current requirements. Recent advancements in technology have produced results of 30-50% increase in fuel economy.	Section 3.2.2.1 of the UV specification has been updated.

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120	Attachment 2 UV spec	3.5.4.1.9	132. FTTS UV Performance Specifications, 3.5.4.1.9 Reporting Question: Where are bidders to look to understand the capabilities and interface of the "publish service"? Reasons: Clarification of requirement Benefits: Better proposal	Publish Service has been removed from the UV Specification.

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121	Attachment 2 UV spec	3.5.4.1.9	133. FTTS UV Performance Specifications, 3.5.4.1.9 Reporting Question: Is the new backend C4ISR system and communications channel to be created for the ACTD or will an existing C4ISR system and communications channel be used? If an existing backend system is to be used, what system is it? Reasons: Clarification of requirement Benefits: Better proposal	The requirement is an Objective and will not be demonstrated in this ACTD (Modeling & Simulation only). Reference the specification Threshold requirements for the minimum demonstrator C4I functionality. As additional Objective C4I information becomes available it will be provided.

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122	Attachment 2 UV spec	3.5.4.1.9	134. FTTS UV Performance Specifications, 3.5.4.1.9.a Reporting Question: What is the reporting rate during non-battle and battle conditions? What is the bit rate and over what type of communications channel? Reasons: Amount of data varies widely in a 1 second transmission according to network access times and data rate.	The requirement is an Objective and will not be demonstrated in this ACTD (Modeling & Simulation only). Reference the specification Threshold requirements for the minimum demonstrator C4I functionality. As additional Objective C4I information becomes available it will be provided.

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123	Attachment 2 UV spec	3.5.4.1.9	135. FTTS UV Performance Specifications, 3.5.4.1.9.d Reporting Question: Is limit of 10 Hz report rate maximum inferring that status can be sent every 100 mS if there are new exceptions? Reasons: Clarification of requirement	The requirement is an Objective and will not be demonstrated in this ACTD (Modeling & Simulation only). Reference the UV Specification 3.5.2 requirements for the minimum demonstrator C4I functionality. As additional Objective C4I information becomes available it will be provided.

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124	Attachment 2 UV spec	3.5.13	136. FTTS UV Performance Specifications, 3.5.13 Backup Alarm Question: Is the backup alarm to be disabled at all times while in blackout mode? If so, it would be possible to interlock without a separate backup alarm enable switch. Are there cases other than blackout mode where backup alarm should be manually disabled? Recommendations: Add: "Backup Alarm shall not sound while in Blackout mode." Reasons: Vehicle operation mode can automatically be used to disable/enable things such as backup alarm if the mode can be sensed by some other means available to the vetronics. Benefits: Fewer controls requiring manual operator intervention reduces chance of operator error and, in this case, improves warfighters' safety.	The backup alarm should be disabled at all times while in the blackout mode. Additionally, the requirement to have a crew control to disable the backup alarm remains. This requirement has been updated in section 3.5.13 in the UV Specification.

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125	Attachment 2 UV spec	3.6.2.3/3.6.2.5	137. FTTS UV Performance Specifications, 3.6.2.3 & 3.6.2.5 Maintenance Ratio - Maintenance Man-Hours per Operating-Hour & Preventive Maintenance Checks & Services Recommendations: Vehicle shall require the use of extended life coolant. Reason: Requires no periodic addition of supplemental coolant additives or periodic testing for concentrations of supplemental fluid additives. Benefit: Fewer maintenance hours per operational hours. Reduced quantity and variety of consumables required.	The Government will not provide this level of detail. Each proposer must determine how the performance requirements will be met.

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126	Attachment 2 UV spec	3.6.2.3	138. FTTS UV Performance Specifications, 3.6.2.3 Maintenance Ratio - Maintenance Man-Hours per Operating-Hour Question: Is NEFF an acronym for Non-Essential Function Failure? Recommendations: Add an acronym list to the document or reference where bidders can find this list. Reasons: Clarification of requirements Benefits: Better proposal	Your assumption is correct: NEFF is Non-Essential Function Failure. There will be an acronym list added to the end of the document.

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133	Attachment 2 UV spec	3.7.2.1.1/3.7.2.4	145.FTTS UV Performance Specifications, 3.7.2.1.1 Additional Seating Question: Does additional seating need to meet requirements of 3.7.2.4 Crew Restraint System for seat-integrated restraints? Recommendation: Additional seating must meet 3.7.2.4 Crew Restraint System Reason: Increase comfort and elimination of cab-mounted seatbelts, which take up space when not in use and snags on soldiers TA50. Benefits: Soldier's safety.	It is already stated in section 3.7.2.4 that all seats must meet the requirement.

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143	Attachment 1 MSV spec/Attachment 2 UV spec	3.1.1.2	155. MSV and UV Performance Specifications, dated 25 Nov 03: What MTO&E differences are there in the planning factor weights per soldier (para 3.1.1.2): MSV 356 lbs (FCS developmental weights) and 343 lbs (Brigade Combat Team developmental weights)?	The soldier is 343 lbs. The correction has been made in the specification.

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144	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.2.1	156. MSV and UV Performance Specifications, dated 25 Nov 03: (UV) Paragraph 3.2.1.2.1 (Forward Speed). The FTTS UV at GVW shall be capable of a minimum speed of 75 mph..." Is this a threshold or objective maximum capability?	The UV speed of 75 mph is currently a threshold capability.

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145	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.8.4	157. MSV and UV Performance Specifications, dated 25 Nov 03 Paragraph 3.2.1.8.4 (5% Grade). Is the intent of requirement to set the thermal management criteria/sizing for the propulsion system? Should this not be time (2 hours) or range limited (100 miles) since the continuous requirement at the positive longitudinal slope will exceed the geographical limits of this planet Earth within the condition limits stated?	The 5% grade has been removed from the specification.

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146	Attachment 1 MSV Spec	3.2.1.15	158. FTTS MSV Performance Specification: "3.2.1.15 Power Take-Off (PTO) Openings." States: "PTO openings shall be provided". Is more than one PTO required?	Each variant is required to have at least one PTO. Any additional PTO's shall be determined by the proposer.

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148	Attachment 1 MSV Spec	3.2.1.18.2/3.2.1.18.5	160. FTTS MSV Performance Specification: Paragraph 3.2.1.18.2 indicates a 110 VAC power source delivering at least 2.5 kW of continuous output is required. Paragraph 3.2.1.18.5 indicates that at least 33 kW (T) and 80 kW (O) of AC for internal and external operational power demands is required. What are the power characteristics of the AC power in paragraph 3.2.1.18.5 i.e. what is the voltage, phase, and frequency?	Section 3.2.1.18.2 has been removed from the spec. The voltage, phase and frequency will be up to the proposer to determine through analyses of the loads.

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152	Attachment 1 MSV spec/Attachment 2 UV spec	3.1	<p>164. Performance Spec: Mission</p> <table border="0"> <tr> <td>M SV:</td> <td>UV:</td> </tr> <tr> <td>T/O</td> <td>T/O</td> </tr> <tr> <td>Hard Surface .1-.3 rms</td> <td>53%/10% 30/10%</td> </tr> <tr> <td>Gravel .3-1.0 rms</td> <td>8%/20% 30/10%</td> </tr> <tr> <td>Unimproved Roads</td> <td>39/70 40/60</td> </tr> <tr> <td>1.0-4.8 rms</td> <td></td> </tr> </table> <p>Comment: The threshold objective for the MSV is higher than the UV. Is the intent that the MSV should have more off-road capability than the UV?</p>	M SV:	UV:	T/O	T/O	Hard Surface .1-.3 rms	53%/10% 30/10%	Gravel .3-1.0 rms	8%/20% 30/10%	Unimproved Roads	39/70 40/60	1.0-4.8 rms		Yes, the objective profile for MSV cross country mobility is 10% higher than the UV Objective cross country mobility.
M SV:	UV:															
T/O	T/O															
Hard Surface .1-.3 rms	53%/10% 30/10%															
Gravel .3-1.0 rms	8%/20% 30/10%															
Unimproved Roads	39/70 40/60															
1.0-4.8 rms																

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153	Attachment 1 MSV spec/Attachment 2 UV spec	3.1.3	<p>165. Performance Spec: Dimension</p> <p>MSV: 96w 142h 60'L with trailer UV: 96' 102' 40'</p> <p>Comment: MSV height needs to be limited to 102 inches for C-130 transportability.</p>	Agreed. The MSV shall have a maximum on highway height of 142 inches while transporting an empty container. The maximum height aboard the C-130 is 102 inches.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
160	Attachment 1 MSV Spec	1.3	<p>172. FTTS MSV Performance Specification: 1.3 Vehicle Variants. All potential cargo seems to be based on 20-ft equivalent units (TEU). This seems to ignore that much cargo distributed to using units are not packaged in such large sizes, and may result in potential wasted cargo capacity.</p>	All planning is based upon the isocontainer length. The Army is working on configured loads to optimize the 20 ft cargo area.

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161	Attachment 1 MSV Spec	3.1.1.2	<p>173. FTTS MSV Performance Specification: 3.1.1.2 Gross Vehicle Weight (GVW) Is the tongue weight at all times or only applicable when towing trailers?</p>	When towing it is GCW- when not towing it is GVW. Towed load should only apply when towing (GCW).

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
162	Attachment 1 MSV Spec	3.1.1.2	174. FTTS MSV Performance Specification: 3.1.1.2 Gross Vehicle Weight (GVW) The companion trailer is likely to have a GVW close to the C-130 weight limit. Designing for 10 % of this (3620lb) for a tongue a load will have performance impacts to the rest of the system. We recommend that the vehicle tongue load capability be limited to towing legacy rigid tongue trailers such as M1095, or heaviest known tongue load. (1924lb vs 3620lb).	The threshold has been changed to reflect the vehicle tongue load capability to be limited to towing the heaviest legacy rigid tongue trailer or the companion trailer (whichever is greater).

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163	Attachment 1 MSV Spec	3.1.2	175. FTTS MSV Performance Specification: 3.1.2 Payload: 13 Tons of carrying capacity seems to necessitate an 8X8 configuration, with Heavy power requirements. As a tradeoff for increased fuel economy, transportability, will alternatives be considered that will allow for a lower payload (11 ton) to allow for a 6X6 configuration?	No because of the operational capabilities (ammunition load is 11 tons) . Note: 2 tons of the 13 tons is allocated to the flatrack.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
164	Attachment 1 MSV Spec	3.2.1.5.4	176. FTTS MSV Performance Specification: 3.2.1.5.4 Brake Configuration: "Releasing brake in the event of emergency lock-up". This will probably require an additional independent system added onto the brake system, and may violate FMVSS by allowing the driver an unsafe override.	FMVSS 393.41.c defines the conditions under which the brakes can be released. The words "in the event of emergency lock up" have been removed from the specification.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
165	Attachment 1 MSV Spec	3.2.1.10.4	177. FTTS MSV Performance Specification: 3.2.1.10.4 5% Grade: Is it acceptable to meet this requirement with a "Combat only mode" (exception to emissions standards)?	This requirement has been updated in section 3.2.1.10.4 in the MSV Specification.

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166	Attachment 1 MSV Spec	3.2.1.11.4.5	178. FTTS MSV Performance Specification: 3.2.1.11.4.5 Maintenance of Tire Pressure. We believe that the intent should be to assure that the actual pressure is no more than 3 psi below and not above the selected pressure (i.e. to address leakage.)	Paragraph 3.2.1.11.4.5 reads exactly the same as previous specifications released by the government. It is the contractor's responsibility to design a CTIS that will meet the requirements. The paragraph 3.2.1.11.4.5 reads "no more than 3 psi variation exists between selected pressure and actual pressure."

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
168	Attachment 1 MSV Spec	3.2.3.2	180. FTTS MSV Performance Specification: 3.2.3.2 Trench Crossing: Can this requirement be met by carrying lightweight on board bridging equipment, that could be easily deployed and retrieved as needed for trench crossings?	The Government does not dictate how the performance requirement is to be met. That is up to the proposer to determine.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
169	Attachment 1 MSV Spec	3.4.1	181. FTTS MSV Performance Specification: 3.4.1 Weight Limitations: We assume the calculation for the vehicle to be: Curb + C130 payload (4 ST /6 ST). (The gross mass has the 10% pintle allowance on it and this would not be there for a C130 transport.)	The assumption is correct.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
170	Attachment 1 MSV Spec	3.4.2	182. FTTS MSV Performance Specification: 3.4.2 Size Limitation: This seems like a rather specific envelope. We suggest there be a performance requirement associated with this requirement, instead of a specific envelope, which may or may not allow for a specific performance requirement, when coupled with suspension layout and geometry.	This requirement has been removed; however, size limitations are driven by transportability requirements (ie air, rail and sea).

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
171	Attachment 1 MSV Spec	3.5.1.3	183. FTTS MSV Performance Specification: 3.5.1.3 Common Relevant Operating Picture (CROP). Use of the acronym "CROP" conflicts with its traditional use to indicate Container Roll in Out Platform.	True. CROP is substituted with Common Operating Picture (COP).

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172	Attachment 1 MSV Spec	3.5.1.7	184. FTTS MSV Performance Specification: 3.5.1.7 Objective Performance (OP) C4I Hardware package Will we get access to Pro/E solid models? If so, When can we expect them?	The sizes and weight are listed in the spec. The C4I requirements are defined for modeling and simulation purposes only. Contractors will not be required to develop and deliver the C4I hardware.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
173	Attachment 1 MSV Spec	3.7.2.7	185. FTTS MSV Performance Specification: 3.7.2.7 Vehicle Cab Interior: The minimum thickness of two inches for interior foam seems like a rather specific envelope. Should there be a performance requirement associated with this requirement, instead of a specific envelope, which may or may not allow for a specific performance requirement?	The third and fourth sentences of section 3.7.2.7 shall be omitted from the spec and refer 3.7.1 (Human Factors). The proposer shall determine how to meet the interior noise requirements.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
175	Attachment 1 MSV Spec	3.8.2.1.5	187. FTTS MSV Performance Specification: 3.8.2.1.5 Payload Capacity and Reach: Suggest a better-defined area in which the "Manipulator" must be capable of picking up cargo. Suggest: Manipulator must be able to reach/load/unload from XX ft to each side of the vehicle. XX ft to the rear of the vehicle. XX ft in front of the vehicle, for instance.	Loads to be handled by the ILHS include flatracks, CROP, standard wood pallets, 463L platforms, and JPADS. The spec shall be updated to state: The manipulator shall have a payload capacity of $\geq 3,100$ pounds (threshold), $\geq 6,100$ pounds (objective) at a ≥ 17 ft radius (threshold), ≥ 23 ft radius (objective). Section 3.8 Material Handling Equipment (MHE) shall be updated. Reach shall be defined as the distance from the centerline of the ILHS to the rated load center of the boom end.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
177	Attachment 2 UV spec	3.1.2/1.2	189. FTTS UV Performance Specification: 3.1.2 Payload: Is the payload requirement applicable to all variants of the "FTTS UV Family" or is this payload applicable to the "Basis FTTS UV Chassis" as described in PARA 1.2? What vehicle ops are allowed in the 30 minutes?	Yes, it is applicable for all variants. As for the 30 minutes, the question is unclear.

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178	Attachment 2 UV spec	3.1.4.1/3.1.4.4	190. FTTS UV Performance Specification: 3.1.4.4 Cab Cooling: Is this requirement applicable during the highest temperature environment as defined in PARA 3.1.4.1? If not at what temp is required without a kit, if kit is used? Are personnel temp tolerances to be defined by MIL-STD-1472?	Yes. However, the operating temperature range in 3.1.4.1 will be changed to -25 to 120 degrees F without a kit. -25 degrees F and below is with a kit. Yes the personal temperature tolerances shall be defined by MIL-STD-1472. The UV specification will be updated.

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179	Attachment 2 UV spec	3.2	191. FTTS UV Performance Specification: 3.2 Performance Characteristics: How and where will payload be applied in non-cargo variants?	The payload is the variant module and its componentry.

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180	Attachment 2 UV spec	3.2.1.5.1	192. FTTS UV Performance Specification: 3.2.1.5.1 Service Brakes: Is this requirement applicable while the vehicle engine is running or not running?	The service brakes shall meet requirements stated in paragraph 3.2.1.5.1 as well as the FMVSS while the vehicle engine is running.

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181	Attachment 2 UV spec	3.2.1.5.3	193. FTTS UV Performance Specification: 3.2.1.5.3 Emergency brakes: Is the stopping distance/brake performance requirement of this paragraph applicable at the point when the audible & visual warnings occur? Is it applicable by the operator or automatically/uncontrolled by the operator?	Audible and visual requirements have been deleted from the section. The UV spec has been updated.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
182	Attachment 2 UV spec	3.2.1.5.4	194. FTTS UV Performance Specification: 3.2.1.5.4 Brake Configuration: "Releasing brake in the event of emergency lock-up". This will probably require an additional independent system added onto the brake system, and may violate FMVSS by allowing the driver an unsafe override.	FMVSS 393.41.c defines the conditions under which the brakes can be released. The words "in the event of emergency lock up" have been removed from the specification.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
184	Attachment 2 UV spec	3.2.1.16.4	196. FTTS UV Performance Specification: 3.2.1.16.4 Depleted Battery Engine Start: Please clarify.	The UV specification has been updated to read as "In the event of the use of supplemental electronic devices (ie radios), the vehicle shall be equipped with a device, which prevents the batteries or other storage devices from being depleted past the appropriate charge level sufficient to start the vehicle."

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
185	Attachment 2 UV spec	3.2.1.16	197. FTTS UV Performance Specification: 3.2.1.16 Power Generation: Only achievable with Hybrid Electric Vehicle (HEV) if this is what is wanted, should just specify HEV.	It is up to the proposer to determine how to meet the requirement.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
186	Attachment 2 UV spec	3.4.11.3	198. FTTS UV Performance Specification: 3.4.11.3 MV-22 Transport: Transport by MV-22. Given aircraft payload limitations, this may be achievable only at CW.	Paragraph 3.4.11.3 has been revised in the UV specification.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
187	Attachment 2 UV spec	3.5.1.8	199. FTTS UV Performance Specification: 3.5.1.8 Objective Performance (OP): C4I hardware package - Is it envisioned that the entire package would install on a particular vehicle? What FTTS UV variant is likely to have the entire system installed?	Objective Performance C4I requirements will be addressed in the ACTD Modeling and Simulation efforts called for in the Scope of Work and are common with all UV variants. The minimum C4I requirements are called out in paragraph C.3.5.2.

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188	Attachment 2 UV spec	3.6.1.2	200. FTTS UV Performance Specification: 3.6.1.2 Mean Time Between System Aborts-Mobility: MTBSA- M seems excessive when considered in terms of miles of operation; example at a vehicle average of 20 miles per hour, 6450 hours (MTBSA-M) is 129,000 miles. The current highest reliability requirement for a U.S. Army wheeled vehicle is 11,000 mean miles between hardware mission failure (MMBHMf).	Current platforms testing did not include idle time nor has there ever been a requirement to supply external power all of which will be tracked in hours.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
189	Attachment 1 MSV spec/Attachment 2 UV spec		201. We like the extent to which the paragraph numbers match the UV and MSV. Recommend further reconciling MSV and UV requirement documents so that differences consist of primarily parameters or reserved paragraphs that apply to only one variant. For instance section 3.2.1.8 is reserved in the MSV but is Grade and Slope operations in the UV Spec.	The Government will continue to maximize paragraph commonality between the UV and MSV specifications.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
191	Attachment 1 MSV spec/Attachment 2 UV spec	4.4 table 1	203. Reference: Attachment 1 (MSV), Page: 61, Paragraph: 4.4., Table I, Title: Verification Matrix. Reference: Attachment 2 (UV), Page: 59, Paragraph: 4.4., Table I, Title: Verification Matrix. Statement: The Table I - VERIFICATION MATRIX in each of the MSV and UV Performance Specifications have check boxes to indicate what verification method(s) or which class(s)/event(s) will be used for each requirement. It is understood that each Table I may be modified at the discretion of the government however, in the draft, no boxes have been checked. A prospective bidder must have some baseline, as to which boxes will be checked, particularly those performed by the manufacture, to estimate their part of verification effort for the bid. Question: Will the final solicitation have the Table I Verification Matrix boxes checked, or is the bidder expected to make assumptions as to the details of the verification effort expected of them in this regard?	Yes. Verification matrix has been updated.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
192	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.2.4	204. Reference: Attachment 1 (MSV), Page: 36, Paragraph: 3.6.2.4, Title: Time to Repair. Reference: Attachment 2 (UV), Page: 36, Paragraph: 3.6.2.4, Title: Time to Repair. Statement: The third line is an incomplete sentence. The sentence in lines 10-12 appears to say the same thing as the sentence in lines 4-5. Question: Is the incomplete sentence in line 3 meant to be a phrase indicating a subparagraph header? Is there redundancy with the sentence in lines 10-12 when compared with the sentence in lines 4-5? Please clarify.	The section has been updated in both the MSV and UV specifications. Lines 10-12 specify with or without armor.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
197	Attachment 1 MSV spec/Attachment 2 UV spec	2.2	209. Reference: Attachment 1 (MSV), Page: 7, Paragraph: 2.2, Title: Other Government documents, drawings, and publications. Reference: Attachment 2 (UV), Page: 7, Paragraph: 2.2, Title: Other Government documents, drawings, and publications. Statement: The title of the Federal Motor Carrier Safety Regulations (FMCSR) document 393.70 is incorrect. The last two words "Exhaust Systems" should be deleted. Question: The correct title for FMCSR document 393.70 should be "Coupling Devices and Towing Methods, Except for Driveaway-Towaway Operations".	This recommendation has been updated in the MSV and UV specifications. The specification now calls out 393.70 "Coupling Devices and Towing Methods ..." 393.83 is "Exhaust Systems."

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
200	Attachment 1 MSV Spec	3.8.2.1.13	212. Reference: Attachment 1 (MSV), Page: 47, Paragraph: 3.8.2.1.13, Title: Safety. Statement: "In the event of a failure in the manipulator system, a back up means by which to stow the manipulator is required." There are some modes of failure (such as a structural boom failure) that may make it difficult to provide a backup means of stowing the manipulator. Question: What modes of failure require a backup means of stowing the manipulator?	Any failure mode that has not caused catastrophic damage to the manipulator, which prohibits it from being folded back into its stowed position.

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201	Attachment 1 MSV spec/Attachment 2 UV spec	3.4.1(MSV)/3.9.9.2.1 (UV)	213. Reference: Attachment 1 (MSV), Page: 53 (MSV), Paragraph: 3.9.9.2.1, Title: Payload Data. Reference: Attachment 1 (MSV), Page: 23, Paragraph: 3.4.1, Title: Weight Limitations. Reference: Attachment 2 (UV), Page: 50 (UV), Paragraph: 3.9.9.2.1, Title: Payload Data. Statement: "FTTS MSV CT shall incorporate sensors that automatically collect and report (threshold) and transmit (objective) payload data (e.g., weight, center of gravity, load-sensing data, etc.)" The vertical center of gravity of the payload will be much more difficult to obtain than the center of gravity in the horizontal directions which can be done using load cells. Question: Is the vertical center of gravity of the payload required?	Yes, the vertical center of gravity of the payload is required.

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203	Attachment 10 Survivability Analysis/Attachment 14		215. Reference: Attachment 10, Page: N/A, Paragraph: Table, Ref 4, Title: Survivability Analysis. Reference: Attachment 14, Page: N/A, Paragraph: 1., Title: CAD geometry? Statement: "Survivability Analysis" allows CAD formats of ProE 2001, .stl, and .obj. CATIA V5R8+ is allowed in all of the other tasks, but not in this one. Question: Is CATIA V5R8+ an acceptable CAD format for Survivability Analysis?	In its native form, we could not use CATIA. If it can produce a mesh in stereo lithography format .stl or in the .obj common format, then you could use it, but what would have to be delivered would be some commonly recognizable mesh such as those mentioned above or even a Patran neutral file. Otherwise, no... not just as a CATIA native format.

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220	Attachment 1 MSV spec/Attachment 2 UV spec	2.3/3.8.2.1.13	232. Reference: Attachment 1 (MSV), Page: 11, Paragraph: 2.3, Title: Non-Government Publications. Reference: Attachment 2 (UV), Page: 11, Paragraph: 2.3, Title: Non-Government Publications. Statement: The standard referenced in Section 3.8.2.1.13, "EN 12999 Crane-Loader cranes" is not listed in section 2.3. Question: Should the EN 12999 standard referred to in Section 3.8.2.1.13 be listed in section 2.3? If so, then the following entry should be made after "Tire and Rim Association (TRA) Incorporated": "European Committee for Standardization EN 12999 Crane-Loader cranes"	We agree. The references shall be added to Section 2.3.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
221	Attachment 1 MSV spec/Attachment 2 UV spec	2.3/ 3.8.2.1.13	233. Reference: Attachment 1 (MSV), Page: 9, Paragraph: 2.3, Title: Non-Government Publications. Reference: Attachment 2 (UV), Page: 9, Paragraph: 2.3, Title: Non-Government Publications. Statement: American Society of Mechanical Engineers (ASME) ASME B30.5 Mobile and Locomotive Cranes Question: Should "ASME B 30.22 Articulating Boom Cranes", a standard referenced in Section 3.8.2.1.13, replace "ASME B30.5 Mobile and Locomotive Cranes" in section 2.3?	We agree. The references shall be added.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
222	Attachment 1 MSV Spec	3.8.2.1.5	<p>234. Reference: Attachment 1 (MSV), Page: 47, Paragraph: 3.8.2.1.5, Title: Payload Capacity and Reach. Statement: The manipulator shall have a payload capacity of >= 6,000 lbs (threshold), 10,000 lbs (objective) at a >= 17ft radius (threshold), 23 ft radius (objective). If there were eight pallets on a CROP, each individual pallet would weigh 24,000/8=3000 lbs max. Or if there were 32 pallets (to interface with FCS) on a CROP (as shown on ARDEC's smart distribution video), each individual pallet would weigh 24,000/32=750 lbs. These seem to justify lower payload capacity. If payload capacity were reduced to 2500-3000lbs, a stabilization system which could weigh as much as 1000 lbs (including two vertical cylinders, two horizontal cylinders, valves, vertical boom boxes, and horizontal boom boxes) would potentially not be needed. Question: Can a lower payload capacity be considered?</p>	<p>The spec shall be updated to state: "The manipulator shall have a payload capacity of >= 3,100 pounds (threshold), >= 6,100 pounds (objective) at a >= 17ft radius (threshold), >= 23 ft radius (objective)."</p>

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
223	Attachment 1 MSV Spec	3.8.2.1.8	<p>235. Reference: Attachment 1 (MSV), Page: 47, Paragraph: 3.8.2.1.8, Title: Minimum Step Size. Statement: The manipulator will have a positioning resolution of < .125 inches. Question: Is the .125 inches measured at the very tips of the fork tine/end effectors or at some other location?</p>	<p>Section 3.8.2.1.8 has been deleted from the MSV Specification.</p>

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
225	Attachment 1 MSV Spec	3.8.3	237. Reference: Attachment 1 (MSV), Page: 49, Paragraph: 3.8.3, Title: Stabilization System. Statement: The payload, reach, and dynamic loading (loads?) requirements of the ILHS require a stabilization system? If operational performance parameters were detailed in this paragraph, it is conceivable that they could be achieved without a stabilization system or device. In other words, the stability achieved would be inherent to the basic design approach. Question: Would the Government consider modifying the language to include performance criteria and make the stabilization system an "if required" rather than a "mandatory" item?	Section 3.8.3 shall be revised to reflect "if required" in lieu of required.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
228	Attachment 2 UV Spec	3.8.2.1/3.8.5	240. Reference: Attachment 2 (UV), Page: 46, Paragraph: 3.8.2.1, Title: Lift Radius. Reference: Attachment 2 (UV), Page: 47, Paragraph: 3.8.5, Title: MHE Installation & Stowage. Statement: This paragraph states a requirement for lifting 175 lb? to a minimum of 6 feet? It should also be noted that the crane requires two people to install on the vehicle (para 3.8.5). Question: Since the two people can lift 2x80 =160 lbs, which is almost to the payload requirement, why is a crane necessary?	Section 3.8 Material Handling Equipment (MHE) shall be updated. The load capacity carried by an individual is defined in MIL-STD-1472 as 41 lbs for close combat operations, not 80 lbs. The vehicle shall be capable of loading/unloading a 500 lb (threshold) and 1,000 lb (objective) pallet from ground level to the cargo deck. The crane shall be installed without tools, in <= 10 minutes with no individual crane section weighing more than ~41 lbs.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
239	Attachment 1 MSV spec/Attachment 2 UV spec	3.1.3.1 (UV and MSV)/3.8.2.2 (MSV)	<p>251. Reference: Attachment 1 (MSV), Page: 13, Paragraph: 3.1.3.1, Title: Width. Reference: Attachment 2 (UV), Page: 13, Paragraph: 3.1.3.1, Title: Width.</p> <p>Statement: The vehicle width is limited to 96 inches per the requirements of paragraph 3.1.3.1. The current method of handling ISO containers/shelters is with the Container Handling Unit or CHU kit. To be able to guide the container and align it with the vehicle on side slopes, guide plates are necessary at the rear of the vehicle. These guide plates would have to be positioned outboard of the 96 inch wide container to perform this function.</p> <p>Question: a) Could these guides be excluded from the overall vehicle width limit of 96 inches? B) If the guides could be removed after the container is loaded and secured for transport and the vehicle width reduced, would this meet the requirements of paragraph 3.1.3.1? c) If removable guides were permitted to facilitate loading/unloading of containers, would the time required to install/remove them be excluded from the LHS cycle time required by paragraph 3.8.2.2?</p>	<p>A&B. The width requirement is 96 inches during on-highway operation and transportation by air, rail, sea and land. While loading/unloading containers and flatracks from the vehicle, it is permissible to exceed 96 inches. Stowage of the guides should not require additional tools or equipment. C) No. The times shall remain the same. (refer to section 3.8.2.2 MSV spec).</p>

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
240	Attachment 1 MSV spec/Attachment 2 UV spec	3.1.3.2	<p>252. Reference: Attachment 1 (MSV), Page: 13, Paragraph: 3.1.3.2, Title: Height. Reference: Attachment 2 (UV), Page: 13, Paragraph: 3.1.3.2, Title: Height. Statement: The operation requirement is for the MSV while carrying an 8' tall (Type 1C) ISO container to not exceed the 4 meters in overall height requirement for OCONUS bridges and tunnels. It is also a requirement to be able to reduce the vehicles height to 102" to comply with height limits for unrestricted transport on a C-130 Aircraft. Paragraph 3.4 implies that the MSV with or without the MSV CT are required to be air transportable with payload as long as the combined weight does not exceed 18.1 short tons. Question: a) Can any portion of the material handling equipment required to load flatracks or ISO containers be repositioned if it reduces the effective area for payload to achieve the required transport height? B) Would it be permissible to start at a height greater than 102 inches before entering the C-130 Aircraft to transition over the ramp hinge to prevent hinge overload provided that the height is reduced prior to transport? c) Assuming a dismountable cargo body (flatrack/M3 CROP) is carried on the MSV, can the A-frame of the flatrack/CROP device be folded to reduce overall height if adequate restraint is provided between the flatrack and the truck/trailer?</p>	A) Yes as long as there is roll-on/roll-off capability. B) Yes. C) Yes.

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255	Attachment 1 MSV Spec	3.2.4.1	<p>267. Reference: Attachment 1 (MSV), Page: 21-22, Paragraph: 3.2.4.1, Title: Like Vehicle Towing.</p> <p>Statement: The desire is to be able to flat tow a fully loaded MSV truck/MSV truck/trailer combination with another MSV vehicle. This will be performed with the standard Army heavy-duty tow bar. The current army fleet utilizes the standard Army medium-duty tow bar to perform the same function on improved roads. Question:</p> <p>a) Can it be assumed that the towed vehicle(s) will have at least functional brakes that can be actuated by the towing vehicle through the use of intervehicle hoses? B) Can it be assumed that if a truck/trailer combination were being towed, the combination speed would be reduced to ensure safe operation while turning or while operating on side slopes? c) Has off-road towing of a laden truck/trailer combination been tested previously and were functional limitations noted?</p>	<p>A) Yes, the following will be added to 3.2.4.1" P rovisions to actuate the towed vehicle's brakes and lights shall be provided." B) Yes. The MSV Specification has been updated. C) Yes, towed vehicle speeds off road are limited based upon the soil conditions and RMS profile.</p>

ID	Document	Paragraph/Section	Question/comment	Answer/Update
256	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.4.3	<p>268. Reference: Attachment 1 (MSV), Page: 22, Paragraph: 3.2.4.3, Title: Recovery/Towing. Reference: Attachment 2 (UV), Page: 21, Paragraph: 3.2.4.3, Title: Recovery/Towing. Statement: The tow eyes of the FTTS MSV are required to be able to withstand any forces induced by retrieval or towing. These tow eyes are also typically used as vehicle tie down provisions governed by MIL-STD-209. There is a conflict between the current/future version of MIL-STD-209 and this paragraph if the same provisions are used for both functions. MIL-STD-209J requires that if shackles are used for tie down provisions they must be a specific type of anchor shackle and they must be non-removable (welded). This prevents the shackle from being removed to allow the installation of a lift and tow adapter or the standard Army heavy-duty tow bar. If the provisions were designed with the required openings the clevice of the tow bar could move back and forth in the oversized hole due to braking and acceleration. Question: a) Can the tow eyes be used for both vehicle tie down, as well as, flat towing or lift and tow operations? B) If the large openings are provided in the tow eye to meet MIL-STD-209 requirements, could inserts be installed in the tow eye opening to minimize the impact loads on the drawbar clevice or the tow eye? c) If the provisions can be used for both towing & tie down, will the reference to towing shackles be removed from the paragraph or will these shackles need to be provided as part of the vehicles Basic Issue Items (BII)?</p>	<p>A & B Yes. The design approach is up to the proposer. C) If the proposer can provide both the towing and the tie down capability with one solution, then paragraph 3.2.4.7 for shackles is met.</p>

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
257	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.11.4 (MSV)/3.2.1.9.3 (UV)	<p>269. Reference: Attachment 1 (MSV), Page: 18, Paragraph: 3.2.1.11.4, Title: Central Tire Inflation System (CTIS) Reference: Attachment 2 (UV), Page: 18, Paragraph: 3.2.1.9.3, Title: Central Tire Inflation System (CTIS) Statement: For suspension systems that equalize loading between the axles of a front or rear tandem, it is at all times appropriate that the tire pressures are the same on those two axles. With such a suspension it would never be advantageous for the operator to change tire pressures by axle and would usually be detrimental to mobility, tire life, tractive effort and fuel economy.</p> <p>Question: Will the Government consider either deleting the "by axle" requirement or revising the second bullet to read as follows: ? by axle or group of axles with equal loading</p>	The Government agrees and the spec shall be updated to state "The group of axles with equal loading..."

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258	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.11.4.4 (MSV)/3.2.1.9.4.3(UV)	270. Reference: Attachment 1 (MSV), Page: 18-19, Paragraph: 3.2.1.11.4.4, Title: Speed/Pressure Control Warning. Reference: Attachment 2 (UV), Page: 18, Paragraph: 3.2.1.9.4.3, Title: Speed/Pressure Control Warning. Statement: It is recommended that the time interval for allowed over speeding is removed in favor of a requirement that the times be programmed as acceptable to tire life, tire heat and vehicle dynamics and control. The reasons for this request are as follows. A) While it is only possible to exceed the speed limits of the CC terrain by ~15 mph, it is possible for the operator to exceed the MSS and EMER speed limits by 40 or 50 mph. This is very damaging to tire life and vehicle control and thus it is important that overspending be recognized very quickly (ie, less than 60 seconds) when the CTIS is in MSS and EMER terrain settings. B) Cross-Country terrain setting is the most commonly used off-road setting and is also used for rough secondary roads with large speed fluctuations. In this terrain mode, the operator will commonly benefit from over speed times slightly greater than the specified 60 seconds. Depending on tire selection and axle loading, the system can often accommodate these longer times. C) On the current military platforms, over speed times are biased by CTIS terrain selection and have proven in test programs to be advantageous over non-biased over speed times. Question: Will the Government consider revising the over speed protection requirement to one that is more performance based rather than so design specific?	Both sections in the MSV and UV have been updated to performance based requirements.

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259	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.5.6	271. Reference: Attachment 1 (MSV), Page: 15, Paragraph: 3.2.1.5.6, Title: Brake Wear Indicator. Reference: Attachment 2 (UV), Page: 15, Paragraph: 3.2.1.5.6, Title: Brake Wear Indicator. Statement: There are at least two types of systems that could be considered as brake wear indicators: a) "Warning" system that doesn't know anything about brake wear until some threshold is reached. B) "Monitoring" system that knows remaining life at all times and displays it at the operator's station. Question: Is it acceptable that the brake wear indicator system be separate of the method of quickly determining remaining life? For example, one possibility is that a warning system is designed to trigger when pad life is down to 10% while a separate technique of visually inspecting wear indicators on the brake is used to determine condition if more than 10% remains.	The diagnostics and prognostics design is up to the proposer to define.

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261	Attachment 2 UV Spec	3.1	273. Reference: Attachment 2 (UV), Page: 12, Paragraph: 3.1, Title: Mission Profile. Statement: The mix of on- and off-road operation given in the text and the table do not agree. Question: Please clarify which is correct.	The UV Specification has been updated.

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262			<p>274. Reference: N/A, Page: N/A, Paragraph: N/A Statement: a) The draft solicitation did not include any information on potential proposal submission requirements, such as identification of: 1) Books/volumes and their respective quantities both in paper and electronic copies. 2) Physical paper size restrictions or font size/type limitations, if applicable. 3) Electronic submission format (i.e. Microsoft Office 97?2003, Microsoft Project 98?2003, Adobe Acrobat 3.0?6.0, HTML 2.0?4.0). 4) Animated media (i.e. compressed multimedia with recommended codecs list in the following formats: a) AVI/MPEG 1,2 or 4, b) QuickTime 3.0?6.4, c) Windows Media Player 6.4?9.0, d) Macromedia Flash 3.0?6.0, etc.). 5) Acceptable electronic media (i.e. CD-R 650/700 MB, DVD (+R, -R, etc.)). 6) Book/disk identification information requirements (i.e. signatures, solicitation date/number ID, etc.). 7) Required proposal volumes and their specific requirements. 8) Proposal evaluation factors, scoring and their applicability to FAR standards. B) Microsoft has identified on its "Office Family Products Support Lifecycle" web page that it will discontinue assisted support for Office 97 on January 16, 2004 and has already discontinued support for Project 98 as of December 31, 2002. Question: a) Will the Government supply information relative to instructions, conditions and notices to the offerors and evaluation factors for award? b) Will the Government follow the Microsoft assisted support lifecycle in regards to upgrading its versions of Microsoft Office/Project beyond the 97/98 versions?</p>	The proposal submission instructions and evaluation criteria will be released in the final solicitation.

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266	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.1.6	<p>278. Reference: Attachment 1 (MSV), Page: 26, Paragraph: 3.5.1.6, Title: External Interfaces. Reference: Attachment 2 (UV), Page: 26, Paragraph: 3.5.1.6, Title: External Interfaces. Statement: The computing hardware is required to be compatible with and interoperate with FBCB2 and MTS, however, no technical information on FBCB2 or MTS was provided. Question: Will information be provided on how to interface with these systems (hardware and software)?</p>	The paragraph will be updated to remove the compatibility to FBCB2 and MTS. However, the proposer must provide a method for mounting the units within the vehicle cab and the power required to operate the system. The component interface dimensions, weight, mounting requirements and power provisions will be posted in the ACE Environment after contract award.

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268	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.3.1/2.1	280. Reference: Attachment 1 (MSV), Page: 28, Paragraph: 3.5.3.1, Title: System Grounding. Reference: Attachment 2 (UV), Page: 28, Paragraph: 3.5.3.1, Title: System Grounding. Statement: The E3 specification is not listed in section 2.1. Question: What is the full title of the E3 specification and where can it be obtained?	The E3 reference in the paragraph shall be removed from the MSV and UV Specifications.

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269	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.4.1.2/3.1.1	281. Reference: Attachment 1 (MSV), Page: 29, Paragraph: 3.5.4.1.2, Title: Initialization. Reference: Attachment 2 (UV), Page: 29, Paragraph: 3.5.4.1.2, Title: Initialization. Statement: The reference to section 3.1.1 relates to weight definitions, which appears to have nothing to do with vehicle state or readiness for electronics initialization. Question: Please clarify how paragraph 3.1.1 relates to readiness for electronics initialization and/or provide a revised paragraph reference.	The reference to 3.1.1 has been removed from the MSV and the UV specifications.

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270	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.4.1.9	282. Reference: Attachment 1 (MSV), Page: 30, Paragraph: 3.5.4.1.9, Title: Reporting. Reference: Attachment 2 (UV), Page: 30, Paragraph: 3.5.4.1.9, Title: Reporting. Statement: The systems are required to interface with LWFCs and MW systems, however, no technical information on the LWFCs and MW systems was provided. Question: Please provide hardware and software interface information.	Section 3.5.4.1.9 Reporting (Objective) is provided for information only, since this is an undeveloped FCS system. The requirement will remain in the specification as a place holder for new information/ details as they become available. Section 3.5.1.7 defines, in the table, the size, weight, thermal and power requirements for the C4I hardware that must be incorporated into the MSV an UV objective performance modeling effort. As FCS C4I information becomes available it will be provided on the FTTS ACE. Minimum C4I requirements for the MSV & UV demonstrators are located in Attachment #3.

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271	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.11	283. Reference: Attachment 1 (MSV), Page: 33, Paragraph: 3.5.11, Title: Data Storage. Reference: Attachment 2 (UV), Page: 33, Paragraph: 3.5.11, Title: Data Storage. Statement: The specification states what information is to be stored and how long it shall be kept. It does not state how often the data shall be recorded. Question: At what rate/frequency should the data be stored?	The government will not dictate the frequency at which the data will be stored. The contractor's capabilities to store data will be assessed during the ACTD.

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277	Attachment 2 UV spec	3.5.1	289. Reference: Attachment 2 (UV), Page: 25, Paragraph: 3.5.1, Title: Communications Equipment (Objective). Statement: The systems must conform to the JTA. Question: Will information on the JTA such as hardware and messaging interface requirements be provided prior to or with the ACTD Solicitation?	Currently technical information on JTA can be found on: http://jta.disa.mil . Note the minimum demonstrator requirements are defined in section 3.5.2 of both the MSV and UV Specifications

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280	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.4.2	292. Reference: Attachment 1 (MSV), Page: 40, Paragraph: 3.6.4.2, Title: Service Life. Reference: Attachment 2 (UV), Page: 40, Paragraph: 3.6.4.2, Title: Service Life. Statement: The percentage values are missing from the specification. Question: Please provide the percentage values for the amount of time spent in each mission profile and idle time.	The service life percentage values have been updated in the MSV and UV Specifications.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
281	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.4.1.8	293. Reference: Attachment 1 (MSV), Page: 30, Paragraph: 3.5.4.1.8, Title: Status Acquisition & Control. Reference: Attachment 2 (UV), Page: 30, Paragraph: 3.5.4.1.8, Title: Status Acquisition & Control. Statement: The vehicle status updating rate may be slower for some vehicle variables based on SAE J1939-standard, therefore the 4 Hz requirement may be too fast. For example, the updating rate for engine temperature and diagnosis is 1 Hz on J1939 CAN bus. Question: Can the status acquisition and control reporting/monitoring rate be slower than 4 Hz?	Requirement is 4Hz nominal and has been changed to Objective to allow the use of existing and commercial sensors operating at a lower frequency.

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282	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.4.1.8	294. Reference: Attachment 1 (MSV), Page: 30, Paragraph: 3.5.4.1.8, Title: Status Acquisition & Control. Reference: Attachment 2 (UV), Page: 30, Paragraph: 3.5.4.1.8, Title: Status Acquisition & Control. Statement: The vehicle control signal updating rate needs to be at least two times faster than the system/subsystem dynamics and the change of the control command may need to be faster than 1 time per 0.1 second for a fast system (e.g. engine, motor or transmission). For example, on a multiplexed vehicle, the fastest control signal updates every 10 ms (0.01sec). Question: a) Can the control command be changed faster than 1 time per 0.1 second? b) Will the Government consider changing the requirement from 1 time per 0.1 sec to 1 time per 0.01 sec?	Requirement has been revised to "... no more frequently than 1 time per 0.01 sec."

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283	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.1.1/3.6.1.2/3.6.1.3	295. Reference: Attachment 1 (MSV), Page: 34, Paragraph: 3.6.1.1, Title: Mean Time Between System Aborts. Reference: Attachment 2 (UV), Page: 34, Paragraph: 3.6.1.1, Title: Mean Time Between System Aborts. Reference: Attachment 1 (MSV), Page: 34, Paragraph: 3.6.1.2, Title: Mean Time Between System Aborts-Mobility. Reference: Attachment 2 (UV), Page: 34, Paragraph: 3.6.1.2, Title: Mean Time Between System Aborts-Mobility. Reference: Attachment 1 (MSV), Page: 34, Paragraph: 3.6.1.3, Title: Mean Time Between Essential Function Failures. Reference: Attachment 2 (UV), Page: 34, Paragraph: 3.6.1.3, Title: Mean Time Between Essential Function Failures. Statement: The required reliabilities are stated in "Hour" units. Given the magnitude of the numbers associated with the hour units, it appears that "Miles" should be the appropriate units. Question: Should the "Hour" units be "Mile" units?	No. The parameter is measured in time (i.e. miles, hours, cycles) . This is dependent upon the requirement. It was determined that in fairness to the manufactures that a system that could have high idle times (exportable power, operating in a degraded mode to remain in the COP, charging land warrior systems, etc) that the best way to capture reliability was in hours. AMSAA has determined that this is the best approach for Objective Force vehicles.

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284	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.4.1	296. Reference: Attachment 1 (MSV), Page: 40, Paragraph: 3.6.4.1, Title: Operational Availability (Ao). Reference: Attachment 2 (UV), Page: 40, Paragraph: 3.6.4.1, Title: Operational Availability (Ao). Statement: The paragraph states that the required Operational Availability (A-sub-o) is 0.95. The calculation of A-sub-o includes unscheduled maintenance time, scheduled maintenance time, and administrative & logistics down time (e.g. waiting for parts), all of which constitute the 'downtime'. The number stated with the A-sub-o requirement, i.e., 0.95, is at a level normally associated with Inherent Availability (A-sub-i), which includes only unscheduled maintenance time as the downtime. Question: Should the requirement be restated as a 0.95 Inherent Availability requirement instead of a 0.95 Operational Availability requirement?	No because requirement 3.6.4.1 clearly states how Ao is calculated. Ai does not include ALDT as does Ao and manufactures can impact ALDT through PBL.

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286	Attachment 1 MSV spec/Attachment 2 UV spec	3.1	<p>298. Reference: Attachment 1 (MSV), Page: 12, Paragraph: 3.1, Title: Mission Profile. Reference: Attachment 2 (UV), Page: 12, Paragraph: 3.1, Title: Mission Profile. Statement: RMS is one measure of surface and terrain roughness, but is by no means a surface definition as it relates to vehicle ride quality or vehicle durability. For example, a low RMS terrain comprising a long flat surface with a solitary bump could prove significantly more damaging to the vehicle than terrain of a higher RMS value comprising multiple short wavelength perturbations. The ranges of RMS values, (e.g. 0.1" ? 0.3") provide an adequate reference only in respect of otherwise defined course profiles, such as those contained in the NRMM suite of programs. However, it is probable that much of the ride quality development may be carried out by Dynamic Modeling in DADS and ADAMS, while ride quality testing will necessarily be conducted on defined test courses. Question: a) Will the Government additionally express the mission profiles in terms of known, defined test course profiles? b) Alternatively, as a less preferred definition, will the Government provide the corresponding special frequency spectra relating to the RMS values supplied in 3.1?</p>	A & B. Yes, the government will provide digitized data for actual test courses. These courses can be used by contractors for ride quality assessments and durability analyses.

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287	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.7.1	<p>299. Reference: Attachment 1 (MSV), Page: 16, Paragraph: 3.2.1.7.1, Title: Ride Limiting Speeds. Reference: Attachment 2 (UV), Page: 16, Paragraph: 3.2.1.7.1, Title: Ride Limiting Speeds. Statement: The 6 Watts average vertical absorbed power, as used in the NRMM suite of programs, is a weighted scale biased to frequencies known to be particularly detrimental to human comfort and fatigue. Since there is no specific requirement for troop seating in the cargo area in this specification, the reason for specifying this particular definition of allowable amplitude frequency spectra is unclear. Known sensitive cargoes, such as missiles for example, typically have a fully defined allowable amplitude frequency envelope related to a specific cargo mass. In consideration of such sensitive cargoes it conceivable that designing to comply with the human requirement may give rise to compromises that could prove detrimental to specific sensitive cargoes. Question: a) Can the Government clarify the intent for the 6 Watts average vertical absorbed power limitation for the cargo area? b) Can clarification be provided as to where in the cargo area the absorbed power instrumentation will be mounted?</p>	A & B. The cargo area requirement has been removed from the MSV and UV Specifications. The cargo area has been redefined in terms of vertical acceleration in section 3.2.1.7.2.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
288	Attachment 1 MSV Spec	3.2.1.16	300. Reference: Attachment 1 (MSV) , Page: 20, Paragraph: 3.2.1.16, Title: S teerable/Lockable Rear Axle. Statement: The use of Dynamic Modeling for developing safe controlling strategies for vehicle operation is expected to be of significant benefit. Combined with enabling technologies such as Drive by Wire or Light (DWL), individually controllable wheel drive torques and/or individual multi axle/wheel steering, if used, could result in significant advantages in vehicle maneuverability and safety at both high and low speeds. Under these circumstances, the requirement to "lock" the rear steering at speeds in excess of 20 MPH could inhibit the development of advanced control strategies. Question: a) Is the Government willing to accept Drive by Wire or Light controlling technologies engineered to the developing DWL industry safety standards? B) Will the Government reword the intent of 3.2.1.16 so that it does not inhibit development? c) If the Government is aware of a minimal acceptable safety standard or code of practice to be applied to DWL hardware and software, will it be specified in the final RFP?	A) One of the risks to a successful ACTD is demonstrating technologies that are immature in the development process. The demonstrators must meet Army safety certification requirements in order to be released to the soldiers during the MUA. B) 20 mph has been removed from the MSV specification C) The proposers are responsible to assure compliance with industry safety standards for emerging technologies.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/comment</i>	<i>Answer/Update</i>
291	Attachment 1 MSV Spec	3.4.2	303. Reference: Attachment 1 (MSV) , Page: 23, Paragraph: 3.4.2, Title: S ize Limitation. Statement: The height and width of the MSV must be tapered at the front and rear to prevent a projected height encroachment during loading and unloading to/from the aircraft. This requirement would be directly applicable to a variant where the material developer controls the shape of the body. It cannot be controlled when the variant is a cargo vehicle with either a fixed or removable cargo body. The variety of potential payloads can easily violate the required dimensions based on how the vehicle is loaded. Question: a) Will the distribution variant that is equipped with material handling equipment/load-handling system be exempted from this requirement once payload has been added to the vehicle? b) If the distribution variant were applicable to this requirement, would it be acceptable to illustrate/demonstrate that by configuring the vehicle for transport within the required dimensions (i.e. shape of the load) this requirement is met?	Section 3.4.2 has been removed from the MSV Specification.

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292	Attachment 1 MSV Spec	3.4.3	<p>304. Reference: Attachment 1 (MSV), Page: 23, Paragraph: 3.4.3, Title: Lifting & Tie-Down Provisions. Reference: Attachment 2 (JV), Page: 23, Paragraph: 3.4.3, Title: Lifting & Tie-Down Provisions. Statement: All variants will be designed to meet the applicable lifting and tie down provision requirements applicable to the agreed upon version of MIL-STD-209 required by this solicitation. Variants with fixed bodies such as the fuel/water tank/pump modules, and wrecker variants can be designed to ensure that the vehicle can be lifted by either a single apex lift using four equal length sling legs or with a 8' x 20' ISO container spreader bar using the same four sling legs applicable to MIL-STD-209J/K. The potential problem is the cargo distribution variant that can carry either a flatrack with payload or an ISO container/shelter. The range of potential volumes cannot be accommodated with the use of telescoping lift provisions or the mandated use of a spreader bar. The current version MIL-STD-209 requires that if a spreader bar is required for lifting the item, it must be supplied with and stored on the item. This result is a space consumption/weight penalty that is undesirable for this application. One solution utilized on all Load Handling System (LHS) equipped vehicles with the exception of the PLS is for the vehicle to be slung less flatrack or container. Another solution is to sling the item using a much larger flatrack or sea sled where no lifting devices are attached the vehicle. It is possible for the procuring activity to relieve a portion of the lifting requirements via relief granted in the purchase description. Question: a) Will the lifting requirements of the cargo distribution vehicle be changed to eliminate the requirement to sling the vehicle with payload? b) If slinging with payload is a requirement, and a spreader bar is the only method to sling the item without impingement with the payload, can the single apex lift portion of the requirement be waived? c) If slinging of the vehicle with payload is required and a spreader bar/container spreader bar is required, can the requirement to provide and store the spreader bar on the vehicle be deleted with a change to the purchase description?</p>	<p>A) No, vehicles with loads can be sling loaded onto Breakbulk/Container ships onto the top decks with gantry cranes and other ship board cranes. B)No. C) No.</p>

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293	Attachment 1 MSV Spec	3.4.3.1	<p>305. Reference: Attachment 1 (MSV), Page: 24, Paragraph: 3.4.3.1, Title: Lifting E yes. Statement: Specifying that the lifting eyes of the vehicle must be rated for 60,000 lbs conflicts with the required load factors/safety factors built into MIL-STD-209J/K. It is assumed that the lift eyes are required to meet the dimensional requirements of MIL-STD-209 in regards to opening size, cross section and absence of shackles. Question: a) Can the rationale be provided for the 60,000 lbs specification rather than simply relying on MIL-STD-209 to govern? b) If the 60,000 lbs is equivalent to the design load per MIL-STD-209, is there also a requirement for an ultimate capacity of the provision other than what is mandated by MIL-STD-209? c) Is there a lateral component to the 60,000 lbs design load as currently only a vertical/longitudinal is required?</p>	Spec has been modified to remove the 60,000 lbs requirement. Lifting and tie-down requirements shall comply with MIL-STD-209.

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294	Attachment 1 MSV Spec	3.4.9	<p>306. Reference: Attachment 1 (MSV), Page: 25, Paragraph: 3.4.9, Title: Rail Transport. Reference: Attachment 2 (UV), Page: 23, Paragraph: 3.4.9, Title: Rail Transport. Statement: This paragraph requires that it is possible to ship the MSV and companion trailer in a coupled condition by rail. This is only possible on domestic rail cars due to combined length of the vehicle and the available OCONUS rail cars defined in MIL-STD-1366. It is also assumed that each truck and the trailer can be secured independently to the rail car via the four tie down provisions located on that item. In essence, each item is secured to the car as if it were shipped separately. Each vehicle can have its height/width reduced for transport to comply with the tunnel profiles contained in MIL-STD-1366 if little or no disassembly is required.</p> <p>Question: a) Is it correct to assume that the intention is to ship the truck/trailer combination only when sufficiently long rail cars are available? b) Will each vehicle of the combination be secured to the rail car via the four tie down provisions provided as if they were shipped independently? c) Is it permissible to perform limited preparation such as folding mirrors, removing whip antennas, folding a Load Handling System hook, if present, to meet tunnel opening requirements/profiles contained in MIL-STD-1366?</p>	<p>A) Yes, the MSV and CT shall be shipped in combination (i.e., coupled) when appropriate rail equipment is available.</p> <p>B) Yes, each vehicle of the combination shall be secured to the rail car via the four tie down provisions provided as if they were shipped independently. All tie-down procedures are developed by the Army's transportability office and coordinated with the Program Management Office and Vehicle Manufacturer.</p> <p>C) Yes, however, any preparation must meet the requirements set in the Draft FTTS MSV Performance Specification, paragraph 3.4.4.2 Preparation Time.</p>

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295	Attachment 1 MSV spec/Attachment 2 UV spec	3.4.11 (MSV)/3.4.14 (UV)	307. Reference: Attachment 1 (MSV), Page: 25, Paragraph: 3.4.11, Title: Hazardous Material Transport. Reference: Attachment 2 (UV), Page: 25, Paragraph: 3.4.14, Title: Hazardous Material Transport. Statement: Transport of potentially hazardous materials such as fuels, explosives, or munitions require placards to be placed on all sides of the vehicle per FMCSR 172 whenever there are sufficient quantities of the materials present on the vehicle. It is understandable that dedicated variants such as fuel haulers will have to have these placards/frame provided. Question: a) Will the material developer be required to supply placards on the cargo distribution variant? b) Can the Government identify which commodities placards are required for? c) Will the procuring activity define which placards are required to be supplied on dedicated variants such as the fuel transporter?	A) The proposer shall meet the requirements of FMCSR 172 and 3.4.11 . B) Specific cargos have not been defined at this time. C) Placards are necessary to be compliant with the regulations in section 2 of the Performance Specifications and necessary for transport of supplies. Currently, the following supplies are identified: Class III (POL), Class V (Ammo), Class VIII (Medical) and other classes of supply that may pose a hazard during peacetime/contingent movements during operations. The placards will not be required for the demonstration phase of the ACTD.

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298	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.5.2	310. Reference: Attachment 1 (MSV), Page: 31, Paragraph: 3.5.5.2, Title: Exterior Work Lamps. Reference: Attachment 2 (UV), Page: 31, Paragraph: 3.5.5.2, Title: Exterior Work Lamps. Statement: This paragraph requires a pair of fixed work lights be provided to illuminate the rear of the vehicle. There also is a requirement for an additional two portable work lights to be provide to perform inspection or illuminate other areas of the vehicle. Question: a) Do the portable work lights need to have a magnetic base or equivalent device to allow them to attach to and illuminate an area without a crewmember having to hold it? b) Does each of the portable work lights need to have its own extension harness or is a single (shared) extension harness adequate? c) Is it possible that the fixed and portable work lights are the same providing there is a means of securing the work light in a fixed location via a magnetic base/storage bracket to comply with this requirement?	A-C. This is up to the proposer to determine not for the government to define. The portable work lamps should be independent of one another and independent of the fixed work lamps. Adequate stowage shall be provided to withstand shock and vibration/terrain traversing capabilities of the vehicle.

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299	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.9.1	311. Reference: Attachment 1 (MSV), Page: 32-33, Paragraph: 3.5.9.1, Title: Master Power Cutoff Switch. Reference: Attachment 2 (UV), Page: 32, Paragraph: 3.5.9.1, Title: Master Power Cutoff Switch. Statement: The vehicle is to have a device present to disconnect all power between the batteries or energy storage device and the rest of the truck. Question: a) Is the purpose of this switch to disconnect the batteries for storage and maintenance? b) Can this switch be located on the exterior of the vehicle in close proximity to the batteries/energy storage devices as long as it can be secured with a padlock?	A) Yes the purpose of the switch is to disconnect the batteries for storage and maintenance. B) It is up to the proposer to determine the location of the switch on the truck.

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301	Attachment 1 MSV spec/Attachment 2 UV spec	3.7.2.2	313. Reference: Attachment 1 (MSV), Page: 41, Paragraph: 3.7.2.2, Title: Crush Protection. Reference: Attachment 2 (UV), Page: 41, Paragraph: 3.7.2.2, Title: Crush Protection. Statement: Paragraph 3.7.2.2 requires the cab is required to meet the crush protection requirements specified in FMVSS 208. It should be noted that FMVSS 208 deals with "crash" protection not "crush" protection. Question: a) Please clarify what "crush" protection is required? b) Will the Government consider changing the paragraph to indicate "crash protection" consistent with FMVSS 208?	The attachment will be updated to Crash Protection instead of Crush Protection.

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302	Attachment 1 MSV spec/Attachment 2 UV spec	3.7.2.10	314. Reference: Attachment 1 (MSV), Page: 42, Paragraph: 3.7.2.10, Title: M4/M16 Rifle Mounting. Reference: Attachment 2 (UV), Page: 42-43, Paragraph: 3.7.2.10, Title: M4/M16 Rifle Mounting. Statement: The M4/M16 weapons are different in terms of sights, barrel lengths, and add-on devices such as a grenade launcher or a blank adapter. Question: a) Does the weapon storage area need to accommodate any or most of these differences and optional devices that can be installed on the weapon? b) If optional equipment is required on the weapon, does the required mounting kit (Ref 5705590) permit these to be present and still prevent the weapon from being dislodged during off-road operations?	A) Yes. B) Please see drawing 5705590

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303	Attachment 1 MSV Spec	3.8.1	315. Reference: Attachment 1 (MSV), Page: 45, Paragraph: 3.8.1, Title: Intelligent Load Handling Systems (ILHS). Question: a) Can the one or more crewmembers assist in converting the Intelligent Load Handling System (ILHS) between cargo handling or self load arm modes if a single piece of material handling equipment approach is used? b) Will details of the load module containers or platforms be provided to the material developers?	A) Yes. B) It will be provided to the awardees at the start of work meetings.

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308	Attachment 1 MSV Spec	3.9.4.1	320. Reference: Attachment 1 (MSV), Page: 51, Paragraph: 3.9.4.1, Title: Height. S statement: The need to carry an empty 8' tall (Type 1C) ISO container and not exceed the 4M requirements dictates suspension and tire selections for the trailer. The trailer while loaded with a M3 CROP height cannot exceed 102 inches for air transport. To accomplish this, either the A-frame for the CROP must be folded or the suspensions/tires collapsed. Question: a) Can the M3 CROP A-frame be folded to reduce overall height for transport of a MSV CT on a C-130 Aircraft? b) If folding the A-frame is acceptable, will cargo tie down straps be available from the M3 CROP to secure the A-frame to comply with the restraint criteria of MIL-STD-1791?	A) Yes, the government will evaluate any design to accommodate this requirement. B) It is up to the offeror to propose a solution.

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309	Attachment 1 MSV spec/Attachment 2 UV spec	3.9.5.1.2	321. Reference: Attachment 1 (MSV), Page: 51, Paragraph: 3.9.5.1.2, Title: A autonomous Operation (Objective). Reference: Attachment 2 (UV), Page: 49, Paragraph: 3.9.5.1.2, Title: A autonomous Operation (Objective). Statement: Paragraph 3.2.1.15 implied that the threshold power source for the trailer drive would be via hydraulics on the MSV. This paragraph infers that the MSV companion trailer can/shall be equipped with its own engine or electrical power source to provide the necessary locomotive, and operational power. Question: a) Is it the intent that the MSV CT be designed with its one electric/hydraulic power source to permit autonomous operation? B) If this feature is possible is there a specific way that the MSV CT must be controlled (on-board controls, a tethered remote, or wireless remote)? c) How will safety devices mandated by FMVSS/FMCSR, such as brakes be operated on the MSV CT in this mode?	A) This is an objective requirement. An electric/hydraulic power source is only one possible technical solution. Offerors are encouraged to propose innovative solutions to the requirements. B). No preferences are stated in the performance specification. Offerors are encouraged to propose innovative solutions to meet the requirements. C) It is up to the proposer to determine how to meet the requirement

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310	Attachment 1 MSV spec/Attachment 2 UV spec	3.9.5.1.6	322. Reference: Attachment 1 (MSV), Page: 52, Paragraph: 3.9.5.1.5, Title: Tires /Wheels. Reference: Attachment 2 (UV), Page: 49, Paragraph: 3.9.5.1.6, Title: Tires/Wheels. Statement: Common wheels/tires and lug nuts between MSV and MSV CT is only possible if the same hub/wheel end is used in both applications. This would imply potentially the same axle/suspension approach. Question: Would the MSV CT need to carry a same spare tire/tire changing equipment?	This is up to the proposer to determine. Currently there is not a requirement for the spare tire in the MSV specification directly.

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311	Attachment 1 MSV Spec	3.9.5.4	323. Reference: Attachment 1 (MSV), Page: 52, Paragraph: 3.9.5.4, Title: Trailer T ransloading Capability. Statement: This requirement presents a number of challenges. The presence of a system to handle containers and flatracks would likely interfere with a similar device on the MSV if the MSV device were used to make the transload. A MSV CT dedicated system would require a significant hydraulic/electric power source. The weight of the MSV CT would not have sufficient ballast to prevent it from moving while handling a fully laden container and flatrack. The result would be a truck less a cab. The truck/trailer combination would present length/turning circle issues that would require more complicated components to solve (steering axles/adjustable drawbars). This seems a costly and technically challenging requirement unless the current LHS approach is abandoned and a roll back car carrier/bed approach were pursued. Given the obstacles/mobility requirements for the MSV CT, any load transfer between the MSV and the MSV CT would have to be performed from the rear of the MSV CT. The height adjustment required to perm it this transloading to/from the range of aircraft from a C-130 to a C-5/C-17 would require excessive vertical travel that adds costs and weight to the MSV CT. Question: a) After review of the issues stated above, can the Government provide rationale behind the requirements for the different trans loading conditions? b) Can any feasibility study reports for the MSV CT and its transloading requirements be made available to industry?	A) This is an objective M&S requirement. The transloading conditions set in the performance specification are encountered in the field, during deployment, preparation for onward movement, and redeployment. B) No MSV/CT transloading feasibility studies have been made to date.

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312	Attachment 1 MSV spec/Attachment 2 UV spec	3.10.1.3	<p>324. Reference: Attachment 1 (MSV), Page: 54, Paragraph: 3.10.1.3, Title: Self Refueling. Reference: Attachment 2 (UV), Page: 51, Paragraph: 3.10.1.3, Title: Self Refueling. Statement: This paragraph requires a robotic aircraft/helicopter style refueling/fueling system to provide this capability. The 15 GPM flow rate dictates the size of the system. To accomplish this from inside the vehicle a number of items will be required: sensors to align the vehicles, telescoping nozzle/guiding coupling, a means to clean off one or both of the connections, a means to ground the two vehicles prior to any fuel flow.</p> <p>Question: a) Does this capability need to be present on all MSV and potentially MSV CT variants? b) If due to cost and space limitations this is only feasible on the refueling variant, will this paragraph be revised accordingly?</p>	A & B. The specifications shall be updated to state "Objective" for this requirement. A threshold requirement shall be defined.

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313	Attachment 1 MSV spec/Attachment 2 UV spec	3.10.3.1	325. Reference: Attachment 1 (MSV), Page: 55, Paragraph: 3.10.3.1, Title: Water Generation. Reference: Attachment 2 (UV), Page: 52, Paragraph: 3.10.3.1, Title: Water Generation. Statement: The specific requirements for the water generation/storage system are not fully defined by this paragraph. It appears that a similar remote drain/fill system is required for potable water. Question: a) Given the precautions required to sanitize all storage and dispensing equipment for potable water to prevent illness/bacteria growth, is this a feasible/practical requirement? b) Would this same approach be used in a potentially NBC contaminated environment? c) What if the sanitation requirements consumed a significant portion of the water reserves? d) How will the water stored on the vehicle be protected from freezing if the vehicle is not operated and power cannot be supplied to an internal heater due to fuel/available power/battery condition?	<p>A) Yes. The system will include an integral disinfection component. This provides both disinfection and a residual disinfectant. The most recent version of the system includes a MIOX system. In this system salt is mixed with water then passed through an electrolytic cell where chlorine and other oxidants are formed. Discussions with CASCOM and CHPPM have suggested that it will be feasible to manage these systems in a manner similar to the water buffalo, where they are periodically inspected and certified by preventive medicine representatives and the operator is then trained in the maintenance of the system.</p> <p>B) Yes. The filters are currently being evaluated for the removal of chemical agents at Dugway Proving Grounds. It is anticipated they will be very effective in removing these agents since the technology used to purify exhaust condensate includes the GAC which is used on current Army field water purification systems for polishing the effluent in an NBC environment. The filter is a closed system and can be sealed as it is removed for replacement, thus isolating the soldier from any contaminants.</p> <p>C) The sanitation requirements outlined in A above require very little water and recycle it back to the system and in B there is NO specific water requirement.</p> <p>D) Water will need to be protected from freezing if stored in below freezing temperatures. Several engineering approaches are possible, but as you indicate will require a running engine, power from a battery, or fuel fired heater. If the power/fuel requirement cannot be met the system will be designed so that it can be drained to protect the system from freezing, of course this means a loss of stored water but cannot be avoided.</p>

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314	Attachment 1 MSV spec/Attachment 2 UV spec	3.10.7	326. Reference: Attachment 1 (MSV), Page: 56, Paragraph: 3.10.7, Title: Rear Reflective Signature. Reference: Attachment 2 (UV), Page: 53, Paragraph: 3.10.7, Title: Rear Reflective Signature. Statement: Per FMVSS 108 all trailers are required to have conspicuity reflectors present on the sides and rear of the trailer to improve their visibility. In a military environment, it will be necessary to obscure or remove these reflectors. Question: a) Please clarify the need for conspicuity reflectors? b) If these reflectors need to be present, is the desire for them to be easily removable or readily obscured? c) If conspicuity reflectors are not desirable at all, due to tactical considerations, will the specification be modified accordingly?	A) Reflectors are required by FMVSS 571.108 section 5.7. B) Marking systems shall be easily removed or readily obscured (refer to section 3.10.7, second sentence). C) The requirement will not be modified.

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315	SOW	c.1.1.1/c.4.4.2/c.4.4.2.1	327. Reference: Draft SOW (Section C), Page: 1, Paragraph: C.1.1.1., Title: FTTS Demonstrators. Reference: Draft SOW (Section C), Page: 16, Paragraph: C.4.4.2., Title: First Demonstrator Quantities and Delivery. Reference: Draft SOW (Section C), Page: 16, Paragraph: C.4.4.2.1., Title: Second Demonstrator Quantities and Delivery. Statement: Paragraph C.1.1.1. states that (7) MSV Distribution Variants with (7) MSV Companion Trailers and (10) UV Support Variants with (2) Companion Trailer demonstrators will be designed and fabricated. Paragraph C.4.4.2. requires delivery of (2) MSV Distribution Variants and (2) MSV Companion Trailers and (2) UV Support Variant demonstrators with (2) Companion Trailers NLT December 1, 2005. Paragraph C.4.4.2.1. requires delivery of (7) MSV Distribution Variants and (7) Companion Trailers and (10) UV Support Variants and (2) Companion Trailers NLT January 15, 2006. Question: a) Can the Government clarify the correct number of vehicles in each paragraph? b) Should the correct quantity in paragraph C.4.4.2.1. be: (5) MSV Distribution Variants with (5) MSV Companion Trailers and (8) UV Support Variants?	The quantities will be revised in the final solicitation.