

Completed Responses to FTTS ACTD Questions

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4	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.11.4.5/3.2.1.9.4.4	4. I would like to comment on paragraph 3.2.1.11.4.5 "Maintenance of Tire Pressure". I feel certain that the intent is to assure that the actual pressure is no more than 3 psi BELOW the selected pressure (i.e. to address leakage). My opinion is that the current wording would also indicate that a 3 psi increase in pressure is not permitted. You should not limit the pressure increase to "no more than 3 psi". In normal operation, tires increase in pressure from the recommended "cold" inflation pressure to an equilibrium inflation pressure higher than the "cold" inflation pressure. This increase in pressure is normal and is necessary for the tire to operate as designed. For "highway" speeds/conditions, we would expect the inflation pressure to increase by 15-20%. For "cross-country", we would expect about 10%. And for "mud/sand/snow", about 5%. Not only is it desirable for this increase in inflation pressure to occur, it is very dangerous if it is not permitted to occur. If the inflation pressure is sensed at intervals and the pressure increase is allowed to "bleed off", then the tire will heat even more (due to being overloaded for the pressure). At the next measurement interval, the "overheated" pressure will again be sensed as too high and bled again. If the downward cycle continues for sufficient time the tire will become very overheated and fail.	The Government agrees with comment of "no more than 3 psi below" and the paragraph 3.2.1.11.4.5 in the MSV Specification as well as paragraph 3.2.1.9.4.4 of the UV Specification has been changed to state "no more than 3 psi below exists between selected pressure and actual pressure..."

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12	CDD		24. Some of the specifications appear to reference a CDD. Where can we obtain a copy of the CDD? This CDD appears to include requirements not contained in the original emerging requirements document. Also, what is the difference between specifications that reference the CDD and those that do not? Are the items not referenced, not driven by specific user capability requirements?	CDD is currently in draft form and is not available for public release. All CDD references have been removed from the performance specification documents.

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29	SOW	C.1.2.2.2.3	41. Section 3, Draft Scope of Work: C.1.2.2.2.3 Survivability Analysis. Should this be as all encompassing as the paragraph and attachment describes? The technologies associated with such things as radar reflectivity and IR coatings are not truck peculiar. These technologies are being investigated elsewhere. Would the time and money not be better spent focusing on truck peculiar survivability technologies such as noise and armor protection which are not being developed anywhere else in the Army but here.	Current TWVs have a large signature cross-section. This analysis would provide insight as to future improvement to make TWVs more survivable. Noise (acoustic) and armor requirements tailored for FTTS' in the UA are included in the classified survivability annex.

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30	SOW	C.1.2.2.2.6	42. Section 3, Draft Scope of Work: C.1.2.2.2.6 Cost Analysis. There is nothing that indicates when the SDD and production cost estimates are to be delivered. Since this is a sub-paragraph of C.1.2.2.2 , post CDR Government Analysis, is this to be delivered 14 months after contract award? a) If so, since the government has not yet decided on a procurement strategy which dictates whether the FTTS capabilities will be achieved through block upgrades or a "new start", is this timing premature? Will the Army have settled on a strategy before it has the benefit of the MUA? b) If not, when will this estimate be required? XXXXXXXX recommends that it be at late in the program as possible, to insure that the data is as current and accurate as possible to support an Army decision.	A & B) It will be initially identified at CDR with an update provided after the Military Utility Assessment NLT 1QFY07. The Delivery of cost data at CDR and after the MUA will be added to the SOW. The TWV Modernization Strategy was briefed to industry 30 MAR 04 by COL (P) Patrick O'Reilly PEO CS&CSS.
34	Attachment 2 UV spec	3.1	46. Attachment 2, FTTS UV Performance Specification: 3.1 Mission Profile. Is this mission profile the same as FCS? If not please explain the difference and the justification?	It is not the same because the UV is envisioned to traverse over more terrain in non-combat roles.
36	Attachment 2 UV spec	3.2.1.5.3	48. Attachment 2, FTTS UV Performance Specification: 3.2.1.5.3 Emergency Brakes. This paragraph presupposes that an air brake system is required on the Utility vehicle. Is that the intent of this paragraph?	Section 3.2.1.5 Braking of the UV specification has been updated.
38	Attachment 2 UV spec	3.2.1.9.4.4	50. Attachment 2, FTTS UV Performance Specification: 3.2.1.9.4.4 Maintenance of Tire Pressure. Recommend the phrase "At the same ambient temperature" be added to remove temperature changes from consideration.	The specification will remain the same.
39	Attachment 2 UV spec	3.2.1.11	51. Attachment 2, FTTS UV Performance Specification: 3.2.1.11 Turning Requirement. Why is the deck requirement different from that of the MSV? Are not both vehicles carried on same ship?	The deck (which refers to "wall-to-wall") requirement is different because the MSV and UV are two different sizes. Yes, both vehicles are carried on the same ship.

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40	Attachment 2 UV spec	3.2.1.16	52. Attachment 2, FTTS UV Performance Specification: 3.2.1.16 Power Generation. Do all vehicles/variants have to meet all power requirements?	Yes all vehicle variants have to meet all power requirements.

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41	Attachment 2 UV spec	3.2.1.16.5	53. Attachment 2, FTTS UV Performance Specification: 3.2.1.16.5 Extended Electrical Capability/Capacity. What is meant by the phrase "When applicable"? Does this imply that the requirement does not exist on all variants?	Section 3.2.1.16.5 has been updated in the UV specification by the removal of "When applicable". The requirement, however, does exist on all variants.

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43	Attachment 2 UV spec	3.2.2.1	55. Attachment 2, FTTS UV Performance Specification: 3.2.2.1 Range By stipulating both range and fuel storage, this in fact establishes a fuel economy requirement. If this is what the government is trying to do it should simply state that. If it wants to establish an operational range then that should be stated and left up to the contractor to meet that range while satisfying all the other requirements of the specification. Also, the requirement for additional range with fuel reserves is superfluous since it in effect simply demands the addition on a 5-gal jerry can.	The government has a requirement for the range as well as minimizing the total fuel brought to the battlefield. The UV Performance Specification was been changed.

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44	Attachment 2 UV spec	3.2.3.1	56. Attachment 2, FTTS UV Performance Specification: 3.2.3.1 Vertical Step. The requirement for the same 24" vertical step on a vehicle the size of the UV, as on the MSV, has potential adverse affects on C-130 transportability. This will undoubtedly require larger diameter tires than on the current HMMWV and therefore preclude the use of existing shelterized systems. There is no CDD reference. Also, the 4 Litter Ambulance requirement could be jeopardized.	Technology is available that allows for compliance to the 24" vertical step and transport of shelters onto a C-130. All CDD references have been removed from the Spec.

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46	Attachment 2 UV spec	3.3	58. Attachment 2, FTTS UV Performance Specification: 3.3 Survivability Will industry not have an opportunity to comment prior to release of formal solicitation?	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.

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47	Attachment 2 UV spec	3.4.4	59. Attachment 2, FTTS UV Performance Specification: 3.4.4 C-130 Air Transport Requiring only 2 UVs seems to be a step backward from the current strategic deployability and intra-theater lift capability since currently, depending on the specific models, 3 HMMWVs can be carried on a C-130. Certainly, the requirement should at least be for 2 UVs and 1 trailer. Considering the high technical challenges in other areas, it is hard to understand why the user would take a step backward in this area. Also, there appears to be an inconsistency between the threshold MSV and UV requirements. The MSV has a threshold of 18.1 short tons, but the UV is limited to 15 short tons. Why would the government impose this limit on one vehicle but not the other? This could mean the difference between carrying a trailer or not.	The specification will remain the same for vehicle quantities on a C-130. It does not prevent the offeror from exceeding the requirement. The C-130 weight threshold inconsistency has been updated to match the MSV documentation.

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48	Attachment 2 UV spec	3.4.11.1	60. Attachment 2, FTTS UV Performance Specification: 3.4.11.1 CH-47 Transport. XXXXXXXX is unaware of any consideration to use the M119 towed howitzer in the Unit of Action. Why is this a CH-47 transportability requirement? If the MSV does not have a CH-47 transportability requirement, why does the UV? What is the cargo weight limit for the aircraft for 30NM radius of action and 60NM radius of action at 4000 ft. and 95 degrees F?	The ACTD is being executed as a joint program with the Marine Corp and Air Force participation. The Marine Corp has a requirement for CH-47 transport of an FTTS UV with the M119A1. The weight requirement for the CH-47D at 4000ft, 95 F, and 30NM is 16,644 lbs. The MSV does not have this requirement because the vehicle sizing would be outside the CH-47D transportability envelope.

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50	Attachment 2 UV spec	3.4.11.3	62. Attachment 2, FTTS UV Performance Specification: 3.4.11.3 MV-22 Transport. If the other UA platforms, to include the MSV, are not MV-22 transportable, why must the UV meet this requirement? Also, this paragraph appears contradictory since it begins by saying that it must be transportable at GVW, yet later it indicates that for ship to ship transfer the UV cannot exceed 11,600 lbs. This appears to be the max lift capability of the MV-22 and therefore the max GVW of the UV. Please explain.	The ACTD is being executed as a joint program with the Marine Corp and Air Force participation. The Marine Corp has a requirement for MV-22 transport of an FTTS UV. It is noted that some of the transportability requirements are superceded or overlap others (e.g. UH-60). That is because of the joint nature of the ACTD. The offeror will be required to execute a transportability analysis. GVW has been reduced to curb weight and the paragraph will be updated. (Performance Requirements Trade-offs IAW C.1.2.1 & C1.2.3). The specification for section 3.4.11.3 has been updated.

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51	Attachment 2 UV spec	3.4.12	63. Attachment 2, FTTS UV Performance Specification: 3.4.12 Airdrop. Why is there an airdrop requirement if the UA is not an airborne unit? The paragraph references module-remounting times. To what modules does this refer?	The UV airdrop requirement will remain in the specification. The reference to module remounting time has been removed from the UV Specification.

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52	Attachment 2 UV spec	3.5.1	64. Attachment 2, FTTS UV Performance Specification: 3.5.1 Com munication Equipment (Objective). How will the contractor be provided detailed information on C4I systems and JTA identified in this paragraph?	Section 3.5 of the UV specification has been updated. The information required for objective performance modeling has been provided.

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53	Attachment 2 UV spec	3.5.3.2.1	65. Attachment 2, FTTS UV Performance Specification: 3.5.3.2.1 Meals Ready to Eat (MRE) Outlet. The power capacity of the three (3) convenience outlets need to be specified. Are both 12- and 24-volt outlets required or is it at the contractor's option?	Both are required. 12 volts is a US standard and 24 volts is a NATO standard and it is necessary to have both to be compatible with all systems as needed.

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55	Attachment 2 UV spec	3.5.5	67. Attachment 2, FTTS UV Performance Specification: 3.5.5 Lighting. Does this paragraph imply that it is acceptable to not illuminate indicators and gauges in blackout mode of operation?	No; Refer to section 3.5.5.4.

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56	Attachment 2 UV spec	3.5.5.4	68. Attachment 2, FTTS UV Performance Specification: 3.5.5.4 Secure Lighting. Shouldn't the vehicle horn also be included in the list of devices to automatically disengage during blackout operation? This paragraph should also require front blackout marker lamps for two reasons: 1) these lamps provide the only vehicle presence indication when the blackout driving headlamp is not illuminated 2) the blackout markers are meant to identify vehicle physical limits to oncoming traffic (reference MIL-STD-1179).	No, because of safety consideration. Section 3.5.5.4 adequately defines blackout markers. Requirement calls out a drive lamp in the front and blackout marker lamps in the rear.

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59	Attachment 2 UV spec	3.7.2.14.3	71. Attachment 2, FTTS UV Performance Specification: 3.7.2.14.3 Controls. How is weapon release consent transmitted to/received by the crew?	Section 3.7.2.1.4.3 has been updated of the UV specification and "weapon release consent" has been removed.
62	Attachment 1 MSV Spec	3.1.4.2	74. FTTS MSV Performance Specifications, 3.1.4.2 Storage Temperatures Recommendation: To accommodate -60F/160F storage, preparation of vehicle is required. Suggest adding preparation for storage allowed to sustain temperature limits of -60F/160F. Reason: Components cannot resist long-term storage without proper preparation.	Performance spec does not call out the preparation for storage procedures, but does not exclude it. It is up to the contractor to define how to meet the requirements.
65	Attachment 1 MSV Spec	3.1.4.3	77. FTTS MSV Performance Specifications, 3.1.4.3 Heater and Defrost Question: What is the target heater performance at -50 F? Recommendations: -50 F to 30 F in 20 minutes, to 45 F in 60 minutes. Reasons: Missing from specification. Benefits: Improved specification.	J381 (Windshield Defrosting Systems Test Procedure and Performance Requirements) will replace all references to J382 (J382 : Windshield Defrosting Systems Performance Requirements--Trucks, Buses, and Multipurpose Vehicles (Cancelled Sep 2000)). The new J381 contains both test setup and procedure as well as definition of performance requirements. No temp differential is needed, J381 calls for the defrost of Area A. -25 to 41 F is cab temperature.
67	Attachment 1 MSV Spec	3.1.4.3	79. FTTS MSV Performance Specifications, 3.1.4.3 Heater and Defrost Recommendations: Add requirement to maintain a minimum of .25" water column static pressure inside the cab during vehicle operation. Reasons: Reduces ingress of unfiltered outside air. Benefits: Safety improvement.	Currently, this does not fall under the heater/defroster requirements. It is not mandatory in government system; however, it can be proposed.

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68	Attachment 1 MSV Spec	3.1.4.3	80. FTTS MSV Performance Specifications, 3.1.4.3 Heater and Defrost Question: Specification calls out SAE J382 and J381 as part of the defrost specification. Recently SAE J382 was combined with J381, to form the revised SAE J381. Should we be utilizing the newer version of SAE J381 and disregarding SAE J382? Recommendations: Utilize SAE J381 specification and drop reference to SAE J382. Reasons: New J381 specification includes side window defrost requirements not found in old versions. Benefits: Safety improvement, improved specification.	J381 (Windshield Defrosting Systems Test Procedure and Performance Requirements) will replace all references to J382 (J382 : Windshield Defrosting Systems Performance Requirements—Trucks, Buses, and Multipurpose Vehicles (Cancelled Sep 2000)). The new J381 contains both test setup and procedure as well as definition of performance requirements.

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69	Attachment 1 MSV Spec	3.2.1.5.2	81. FTTS MSV Performance Specifications, 3.2.1.5.2 Parking Brakes: Recommendation: Revise 30% requirement as threshold, 40% (objective) Reason: Current system capability. Benefit: Consistent with section 3.2.1.10.1	This has been added into the FTTS MSV Spec.

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70	Attachment 1 MSV Spec	3.2.1.5.4	82. FTTS MSV 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 MSV specification.

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71	Attachment 1 MSV Spec	3.2.1.5.5	83. FTTS MSV 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 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 without 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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72	Attachment 1 MSV Spec	3.2.1.7.1	84. FTTS MSV Performance Specifications, 3.2.1.7.1 Ride Limiting Speeds Question: For the speeds without a digitized NRMM course listed, what is the shape of the RMS road profile? Is it Random, a set decay with wave number, or something else?	The current MSV spec does not have digitized NRMM course names listed. The NRMM software includes digitized courses for each of the RMS values listed.

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77	Attachment 1 MSV Spec	3.2.1.18	89. FTTS MSV 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	Yes, the DC, AC and other loads are to be run simultaneously.

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79	Attachment 1 MSV Spec	3.5.4.1.9	91. FTTS MSV Performance Specifications, 3.5.4.1.9 Reporting Question: Assume the intent of this report is to have a message at most one second long which contains the information identified in section (a) through (f). Please verify. Reasons: Clarification of requirement	The FTTS proposers are only required to address the interface requirements for the C4ISR suite. The power, space claim and thermal loads are provided in the MSV Specification Section 3.5.1.7. All other C4ISR requirements are for objective performance modeling and informational purposes.

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80	Attachment 1 MSV Spec	3.5.4.1.9	92. FTTS MSV 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 MSV Specification.

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81	Attachment 1 MSV Spec	3.5.4.1.9	93. FTTS MSV 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	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 specification Threshold requirements for the minimum demonstrator C4I functionality. As additional Objective C4I becomes available it will be provided.

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82	Attachment 1 MSV Spec	3.5.4.1.9	94. FTTS MSV 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.	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 specification Threshold requirements for the minimum demonstrator C4I functionality. As additional Objective C4I becomes available it will be provided.

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85	Attachment 1 MSV Spec	3.6.2/3.4.4.2	97. FTTS MSV Performance Specifications, 3.6.2.b and 3.4.4.2 Maintainability-Sustainment Maintenance Recommendations: Add - Single operator DOT pre-trip light inspection. Reason: Ease/speed of inspection process reduction Benefit: Cost savings for resource requirements to complete inspection.	The requirement will not be added. Each proposer must determine how the performance requirements will be met.

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86	Attachment 1 MSV Spec	3.6.2.2	98. FTTS MSV Performance Specifications, 3.6.2.2 Design for Maintainer Recommendation: Add - No tool required for drainage of fuel water separator cavity and no tool required for drainage of fuel strainer cavity. Reason: Eliminates the need for tools to complete these operations, can be completed manually. Benefit: Reduced tool expense, complexity and inventory. Recommendation: Easily accessible top load fuel filter water separator element. Reason: Direct access, no other components in way of completing the operation. Benefit: Reduce maintenance hours, supports the anthropological access to the service item.	The Government will not provide this level of detail. Each proposer must determine how the performance requirements will be met. This should be included in the overall PMCS design approach.

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87	Attachment 1 MSV Spec	3.6.2.2.1	99. FTTS MSV Performance Specifications, 3.6.2.2.1 Component Accessibility and Identification Recommendations: Add - All fluid checks can be performed by standing at one side of the engine compartment. Reason: Consistent approach for drivers, maintainers to verify fluid levels. Ease and speed of operator and unit level maintenance. Benefit: Less motion required for maintenance preparation. Recommendations: In addition to minimum electronically controlled components add light loads, air loads (i.e. Diff lock, PDL), cluster functionality and HVAC controls. Reason: Diagnostics improvement as a result of multiple electronic controls. Benefit: Reduced diagnostic and maintenance times. Recommendation: Add - Color-coded and labeled wiring as well as part number identification labels on harnesses. Reason: Ease of identification for serviceability. Benefit: Reduced maintenance/service time and mistake proof of wire labels.	The Government will not provide this level of detail. Each proposer must determine how the performance requirements will be met. There are many factors that must be considered in order to meet the maintenance ratio.

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88	Attachment 1 MSV Spec	3.6.2.3/3.6.2.5	100. FTTS MSV 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. There are many factors that must be considered in order to meet the maintenance ratio.

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89	Attachment 1 MSV Spec	3.6.2.3	101. FTTS MSV 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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90	Attachment 1 MSV Spec	3.6.2.3	102. FTTS MSV Performance Specifications, 3.6.2.3 Maintenance Ratio - Maintenance Man-Hours per Operating-Hour Recommendations: Add a requirement to the PMCS to report to the driver the GVW and GCW of the loaded vehicle and trailer to within TBD lbs. Reasons: Clarification of requirement Benefits: Besides C-130 air transport, allows operator to determine whether vehicle will meet mission weight restrictions such as applicable local laws for vehicle load weights without having to have scale facilities available.	The government is not defining the PMC and PMCS within this document. Refer to section 3.4.1

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91	Attachment 1 MSV Spec	3.6.2.10.1	103. FTTS MSV Performance Specifications, 3.6.2.10.1 Prognostics Recommendations: In addition to component prognostics, we would recommend that the government add prognostics for other factors such as: a.) Air compressor prognostics/diagnostics - monitor & detect reduced compressor output, detect improper governor operation b.) Automated battery state-of-charge detection c.) Automated battery capacity detection d.) Tire tread wear detection e.) High accuracy fuel level measurement with fuel leakage/theft detection and re-fueling monitoring f.) Fuel filter s tate-of-health and end-of-life prediction g.) Fuel gelling warning h.) Engine oil condition i.) Axle oil contamination (water) detection j.) Transmission fluid contamination (water) detection Reasons: Fluid condition is precursor detection to prevent damage to components that would shorten component life and battery condition may be important to warfighter in completing his/her mission beyond the concern for the failure of the component. Benefits: Better product more suited to warfighters' needs, eliminate need for oil analysis.	It is up to the proposer to define the overall prognostics and diagnostics approach for the system offered. Vehicle architecture and system design will determine the level of diagnostics and prognostics required to assure all RAM requirements are met. The government will not define individual components.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
92	Attachment 1 MSV Spec	3.6.2.10.2	104. FTTS MSV Performance Specifications, 3.6.2.10.2 Diagnostics Question: In the governments view, what is the meaning of "Integrated diagnostics will support mean corrective maintenance time parameters?". Is this a requirement to report MCMT, to improve it over systems without it or some other definition? Is there any requirement to validate meeting this requirement? Recommendations: Clarify per questions	The sentence referring to "Integrated diagnostics will support mean corrective maintenance time parameters" has been removed from the MSV Performance Specification.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
93	Attachment 1 MSV Spec	3.6.4.2	105. FTTS MSV Performance Specifications, 3.6.4.2 Service Life Recommendations: Add - Parts availability to North America logistics support bases within 24 hours of request receipt 7 days a week. Reason: Increased availability. Benefits: Reduced parts warehousing and inventory.	The government will not incorporate the recommended language. Section 3.6.4.2 does not address parts support as questioned.
94	Attachment 1 MSV Spec	3.6.4.2	106. FTTS MSV Performance Specifications, 3.6.4.2 Service Life Question: When will the government supply the percentages referenced in section (a)-(d) or is this to be determined as part of the M&S activities? Reasons: Clarify requirements	This has been updated in the MSV Specification through a revised OMS/MP to reflect usage rates. It is a 10% High, 15% Medium, 50% low OPTEMPO and 25% idle.
95	Attachment 1 MSV Spec	3.6.4.2	107. FTTS MSV Performance Specifications, 3.6.4.2 Service Life Question: Where does a bidder find technical definitions of the various levels of OPTEMPO?	The various levels of OPTEMPO shall be defined in the MSV and UV specifications.
97	Attachment 1 MSV Spec	3.7.2.2/3.7.2.1	109. FTTS MSV Performance Specifications, 3.7.2.2 Crush Protection Recommendations: Move requirement "Operator shall have visibility..." to section 3.7.2.1. Benefits: Better requirements traceability, better proposal	Recommendation has been incorporated. The MSV Specification section 3.7.2.2 has been updated.
99	Attachment 1 MSV Spec	3.7.2.4	111. FTTS MSV Performance Specifications, 3.7.2.4 Crew Restraint System Recommendation: Add - Type 2 seatbelts per FMVSS 208 in all seat locations. Benefits: Increase occupant protection	It is up to the proposer to determine the type of restraint system that is needed to meet the requirements.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
100	Attachment 1 MSV Spec	3.7.2.13	112. FTTS MSV Performance Specifications, 3.7.2.13 Stowage Question: Is government saying that they wish for provisions to be made such that BII will not rest on the bottom of the box and it will not obstruct drain holes? Recommendations: Clarify requirement statement	Section 3.7.2.13 has been updated in the MSV Specification. "will not rest at the bottom of the box" has been deleted.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
101	Attachment 1 MSV Spec	3.10.1.1	113. FTTS MSV Performance Specifications, 3.10.1.1 Fuels and Lubricants Recommendation: Oils shall meet EPA emissions requirements for the year of manufacture.	The engine has to meet the EPA requirements in the year of manufacturing. See section 3.2.1.17 Emissions.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
102	Attachment 1 MSV Spec	3.10.1.1	114. FTTS MSV Performance Specifications, 3.10.1.1 Fuels & Lubricants Recommendation: Add - Engine shall be serviced with organic acid technology coolant conforming to spec CEMS B-1, Type III and water in equal parts by volume. The coolant shall have a drain interval of 300,000 miles or 5 years. Reasons: Conform to overall durability requirements of the vehicle; reduce maintenance cost and inventory of OAT. Benefit: Coolant is commercially available, extend maintenance intervals and reduce maintenance time.	We will not define the coolant change interval. It is up to the proposer to determine the change intervals for all fluids and lubricants, while meeting PMC, PMCS and overall maintenance requirements.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
103	Attachment 1 MSV Spec	3.10.1.2	115. FTTS MSV Performance Specifications, 3.10.1.2 Vehicle Lubrication Recommendation: Revise single fluid shall be used for all lubrication and hydraulic applications. TO: Two fluids (objective), three fluids (threshold) shall be used for all lubrication and hydraulic applications. Reasons: Currently suppliers of axles recommend an axle lube with extreme pressure additives, which are not available in diesel engine oils. We anticipate that engine oils will change significantly for future emission requirements, which will make them not acceptable for other applications. Potential that synthetics and newer oils will not comply with Mil PRF 2104 yet required to meet emission requirements. Benefit: Components to meet RAM & D requirements.	The specification has been revised to state: two fluids (threshold) and single fluid (objective) excluding grease.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
105	Attachment 1 MSV Spec	3.10.9.1/3.1.4.3	117. FTTS MSV Performance Specifications, 3.10.9.1 Engine Arctic Kit Recommendations: Change defrost requirement found in section 3.1.4.3 from 1 hour to 15 minutes. Benefits: Safety improvement, improved specification.	Section 3.10.9.1 of the MSV Specification requires 15 minutes as the objective and 1 hour threshold. Section 3.1.4.3 states that 45 minutes threshold 20 minutes objective after the vehicle has been started.
106	Attachment 1 MSV Spec	3.10.14.6	118. FTTS MSV Performance Specifications, 3.10.14.6 Air Cleaner Recommendations: Add - Air cleaner restriction indicator shall be electronic and estimate end of life. Reasons: Technology exists to implement such capability. Benefits: Improved vehicle status information to the warfighter on a high maintenance item.	This is one design approach; however, Specification states requirements not solutions. We will not specify the method for the indicator.
107	Attachment 1 MSV Spec	3.10.14.6	119. FTTS MSV Performance Specifications, 3.10.14.6 Air Cleaner Recommendation: Increase minimum dust capacity to 200 hrs. Benefit: Currently available, reduce maintenance actions and cost of replacement.	Section 3.10.14.6 of the MSV specification has been updated.
108	Attachment 1 MSV Spec	3.10.14.12	120. FTTS MSV Performance Specifications, 3.10.14.12 Steering Recommendation: Add new requirement for an electronic "key" for engine start, which can optionally be enabled or disabled by maintainers to supplement padlock or replace it. Reason: Padlocks are easily bypassed and electronic key can be suited to mission needs.	This is not currently a requirement.
109	Attachment 2 UV spec	3.1.4.1	121. FTTS UV 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	Section 3.1.4.1 of the UV specification has been updated per recommendation.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
119	Attachment 2 UV spec	3.5.4.1.9	131. FTTS UV Performance Specifications, 3.5.4.1.9 Reporting Question: Assume the intent of this report is to have a message at most one second long which contains the information identified in section (a) through (f). Please verify. Reasons: Clarification of requirement	The FTTS proposers are only required to address the interface requirements for the C4ISR suite. The power, space claim and thermal loads are provided in the MSV Specification Section 3.5.1.7. All other C4ISR requirements are for objective performance modeling and informational purposes.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
127	Attachment 2 UV spec	3.6.2.3	139. FTTS UV Performance Specifications, 3.6.2.3 Maintenance Ratio - Maintenance Man-Hours per Operating-Hour Recommendations: Add a requirement to the PMCS to report to the driver the GVW and GCW of the loaded vehicle and trailer to within TBD lbs. Reasons: Clarification of requirement Benefits: Allows operator to determine whether vehicle will meet mission weight restrictions such as applicable local laws for vehicle load weights without having to have scale facilities available.	The requirement for automatic weight calculation can be found in section 3.4.1.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
128	Attachment 2 UV spec	3.6.2.10.1	140. FTTS UV Performance Specifications, 3.6.2.10.1 Prognostics Recommendations: In addition to component prognostics, we would recommen d that the government add prognostics for other factors such as: a.) Air compressor prognostics/diagnostics - monitor & detect reduced compressor output, detect improper governor operation b.) Automated battery state-of-charge detection c.) Automated battery capacity detection d.) Tire tread wear detection e.) High accuracy fuel level measurement with fuel leakage/theft detection and re-fueling monitoring f.) Fuel filter s tate-of-health and end-of-life prediction g.) Fuel gelling warning h.) Engine oil condition i.) Axle oil contamination (water) detection j.) Transmission fluid contamination (water) detection Reasons: Fluid condition is precursor detection to prevent damage to components that would shorten component life and battery condition may be important to warfighter in completing his/her mission beyond the concern for the failure of the component. Benefits: Better product more suited to warfighters' needs, eliminate need for oil analysis.	It is up to the proposer to define the overall prognostics and diagnostics approach for the system offered. Vehicle architecture and system design will determine the level of diagnostics and prognostics required to assure all RAM requirements are met. The government will not define individual components.

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129	Attachment 2 UV spec	3.6.2.10.2	141. FTTS UV Performance Specifications, 3.6.2.10.2 Diagnostics Question: In the governments view, what is the meaning of "Integrated diagnostics will support mean corrective maintenance time parameters?". Is this a requirement to report MCMT, to improve it over systems without it or some other definition? Is there any requirement to validate meeting this requirement? Recommendations: Clarify per questions	The sentence referring to "Integrated diagnostics will support mean corrective maintenance time parameters" has been removed from the UV Performance Specification.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
130	Attachment 2 UV spec	3.6.4.2	142. FTTS UV Performance Specifications, 3.6.4.2 Service Life Recommendations: Add - Parts availability to North America logistics support bases within 24 hours of request receipt 7 days a week. Reason: Increased availability. Benefits: Reduced parts warehousing and inventory.	The government will not incorporate the recommended language. Section 3.6.4.2 does not address parts support as questioned.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
131	Attachment 2 UV spec	3.6.4.2	143. FTTS UV Performance Specifications, 3.6.4.2 Service Life Question: When will the government supply the percentages referenced in section (a)-(d) or is this to be determined as part of the M&S activities? Reasons: Clarify requirements	This has been updated in the UV Specification through a revised OMS/MP to reflect usage rates. It is a 10%High, 15% Medium, 50% low OPTEMPO and 25% idle.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
132	Attachment 2 UV spec	3.6.4.2	144. FTTS UV Performance Specifications, 3.6.4.2 Service Life Question: Where does a bidder find technical definitions of the various levels of OPTEMPO?	The various levels of OPTEMPO shall be defined in the MSV and UV specifications.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
134	Attachment 2 UV spec	3.7.2.2	146. FTTS UV 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.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
135	Attachment 2 UV spec	3.7.2.2	147. FTTS UV Performance Specifications, 3.7.2.2 Crush Protection Recommendations: Move requirement "Operator shall have visibility..." to section 3.7.2.1. Benefits: Better requirements traceability, better proposal	Recommendation has been incorporated. The UV Specification section 3.7.2.2 has been updated.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
136	Attachment 2 UV spec	3.7.2.13	148. FTTS UV Performance Specifications, 3.7.2.13 Stowage Question: Is government saying that they wish for provisions to be made such that Bill will not rest on the bottom of the box and it will not obstruct drain holes? Recommendations: Clarify requirement statement	Section 3.7.2.13 has been updated in the UV Specification. "will not rest at the bottom of the box" has been deleted.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
137	Attachment 2 UV spec	3.10.1.1	149. FTTS UV Performance Specifications, 3.10.1.1 Fuels & Lubricants Recommendation: Oils shall meet EPA emissions requirements for the year of manufacture.	The engine has to meet the EPA requirements in the year of manufacturing. See section 3.2.1.15 Emissions.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
138	Attachment 2 UV spec	3.10.1.1	150. FTTS UV Performance Specifications, 3.10.1.1 Fuels & Lubricants Recommendation: Add - Engine shall be serviced with organic acid technology coolant conforming to spec CEMS B-1, Type III and water in equal parts by volume. The coolant shall have a drain interval of 300,000 miles or 5 years. Reasons: Conform to overall durability requirements of the vehicle; reduce maintenance cost and inventory of OAT. Benefit: Coolant is commercially available, extend maintenance intervals and reduce maintenance time.	We will not define the coolant change interval. It is up to the proposer to determine the change intervals for all fluids and lubricants, while meeting PMC, PMCS and overall maintenance requirements.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
139	Attachment 2 UV spec	3.10.1.2	151. FTTS UV Performance Specifications, 3.10.1.2 Vehicle Lubrication Recommendation: Revise single fluid shall be used for all lubrication and hydraulic applications. TO: Two fluids (objective), three fluids (threshold) shall be used for all lubrication and hydraulic applications. Reasons: Currently suppliers of axles recommend an axle lube with extreme pressure additives, which are not available in diesel engine oils. We anticipate that engine oils will change significantly for future emission requirements, which will make them not acceptable for other applications. Potential that synthetics and newer oils will not comply with Mil PRF 2104 yet required to meet emission requirements. Benefit: Components to meet RAM & D requirements.	The specification has been revised to state: two fluids (threshold) and single fluid (objective) excluding grease.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
140	Attachment 2 UV spec	3.10.14.6	152. FTTS UV Performance Specifications, 3.10.14.6 Air Cleaner Recommendations: Add - Air cleaner restriction indicator shall be electronic and estimate end of life. Reasons: Technology exists to implement such capability. Benefits: Improved vehicle status information to the warfighter on a high maintenance item.	This is one design approach; however, Specification states requirements not solutions. We will not specify the method for the indicator.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
141	Attachment 2 UV spec	3.10.14.6	153. FTTS UV Performance Specifications, 3.10.14.6 Air Cleaner Recommendation: Increase minimum dust capacity to 200 hrs. Benefit: Currently available, reduce maintenance actions and cost of replacement.	Section 3.10.14.6 of the UV specification has been updated.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
142	SOW	C.5.3/C.1.2.1	154. Section C: DRAFT SOW: Paragraph: C.5.3: Conditional requirements ("may") for performing conducting "...present projected capabilities that could be provided in 2010 timeframe..." by CDR appears to be in conflict with paragraph C.1.2.1 (Design Approach) and subparagraphs requiring both "threshold and objective...trade-off analysis and studies".	The Government does not see a conflict between C.5.3 and C.1.2.1. In C.1.2.1. the contractor is required to address the requirements of Attachments 1 & 2 (threshold and objective). The subparagraphs require him to conduct the minimum number of analyses in developing and assessing his design(s). At the CDR (C.5.3), the contractor is required to present the results of his analyses and the requirements/performance he estimates the demonstrators will meet. C.5.3. also states that the contractor "may" present projected capabilities of their design possible for 2010 as a point of reference close to estimated production requirements to support the UA. The Gov't desires this information to gage how the contractor expects their demonstrator performance (2006) to relate to projected performance for a specific production date (2010). The 2010 date may or may not coincide with meeting any of all of the Objective Performance requirements.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
154	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.5.2	166. Item Number: 3.2.1.5.2 Performance Spec: Parking Brakes MSV: 30%, UV: 30% Comment: Grade requirements are 60%, shouldn't the parking brake requirement also be 60%?	The 60% requirement applies to service brakes. The 30% requirement applies to emergency brakes and parking brakes.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
155	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.5.3	167. Item Number: 3.2.1.5.3 Performance Spec: Emergency Brakes MSV: 530 ' for 50 mph 30%, UV: 88' for 50 mph 30% Comment: Grade requirements are 60%, shouldn't the emergency brake requirement also be 60%?	The 60% requirement applies to service brakes. The 30% requirement applies to emergency brakes and parking brakes.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
156	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.7.1	168. Item Number: 3.2.1.7.1 Performance Spec: Ride 6 watts MSV: 55 mph on 1.38 rms etc, UV: 30 mph on 1.0 rms Comment: The MSV requirement demands extremely large suspension travel an active suspension management.	The MSV & UV Performance Specifications have been revised.

<i>ID</i>	<i>Docurnent</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
157	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.7.2	169. Item Number: 3.2.1.7.2 Performance Spec: ½ round at <2.5 g MSV: 8" at 40 mph etc, UV: 8" at 15 mph etc Comment: The MSV requirement demands extremely large suspension travel an active suspension management.	The MSV & UV Performance Specifications have been revised.
158	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.10.1	170. Item Number: 3.2.1.10.1 Performance Spec: Grade Requirements, MSV: 60% UV: 60% Comment: Grades exceed parking brake and emergency braking capability.	The 60% requirement applies to service brakes. The 30% requirement applies to emergency brakes and parking brakes.
159	Attachment 1 MSV spec/Attachment 2 UV spec	3.9.5.1.2	171. Item Number: 3.9.5.1.2, MSV: Trailer Self propelled and autonomous UV: Self propelled and autonomous Comment: Ancillary projects have been performed in hybrid electric, autonomous vehicle, lightweight structures and other technical areas that would be of great assistance to accelerating FTTS. Will the government provide access to technical information from these projects (reports, models, testing results, recommendations) during the RFQ process?	Specific information may be provided after award if available and releasable.
167	Attachment 1 MSV Spec	3.2.2.1	179. FTTS MSV Performance Specification: 3.2.2.1 Range. Taking the worst/test case here with range/tank capacities the acceptable MPG can vary from 3.75 MPG to 15 MPG Is such a wide variance what is meant?	The 3.75 MPG is the threshold value and the 15 MPG is the objective and that is the reasoning behind the range. This refers to the 600 mi range and 160 gallon fuel tank (threshold) and then the 900 mile range and the 60 gallon fuel tank.
174	Attachment 1 MSV Spec	3.7.2.10	186. FTTS MSV Performance Specification: 3.7.2.10 M4/M16 Rifle Mounting: Is it specifically necessary for the mounting if the rifles to be on the door, or can they be near the doors, easily accessible to personnel?	Currently, there is no requirement for mounting the rifles to the doors. The requirement states that they be easily accessible.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
176	Attachment 2 UV spec	1.2	188. FTTS UV Performance Specification: 1.2 General Description: "...Emphasis on lateral commonality with FCS..." - will the Govt. make system and component level data available to FTTS contractors to maximize commonality?	Specific information may be provided after award if available and releasable.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
183	Attachment 2 UV spec	3.2.1.9.2	195. FTTS UV Performance Specification: 3.2.1.9.2 Run-Flat Capability: Run flat inserts degrade tire life when operated at low CTIS settings. The impact of the internal tire surface with the run flat device typically destroys the tire carcass.	This requirement will remain the same.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
193	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.2.5.2	205. Reference: Attachment 1 (MSV), Page: 37, Paragraph: 3.6.2.5.2, Title: Scheduled Services. Reference: Attachment 2 (UV), Page: 37, Paragraph: 3.6.2.5.2, Title: Scheduled Services. Statement: The third sentence states: "Servicing shall be defined as cleaning and replacement of selected equipment." Elsewhere in the two Performance Specifications, there are references to lubrication manifolds. Lubrication tasks for non-lube-for-life components are expected to be specified at scheduled service intervals. Question: Should the quoted sentence be expanded to consider lubrication requirements?	Section 3.6.2.5.2 currently states cleaning, replacement, and maintenance. Lubrication falls under scheduled service maintenance. Also, lubrication is addressed in section 3.6.2.5.1 Preventive Maintenance Checks (PMC).

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
194	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.2.5.2	206. Reference: Attachment 1 (MSV), Page: 37, Paragraph: 3.6.2.5.2, Title: Scheduled Services. Reference: Attachment 2 (UV), Page: 37, Paragraph: 3.6.2.5.2, Title: Scheduled Services. Statement: The scheduled service interval is defined as 9,000 miles/3,000 operating hours/annual, whichever occurs first. As stated, the miles/operating hours relationship is an inordinately low 3 mph. Question: a) Is the relationship between miles and operating hours correct? b) Shouldn't the operating hours be lowered to reflect the weighted average vehicle speed over the mission profile?	A. No, the two are considered independent. The scheduled service interval will be required when 9000 miles or 3000 operating hours or annually, whichever occurs first. B. No because the OPTEMPO could reflect any of these situations. Hours of operation do not directly correlate to miles driven.

ID	Document	Paragraph/Section	Question/Comment	Answer/Update
195	Executive Summary/SOW	C.1.2.2.1.8/C.4.4.2/C.4.4.2.1	<p>207. Reference: FTTS Website, Page: N/A, Paragraph: Executive Summary Reference: Draft SOW (Section C), Page: 7, Paragraph: C.1.2.2.1.8, Title: Revised Contractor M&S. 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: Reviewing the solicitation strategy outlined in the Executive Summary in conjunction with the Draft Scope of Work, it appears that a decision on who will be selected and actually funded to produce MSV and UV variants for demonstration will not occur until sometime following the Critical Design Review (CDR). According to C.1.2.2.1.8, the CDR is scheduled 12 months after the initial contract awards. If Contract Award occurs on 28 May, 2004, as projected in the Executive Summary, the CDR will take place late May or early June 2005. Paragraph C.4.4.2 and C.4.4.2.1 describe a total of 8 demonstration units to be delivered in December 2005 followed by 18 additional demonstration units to be delivered in January of 2006. The problem with the schedule scenario above, is that there will be insufficient lead time to order material for the demonstration variant build if authorization and funding is not provided prior to June of 2005. Following the down-select for the demonstration build, sufficient lead time is needed to: 1) Complete the prototype design as only concept work appears to be funded during the first twelve months after contract award; 2) Obtain any necessary prototype tooling; and 3) Order/receive all material, assemble, and verify truck and trailer functionality before making the units available to the Government for their evaluation. Eighteen months from funding authorization to vehicle delivery may be the minimum practical. Question: a) Will consideration be given to resolving the schedule dilemma by extending the lead time for vehicle delivery following the CDR to 18 months? b) If extending the delivery date is not feasible, will the funding strategy be changed so that ACTD contract recipients are authorized and funded earlier in the program to start the hard design and order long lead tooling and material?</p>	<p>Quantities and schedule will be updated in final solicitation. Contractors shall be allowed to submit proposals on either the MSV or the UV or both.</p>

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
196	Executive Summary		<p>208. Reference: FTTS Website, Page: N/A, Paragraph Executive Summary: N/A Statement: The solicitation strategy outlined in the Executive Summary provides program funding guidance which indicates that approximately \$40M is available to fund this ACTD program. Approximately \$12M is earmarked to fund the M&S activity through the CDR and approximately \$24M is available to fund the detailed M&S and MUA demonstrators. The Executive Summary describes the intent to select "multiple contractors" to participate in the initial M&S, PDR, and CDR portion of the ACTD. Following a down select process, "one or more" of these contractors would be funded to do additional M&S, complete a detailed design, and build 26 demonstration units. Not only is there a considerable effort required for M&S, the four distinct platforms (MSV truck & trailer + UV truck & trailer) will entail a significant design effort and the demonstration units will likely be quite expensive to build given the technology required by the ACTD specification. At this juncture, it is conceivable that the \$40M that is available would only fund one contractor, or if more than one contractor were involved, not all of the 26 demonstration units would be able to be funded. Question: In the event the \$40M available would either restrict the number of contractor awards to one, or restrict the number of demonstrator units built to something less than 26, how would this be resolved within the scope of the ACTD competition?</p>	Quantities and funding will be updated in final solicitation. The government will make best value selections based on the proposals received.

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204	Attachment 1 MSV Spec	3.8.2.1.4	<p>216. Reference: Attachment 1 (MSV), Page: 47, Paragraph: 3.8.2.1.4, Title: Kinematic Configuration. Statement: "The manipulator component shall be operable while the FTTS MSV is carrying a secured, fully laden cargo platform on board." This sentence excludes a potentially faster, lower weight and more efficient solution in which a single manipulation system capable of performing both manipulation of individual palletized cargo and self-loading/unloading cargo platforms, containers, etc. With a single manipulation system, the manipulator would operate after the platform is unloaded to the ground. Unloading a platform from a current HEMTT LHS truck to ground takes less than 30 seconds. The unloading time is very short compared to manipulation time which consists of at least setting up outriggers, releasing tie-downs, turning end-effector to a pallet, putting manipulator into pockets, moving pallet onto new location, taking end-effector out of pockets, and tie-down. Therefore, the time to unload a platform could be relatively insignificant, and should be allowed before manipulator is in operation.</p>	Paragraph 3.8.2.1.4 has been deleted from the specification.

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210	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.10/3.5.11	222. Reference: Attachment 1 (MSV), Page: 33, Paragraph: 3.5.10, Title: Databus Connectors. Reference: Attachment 1 (MSV), Page: 33, Paragraph: 3.5.11, Title: Data Storage. Reference: Attachment 2 (UV), Page: 33, Paragraph: 3.5.10, Title: Databus Connectors. Reference: Attachment 2 (UV), Page: 33, Paragraph: 3.5.11, Title: Data Storage. □Statement: The connector pin quantity depends on how the pin out is configured in terms of signal traffic and other considerations. It could be 9 pins, 12 pins, or some other numbers of pins. 90 days of vehicle operation data could be overwhelming without providing more definition on the vehicle operational data required. Question: a) Why does the data bus connector need to be 9 pin, as long as it meets the SAE standard and Mil standard? b) What data types need to be stored for 90 days?	a) The reference to the number of pins for the connection has been deleted from Section 3.5.10 in both the MSV and UV Specifications b) Examples are stated in section 3.5.11 but not limited to what is stated in section 3.5.11.

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211	Attachment 1 MSV Spec	3.8.2.1.10	223. Reference: Attachment 1 (MSV), Page: 47, Paragraph: 3.8.2.1.10, Title: Overshoot. Statement: We understand that overshoot is not good for the system, but normally a time limit is also required to define the system performance responding to the inputs. In addition, for a vehicle hydraulic system, we do not necessarily need to input a "step signal", as other solutions are available that preclude heavy vibration. Question: a) What is the reason for having step response performance criteria? b) What is the allowed time limit for a step response?	Paragraph 3.8.2.1.10 has been deleted from the Specification.

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212	SOW	C.1.2.2.1.3.2	224. Reference: Draft SOW (Section C), Page: 5, Paragraph: C.1.2.2.1.3.2., Title: Concepts Analysis. Statement: This paragraph states "the Contractor shall use ProductView to create animations to provide greater visibility to key aspects of their designs." ProductView is one of many visualization tools used to support cost effective analysis of 2D and 3D design model information. Common animation protocols, such as .avi and .mpeg, can be generated by many different programs and tools other than ProductView. Specifying that the animations be generated in ProductView will limit what those animations can portray mostly to animations generated from solid modeling software (e.g. Pro/E, Catia, UG?). If the desire is to produce animations, animation requirements should be defined rather than a particular design tool specified. Question: Can animation requirements be defined vs. specifying a tool to generate animations to allow for better animation generation and submittals?	Paragraph C.1.2.2.1.3.2 in the SOW has been revised.

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215	Executive Summary		<p>227. Reference: FTTS Website, Page: N/A, Paragraph: Executive Summary Statement: The solicitation strategy outlined in the Executive Summary provides program funding guidance which indicates that approximately \$40M is available to fund this ACTD program. Approximately \$12M is earmarked to fund the M&S activity through the CDR and approximately \$24M is available to fund the detailed M&S and MUA demonstrators. At this juncture, it is conceivable that either the schedule available (demonstration units built by Dec 05), the \$40M of funding, or both could limit the scope of what is actually built by Dec 05. Various program briefings concerning the FTTS ACTD have indicated an expectation that the ACTD demonstration vehicles would represent 60% of the total FTTS capability. As there was no mention of this in the Executive Summary, one would have to conclude that the MUA demonstration units must be built with all of the MSV and UV capability defined within their respective performance specifications. Obviously there is a big difference between delivering a 60% capability and 100% in terms of cost, design effort, and material lead times. Question: Please clarify if MUA demonstration units are required to represent 60%, 80%, 100%, or some other percentage of the MSV and UV capability defined within their respective performance specifications. Assuming that the technology available to industry would allow all of the MSV and UV capability to be achieved, but program budget constraints and/or the short lead time between the down select following Critical Design Review and the December 05 MUA demonstration unit completion date would not permit a 100% capability to be demonstrated, how would this be factored into the proposal evaluations?</p>	This information will be provided at the start of work meeting.

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224	Attachment 1 MSV Spec	3.8.2.2/ HEMTT 3.12.6.2	<p>236. Reference: Attachment 1 (MSV), Page: 48, Paragraph: 3.8.2.2, Title: Platform Handling System. Statement: The encompassing requirement for the platform handling system is that it shall meet or exceed the current LHS interface capabilities and cycle time shall not exceed 3 minutes (threshold), 1 minute or less (objective). Correspondingly, the HEMTT spec which reads, on ATPD 2304-2001, 3.12.6.2, "The time for loading/unloading a FR, fully loaded, to or from the truck shall not exceed 1 minute." It is suggested that the 3 minute threshold requirement be deleted so that the FTTS MSV performs at least as good as current equipment. Question: Is it possible to reevaluate and/or eliminate the threshold requirement based on the performance of existing equipment?</p>	The specification shall remain the same because the FTTS MSV, unlike the HEMTT, is required to handle flatracks, container pallets and other partial loads. Combining ILHS with MHE operations may require additional time to reconfigure the loading mechanism.

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233	Attachment 1 MSV spec/Attachment 2 UV spec	3.2.1.1	245. Reference: Attachment 1 (MSV), Page: 14, Paragraph: 3.2.1.1, Title: Dash Speed. Reference: Attachment 2 (UV), Page: 14, Paragraph: 3.2.1.1, Title: Dash Speed. Statement: An acceleration requirement should be defined to include time between the individual events including braking time and wait time before the next acceleration event to fully capture and define this requirement. The current wording would allow for these 10 accelerations to be conducted within an infinite amount of time. Question: Can the Government please further define this test to include the total duration of the 10 accelerations, including detail on the braking time and wait time before the next acceleration is to take place?	The MSV Paragraph 3.2.1.1 has been updated to include a 30 second (threshold) 10 second (objective) interval between accelerations. The UV Paragraph 3.2.1.1 states 15 seconds (threshold) 5 seconds (objective) between runs.

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246	Attachment 1 MSV Spec	3.4.1	258. Reference: Attachment 1 (MSV), Page: 23, Paragraph: 3.4.1, Title: Weight Limitations. Statement: This paragraph states "?axle load of 13,000lb or a tire pressure of 100psi." It seems that this loading requirement should be a ground pressure vs a tire pressure. Question: Was it the intent of the Government to dictate a ground contact pressure for this loading requirement or a 100 psi tire inflation pressure?	The answer comes directly from the FCS Common Requirement: "The MGVs shall be ECC transportable by C-17- and C-130-profile aircraft at a weight no greater than 38,000 lb, and size suitable for transport as determined by USAF Aeronautical Systems Center Air Transportability Test Loading Agency (ATTLA) (threshold). The MGVs, if wheeled, shall not exceed at any time during loading or flight an axle load of 13,000 lb or a tire pressure of 100 psi. The MGVs, if tracked, shall not exceed 3,000 lb/in ft of track length in contact with the ground or 50 psi of ground pressure. Ground pressure shall be determined by dividing the load in each of the road wheels of the tracked vehicle by the area of the track pad directly under each road wheel."

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264	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.1.4	276. Reference: Attachment 1 (MSV), Page: 25-26, Paragraph: 3.5.1.4, Title: Embedded Readiness System. Reference: Attachment 2 (UV), Page: 25, Paragraph: 3.5.1.4, Title: Embedded Readiness System. Statement: The embedded readiness system shall be compatible with FCS, interface with C4ISR, and monitor systems including the crew and consumables, however, no technical information on the FCS or C4ISR systems is provided. Contractors must "provide required status reports," however, the specification does not provide requirements for what information is in the status reports. The Army may have a system in place for crew monitoring. If so, this may be a good solution to this requirement. Question: a) Please provide information on how to interface with FCS and C4ISR (hardware and software). B) What information is in the required status reports? c) Is there a system in place you wish us to use for monitoring the crew? If so, please provide hardware and software interface information.	A. Specific information will be provided after award as available and releasable. B&C. As additional Objective C4I becomes available it will be provided.

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267	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.2.3	279. Reference: Attachment 1 (MSV), Page: 27, Paragraph: 3.5.2.3, Title: En Route Mission Planning & Rehearsal System. Reference: Attachment 2 (UV), Page: 27, Paragraph: 3.5.2.3, Title: En Route Mission Planning & Rehearsal System. Statement: The information system is required to integrate into the EMPRS, however, no technical information on EMPRS was provided. Question: Will information be provided on how to communicate with the EMPRS (message specification)?	Specific information will be provided after award as available and releasable. Minimum C4I requirements for the MSV & UV demonstrators are located in Attachment #3.

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272	Attachment 1 MSV spec/Attachment 2 UV spec	3.5.14	284. Reference: Attachment 1 (MSV), Page: 33, Paragraph: 3.5.14, Title: Identifying Friend or Foe (IFF) Devices. Reference: Attachment 2 (UV), Page: 33, Paragraph: 3.5.14, Title: Identifying Friend or Foe (IFF) Devices. Statement: FTTS must provide CID of friend or unknown, however, no technical information on the IFF or CID was provided. Question: Will information on the IFF and CID data to be transmitted be provided?	Specific information will be provided after award as available and releasable. Minimum C4I requirements for the MSV & UV demonstrators are located in Attachment #3.

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273	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.2.1	285. Reference: Attachment 1 (MSV), Page: 35, Paragraph: 3.6.2.1, Title: Automation. Reference: Attachment 2 (UV), Page: 35, Paragraph: 3.6.2.1, Title: Automation. Statement: No technical information on STAMIS was provided. Question: Will technical information on the STAMIS network communications linkage capability be made available with or prior to the ACTD Solicitation release?	Information on STAMIS can be found on: http://www.quartermaster.army.mil/oqmg/Professional_Bulletin/1996/Winter/stam.html

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275	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.2.10.1	287. Reference: Attachment 1 (MSV), Page: 38, Paragraph: 3.6.2.10.1, Title: Prognostics. Reference: Attachment 2 (UV), Page: 38, Paragraph: 3.6.2.10.1, Title: Prognostics. Statement: Developing accurate prognostics requires a large database of information. To gather this information would require extensive run time on a number of trucks (such as 20). Some trucks would need to be run the equivalent of a lifetime in a variety of conditions (terrain and weather) while gathering data. Gathering the data necessary for prognostics will require multiple vehicles running for an extended period. Question: a) Please advise how the Government anticipated that they or the contractor would gather the necessary operational data to support the prognostics capability for parts that are new to the ACTD vehicles. b) Will component bench test or vehicle test time be built into the program schedule to accommodate this need?	Upcoming failures of components/LRU/SRUs that are identified through a prognostic system will not be scored as failures during testing. A&B. It is up to the proposer to determine how to meet the requirement.

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276	SOW	C.1.2.2.1.7	288. Reference: Draft SOW (Section C), Page: 7, Paragraph: C.1.2.2.1.7., Title: Logistics Demonstration (LOG DEMO) Task Analysis. Statement: The SOW requires the system to provide intrusive diagnostics that interface and interact with the weapon system sensors. Question: a) Can the Government provide detailed information on the weapon system sensors? B) How does the Government intend for the vehicle systems to interface with the weapon system sensors? c) How are electrical connections and messaging software expected to relate?	Paragraph C.1.2.2.1.7 has been removed from the SOW.

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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 Paragraphs in both the MSV and UV Performance Specs have been updated.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
290	Attachment 1 MSV Spec	3.4.1	302. Reference: Attachment 1 (MSV), Page: 23, Paragraph: 3.4.1, Title: Weight Limitations. Statement: This paragraph requires the an up-armored MSV to be able to transport 6 tons of payload/flatrack on a C-130 without exceeding either a maximum shipping weight of 18.1 short tons and a individual axle limit of 13,000 lbs. It should be noted that the additional weight of the required arm or would make the feasibility of a single front axle impossible. This also assumes that the vehicle and payload would not exceed the projected height limits of MIL-STD-1791 while entering/exiting the aircraft. This also assumes that there is adequate restraint that can be applied between the vehicle and the dismountable cargo platform (flatrack) so the restraint criteria of MIL-STD-1791 are met. Question: a) Does this requirement permit the removal of optional kits, whip antennas, or limit the amount of crew equipment stored in the cab of the vehicle? b) If due to required axle loads/weight balance it is not possible to transport the desired payload due to projected height or the need to redistribute the payload on the cargo deck, will these types of air transport preparation steps be allowed to meet the requirement?	Section 3.4.4.2 states, "The FTTS MSV and its payload shall not require more than 15 total minutes by the operator with on-board tools and equipment to prepare for embarkation or debarkation on any form of transport (air, land, or sea) (threshold), 0 minutes/no tools (objective)."

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300	Attachment 1 MSV spec/Attachment 2 UV spec	3.6.2.9	312. Reference: Attachment 1 (MSV), Page: 38, Paragraph: 3.6.2.9, Title: Filters. Reference: Attachment 2 (UV), Page: 38, Paragraph: 3.6.2.9, Title: Filters. Statement: This paragraph requires that the filters used for water, fuel, oil, hydraulic, NBC, and air are required to be readily accessible and have a 2-year service life. There is to be a system or systems present to monitor the health of the filters. Some of these filters such as water, NBC, and hydraulic either should not or cannot be cleaned and reused for safety/heath or potential equipment damage reasons. It s hould also be noted that oils contaminating a filter may not be compatible with the fluid it is being replaced by. Question: a) Is it the intent that some or all of the filters may be removed, cleaned and reused to achieve the required 2-year service life? b) If a component manufacturer, such as an engine, will not permit the filter to be cleaned/reused repeatedly, due to a violation of warranty or concern about effectiveness, can relief be granted on a case-by-case basis?	A. Yes. Filters can be reused/ cleaned, when appropriate. B. The requirement will remain the same.

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305	Attachment 1 MSV Spec	3.8.2.1.5	317. Reference: Attachment 1 (MSV), Page: 47, Paragraph: 3.8.2.1.5, Title: Payload Capacity and Reach. Statement: The magnitude of the required/des ired payloads and reach requirements will dictate a large crane that will require additional stabilization (outriggers). Question: a) Is there a reason to move the vehicle when there is a suspended load? b) Given the application that it can be used; will this device need to be certified to all relevant crane standards? c) Can the nature of the 6,000 lb (thres hold) and 10,000 lb (objective) loads be defined? d) Can a matrix of operationally required lifts versus reach distance be defined so that contractors can better understand the requirement and optimize the crane lift solution?	A. No. B. The Contractor shall comply with all crane standards referenced in the MSV and UV Specifications. Specifically STANAG 2413, STANAG 2413 Demountable Load Carrying Platforms (DLCP/ Flatrack), American Society of Mechanical Boom Cranes (ASME) ASME B30.22 Articulating Boom Cranes. C. 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 reach (threshold), >= 23 ft reach (objective). D. Additional technical requirements are not available at this time.

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307	Attachment 1 MSV spec/Attachment 2 UV spec	3.9.3	319. Reference: Attachment 1 (MSV), Page: 51, Paragraph: 3.9.3, Title: Dimensions. Reference: Attachment 2 (UV), Page: 48, Paragraph: 3.9.3, Title: Dimensions. Statement: The interface required to transport flatracks or ISO containers is radically different from that which is needed to handle a 463L pallet. The flatrack can be supported by its main rails or lower corner fittings. The ISO container/shelter must be supported by its lower corner fittings. Either rollers or a flat deck must be provided on the trailer to prevent damage on the pallet. To not violate the transportation width limitations, the HCU-6/E pallets must be positioned with the 88" dimension laterally so no more than two could be transported at a time on the trailer. Question: a) Given the capacity of the cargo tie downs on a 463L pallet, does a rail lock system need to be provided on the trailer? b) Does the trailer need to permit rotation of the pallet via omni directional rollers? c) Given the height variation between aircraft floors, will transfer of a pallet to/from the trailer only occur from a 25K/40K/60K loader?	A) No, a rail lock system is not needed on the trailer. B) The proposer will be required, during some loading operations, to rotate the 463L pallet for highway transport. C) No, it is the Governments intent to directly unload from the C-130 to the MSV. The government acknowledges there are technological and doctrinal challenges to unloading a C-130.

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316	Attachment 1 MSV Spec	3.2.1.6	328. Reference: Attachment 1 (MSV), Page: 16, Paragraph: 3.2.1.6, Title: Terrain. Statement: The Terrain requirement for the MSV states that: "The vehicle single pass vehicle cone index (VCI-1) for mud/sand/snow shall have a value no greater than 25 ?" It should also be noted that this specification is substantially lower than the heavy fleet vehicle that the MSV replaces. VCI capability is primarily a function of vehicle weight, weight distribution, and tire size. Weight must either go down or tire/wheel size go up to reduce VCI. Considering the extreme weight limitations for the MSV which are driven by the transport weight requirements of paragraph 3.4.1, the transport threshold weight would equate to 28,200 lbs. The design needs to minimize weight for transport reasons, while maximizing tire size for performance reasons, are at odds with each other. From preliminary work, it appears that a VCI-1 of 25 is unachievable even if the curb weight of the MSV is 28,200lbs and the weight is perfectly optimized across tires appropriately sized for the vehicle for all other performance criteria. Question: a) Can the rationale for establishing a significantly more aggressive VCI requirement than the current HEMTT be provided? b) For consistency with the current Army heavy fleet, which has excellent soft soil mobility, can a VCI requirement of 30 (threshold) and 27 (objective) be considered.	A) The rationale is since the FTTS has to resupply the FCS, the FTTS must meet the FCS requirement of VCI-1 no greater than 25. B) No. The specification will remain the same.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
317	Attachment 1 MSV spec/Attachment 2 UV spec	3.9.5.1.3.2/2.2/3.2.1.4	329. Reference: Attachment 1 (MSV), Page: 52, Paragraph: 3.9.5.1.3.2, Title: Military & FMVSS Compliance. Reference: Attachment 2 (UV), Page: 49, Paragraph: 3.9.5.1.3.2, Title: Military & FMVSS Compliance. Reference: Attachment 1 (MSV), Page: 6-7, Paragraph: 2.2, Title: Other Government Documents, Drawings, and Publications. Reference: Attachment 2 (UV), Page: 6-7, Paragraph: 2.2, Title: Other Government Documents, Drawings, and Publications. Reference: Attachment 1 (MSV), Page: 14, Paragraph: 3.2.1.4, Title: Approach & Departure Angles. Reference: Attachment 2 (UV), Page: 14, Paragraph: 3.2.1.4, Title: Approach & Departure Angles. Statement: The paragraph requires the MSV Companion Trailer (MSV CT) to meet current military and FMVSS requirements. There are two FMVSS requirements 223 (Rear Impact Guards) & 224 (Rear Impact Protection) and FMCSR 393.86 that would be applicable to new trailers/semi-trailers produced. The intent of these standards is to prevent vehicles from passing under the rear of the trailer and causing injury or deaths as a result of an accident. Question: a) Is FMVSS 223/224 & FMCSR 393.86 applicable to the MSV CT? b) If FMVSS 223/224 & FMCSR 393.86 is applicable to the MSV CT, will paragraph 2.1 be revised to incorporate these additional standards? c) If the required components of the rear impact protection degrade the angle of departure (ref paragraph 3.2.1.4), and restrict tactical mobility, which requirement takes precedence?	Reference 3.9.5.1.3.2 A) Yes, these new (current) requirements are applicable. B) Yes. Section 2.2 will be revised. Section 2.1 as identified in the question does not contain any FMVSS/FMCSR references. C) The Minimum angle of departure requirement is defined and the government will not specify design approach.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
318	Attachment 1 MSV spec/Attachment 2 UV spec	1.0/3.4.1	330. Reference: Attachment 1 (MSV), Page: 2, Paragraph: 1.0, Title: Scope. Reference: Attachment 2 (UV), Page: 2, Paragraph: 1.0, Title: Scope. Statement: Paragraph 3.4.1 places an extremely challenging weight limitation on the MSV which not only will drive cost, but will also necessitate performance tradeoffs to be considered and configuration compromises to potentially be made. To accomplish this aspect of the design, contractors will need some form of performance criteria ranking to use as guidance for these configuration decisions. If everything currently specified for the MSV threshold vehicle will not allow the MSV threshold weight to be achieved, a listing of features in descending order of importance will enable contractors to optimize the vehicle to best meet the Army's needs. This will help ensure that critical performance criteria will, in no way, be compromised at the expense of some less critical feature. Question: Will the final solicitation be able to include a listing of features in descending order of importance based on mission requirements to guide industry in their design tradeoff decision process?	Yes, a priority matrix will be provided with the final ACTD solicitation release.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
319	Attachment 2 UV spec	3.2.1.7	<p>3.2.1.7 Ride Quality. The FTTS UV shall meet the ride quality requirements at curb weight and GVW. 3.2.1.7.1 Ride limiting speeds. The FTTS-UV, at any load condition from empty (plus driver) to fully loaded (plus two man crew), shall obtain no more than 6 W (3.5 W objective) average absorbed power at the base of any crew member station seat as well as the entire cargo compartment of the FTTS-UV and its companion trailer. The latter load conditions and average absorbed power shall be at the speeds and terrain profiles described in the Ride Limiting Speeds Table, below: with the tires at normal tire pressure (cross-country tire pressure, if equipped with a Central Tire Inflation System [CTIS]). 6-Watt speeds (MPH) Ride Limiting Speeds US imperial units (RMS) SI units (RMS) Digitized NRMM Course55 mph at 1.38 in, 88.5 kph at 3.5 cm, FTKN 12 A)45 mph at 1.50 in 72.0 kph at 3.8 cm 35 mph at 1.73 in, 56.0 kph at 4.4 cm, LET5*RT) 25 mph at 2.20 in, 40.0 kph at 5.6 cm, APG course29) 20 mph at 2.50 in, 32.0 kph at 7.8 cm, 15 mph at 3.48 in, 24.0 kph at 8.8 cm, LET # 7 RT)10 mph at 3.68 in, 16.0 kph at 9.3 cm 5.0 mph at 3.88 in, 8.0 kph at 9.6 cm 3.2.1.7.2 Cross-Country. FTTS-UV must be capable of sustained cross-country travel at 80% (100% objective) of the speeds and on the terrain's indicated in the Ride Limiting speeds above. 3.2.1.7.3 Cross Country Dash Speed. FTTS-UV must be capable of cross-country dash speed at 125% (150% objective) of the speeds and on the terrain's indicated in the Ride Quality Table while not exceeding 12 W average absorbed power at the base of any crewmember station seat as well as the entire cargo compartment of the FTTS-UV and its companion trailer.</p>	The Specification has been updated. The additional comments will not be incorporated.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
320	Attachment 2 UV spec	3.2.1.16	<p>3.2.1.16.5 Extended Electrical Capability/Capacity. When applicable, vehicle power generation and management shall be provided to power weapons systems, Army Battle Command System (ABCS), and/or support systems and to recharge MWSS equipment by providing at least 50 kilowatts (kW) (Threshold) (80kW Objective) of AC for internal and external operational power demands. Cost of kits, upgrades and distribution systems shall be born by the program for the associated weapon or support system. 3.2.1.16.2 Energy augmentation. The FTTS-UV shall have the capability of capturing vehicle kinetic energy by re-generative means & re-directing that energy to the vehicles bus system. 3.2.1.16.3 Average Energy Consumption. The FTTS-UV total suspension losses (for all wheels, including shock absorbers, springs, bushings, etc.) shall not exceed 15 kW (10 kW objective) at the speeds and terrain profiles contained in the ride quality table.</p>	Section 3.2.1.16 in the Spec has been updated. The additional comments will not be incorporated.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
321	Attachment 2 UV spec	3.4	<p>3.4 Transportability The FTTS UV and its CT shall be.....Inratheater operational maneuver. As an objective, the vehicle must address height management during vehicle transportation, where the vehicle could be lowered or raised through its entire range of suspension travel within a period of 5 to 10 seconds and maintain at any level. No paragraph for this heading in the performance spec. Vehicle Control Enhancement. The FTTS-UV shall include active and passive vehicle control enhancements (e.g., integrated seat and restraint systems, improved brakes, traction control and suspensions etc.) that provide for maximum control of the vehicle during the full range of vehicle mission profile to include off-road use and emergency conditions. These enhancements shall also allow the FTTS-UV to exhibit safe stability and handling characteristics at all speeds, up to and including maximum speed, during normal and emergency lane change maneuvers. No paragraph for this heading in the performance spec.</p> <p>□</p> <p>Safety and Handling: The FTTS-UV must be controllable and safe for operation during turns that result in sustained and transient lateral accelerations experienced at the vehicle CG of more than 0.5 g (0.7-g objective).</p>	Section 3.4 in the Spec has been updated. The additional comments will not be incorporated.

<i>ID</i>	<i>Document</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
322	Attachment 1 MSV Spec	3.2.1.7	<p>3.2.1.7 Ride Quality. The FTTS MSV shall meet the ride quality requirements at curb weight and GVW. 3.2.1.7.1 Ride Limiting Speed. The FTTS-MSV, at any load condition from empty (plus driver) to fully loaded (plus two man crew), shall obtain no more than 6 W (3.5 W objective) average absorbed power at the base of any crew member station seat as well as the entire cargo compartment of the FTTS- MSV and its companion trailer. The latter load conditions and average absorbed power shall be at the speeds and terrain profiles described in the Ride Limiting Speeds Table, below: with the tires at normal tire pressure (cross-country tire pressure, if equipped with a Central Tire Inflation System [CTIS]). 6-Watt speeds (MPH) Ride Limiting Speeds US imperial units (RMS) SI units (RMS) Digitized NRMM Course 55 mph at 1.38 in, 88.5 kph at 3.5 cm, FTKN 12 A) 45 mph at 1.50 in 72.0 kph at 3.8 cm, 35 mph at 1.73 in, 56.0 kph at 4.4 cm LET5*RT) 25 mph at 2.20 in, 40.0 kph at 5.6 cm, APG course29) 20 mph at 2.50 in, 32.0 kph at 7.8 cm, 15 mph at 3.48 in, 24.0 kph at 8.8 cm, LET# 7 RT) 10 mph at 3.68 in 8.0 kph at 9.6 cm , 3.2.1.7.2 Cross-Country. The FTTS-MSV must be capable of sustained cross-country travel at 80% (100% objective) of the speeds and on the terrain's indicated in the Ride Limiting speeds above. 3.2.1.7.3 Cross Country Dash Speed. The FTTS-MSV must be capable of cross-country dash speed at 125% (150% objective) of the speeds and on the terrain's indicated in the Ride Quality Table while not exceeding 12 W average absorbed power at the base of any crewmember station seat as well as the entire cargo compartment of the FTTS- MSV and its companion trailer.</p>	Section 3.2.1.7 in the Spec has been updated. The additional comments will not be incorporated.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
323	Attachment 1 MSV Spec	3.2.1.18	3.2.1.18.5 Extended Electrical Capability/Capacity. When applicable, vehicle power generation and management shall be provided to power weapons systems, Army Battle Command System (ABCS), and/or support systems and to recharge MWSS equipment by providing at least 50 kilowatts (kW) (Threshold) (80kW Objective) of AC for internal and external operational power demands. Cost of kits, upgrades and distribution systems shall be born by the program for the associated weapon or support system. 3.2.1.18.2 Energy augmentation. The FTTS-MSV shall have the capability of capturing vehicle kinetic energy by re-generative means & re-directing that energy to the vehicles bus system. 3.2.1.18.3 Average Energy Consumption. The FTTS-MSV total suspension losses (for all wheels, including shock absorbers, springs, bushings, etc.) shall not exceed 30 kW (25 kW objective) at the speeds and terrain profiles contained in the ride quality table.	Section 3.2.1.18 in the S pec has been updated. The additional comments will not be incorporated.

<i>ID</i>	<i>Docurment</i>	<i>Paragraph/Section</i>	<i>Question/Comment</i>	<i>Answer/Update</i>
324	Attachment 1 MSV Spec	3.4	3.4 Transportability The FTTS MSV and its CT shall be.....Intratheater operational maneuver. As an objective, the vehicle must address height management during vehicle transportation, where the vehicle could be lowered or raised through its entire range of suspension travel within a period of 5 to 10 seconds and maintain at any level. No paragraph for this heading in the performance spec. Vehicle Control Enhancement. The FTTS-MSV shall include active and passive vehicle control enhancements (e.g., integrated seat and restraint systems, improved brakes, traction control and suspensions etc.) that provide for maximum control of the vehicle during the full range of vehicle mission profile to include off-road use and emergency conditions. These enhancements shall also allow the FTTS-MSV to exhibit safe stability and handling characteristics at all speeds, up to and including maximum speed, during normal and emergency lane change maneuvers. No paragraph for this heading in the performance spec. <input type="checkbox"/> Safety and Handling: The FTTS-MSV must be controllable and safe for operation during turns that result in sustained and transient lateral accelerations experienced at the vehicle CG of more than 0.5 g (0.7-g objective).	Section 3.4 in the Spec has been updated. The additional comments will not be incorporated.

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325		17.	<p>Reference: Section C Draft SOW, Page: N/A, Paragraph: N/A., Title: N/A</p> <p>Reference: Attachment 5, Page: N/A, Paragraph: N/A., Title: N/A</p> <p>Statement: Attachment 5? FTTS ACTD Objective Performance Priorities is not one of the available Attachments. This document (Attachment 5) is critical to the development of an approach to concept development and basic technical concepts. Not having this document until the final solicitation is released greatly restricts the ability of the bidders to develop quality proposals.</p> <p>Question: Will the Government provide this document prior to final solicitation release?</p>	Attachment 5 (Objective Performance Priorities) will be released with the FTTS ACTD solicitation.

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328	CDD	331.	<p>The MSV and UV performance specs. make reference to an FTTS "CDD" document. Is this document available? I presume that it is relevant to the forthcoming procurement.</p>	CDD is currently in draft form and is not available for public release. All CDD references have been removed from the performance specification documents.