

DRAFT ANNEX D

COMPANION TRAILERS ANNEX

TO

PURCHASE DESCRIPTION (PD)

FOR

JOINT LIGHT TACTICAL VEHICLE (JLTV)

VERSION 2.3

15TH APRIL 2010

1 Scope

The release of the Draft Annex D is for informational and planning purposes only. This is only a Draft Annex D. Multiple revision of the Annex D are expected between now and EMD RFP. The intent for releasing this Draft is to provide industry with the forecasted direction of the JLTV program requirements and is not final. This web site will be updated with the latest version of the Draft Annex D as available.

Probability of Change (POC): Each requirement within the FoV and Annexes has been marked as High, Medium or Low for the web release depending on the likelihood of it being modified

- **High:** Requirements marked as High (red) have a high probability of being modified for EMD
- **Medium:** Requirements marked as Medium (orange) might be modified for EMD
- **Low:** Requirements marked as Low (yellow) are not likely to be changed for EMD

ID	POC	JLTV FoV Requirement
PDA-XXXX	H	
PDA-XXXX	M	
PDA-XXXX	L	

Everything that is highlighted in blue text are requirements that have been modified since version 2.0 release.

Australian Requirements: Although Australia is yet to make a formal commitment with regard to joining the US JLTV Program for the EMD Phase, the JLTV Program is seeking industry comment and feedback on a number of requirements that Australia has proposed for inclusion in the JLTV EMD PD. The majority of these Australian proposed requirements relate to Australian regulatory compliance. These proposed Australian requirements are indicated in the EMD PD with the precursor 'AUSTRALIAN'. In particular, the Program is seeking industry comment on whether these Australian proposed requirements are design and/or cost drivers. The level of effort required to comply with these Australian proposed requirements is also sought. Industry feedback will be used by the Program in order to determine whether these Australian proposed requirements can be incorporated at no/minimal impact to the Program or if of significant impact, not incorporated at all. In order to assist industry feedback, a comparative study of Australian Design Rules with selected US Vehicle Standards is included.

1.1 Overview

The JLTV-T will be pintle towed and compatible with all JLTV Payload Category vehicles and other military vehicles at the appropriate towed load of the prime mover but not exceeding the capacity of the trailer. The JLTV-T will possess a removable cargo box, and serve as the chassis platform for generator sets. The JLTV-T will interface with the systems (electrical, mechanical, pneumatic and/or hydraulic) of the JLTV as needed. The JLTV-T will be capable of operating and withstanding the same on-road and off-road conditions as its designated JLTV prime mover.

1.2 General Description

This annex covers a family of companion trailers for the Joint Light Tactical Vehicle (JLTV). The trailers, designated as JLTV-T, shall comply with all federal legal requirements applicable on the date of manufacture.

1.1.1 System Definition

The JLTV-T family of trailers are highly mobile, all terrain vehicles capable of operating on cross country, trail, secondary, and primary roads.

2 Applicable Documents

There are no Applicable Documents specific to the JLTV-T. Refer to section 2.0 Applicable Documents of the JLTV FoV Purchase Description.

DRAFT

ID	POC	DRAFT Annex D (JTLV-T) v2.3 Requirements														
PDT-11		3 Vehicle Requirements														
PDT-327	L	<p>The JLTV is defined as a System of Systems to include the truck chassis, the Companion Trailer, and applicable sub-components listed hereunder. All vehicle variants shall meet the general requirements of section 3 of this specification. Payload Category and Companion Trailer specific requirements are contained in the respective vehicle specific annex for each JLTV sub-configuration.</p> <p>If a conflict arises between Section 3 of this specification and the trailer specific annex, the callout in the trailer specific annex shall take precedence. If not otherwise specified, all requirements are threshold values (T). Objective values, which are desired capabilities, are labeled with an (O).</p>														
PDT-12	L	Unless otherwise specified herein, all JLTV-T requirements shall be at Gross Combined Vehicle Weight (GCVW). The JLTV-T shall meet all applicable Family of Vehicle (FoV) requirements and all requirements of this annex.														
PDT-13		3.1 Physical Requirements														
PDT-14		3.1.1 Payload														
PDT-15	M	The payload for the three JLTV-T models shown in Table D-1 correspond to their designated JLTV Payload Category-specific prime mover. The JLTV-T shall have an even weight distribution (+/- 5%) to each tire at curb weight. The payload vertical Center of Gravity (CG) height is 24 inches above the cargo bed floor.														
PDT-311	L	Table D-1. JLTV-T Payload Categories and Corresponding Prime Mover Vehicles.														
PDT-16	L	<table border="1"> <thead> <tr> <th>Model</th> <th>Payload (lbs)</th> <th>Prime Mover</th> </tr> </thead> <tbody> <tr> <td>JLTV-T-A</td> <td>3,400 (T), 4,200 (O)</td> <td>JLTV-A</td> </tr> <tr> <td>JLTV-T-B</td> <td>4,200 (T), 5,600 (O)</td> <td>JLTV-B</td> </tr> <tr> <td>JLTV-T-C</td> <td>5,600 (T), 10,000 (O)</td> <td>JLTV-C</td> </tr> </tbody> </table>			Model	Payload (lbs)	Prime Mover	JLTV-T-A	3,400 (T), 4,200 (O)	JLTV-A	JLTV-T-B	4,200 (T), 5,600 (O)	JLTV-B	JLTV-T-C	5,600 (T), 10,000 (O)	JLTV-C
Model	Payload (lbs)	Prime Mover														
JLTV-T-A	3,400 (T), 4,200 (O)	JLTV-A														
JLTV-T-B	4,200 (T), 5,600 (O)	JLTV-B														
JLTV-T-C	5,600 (T), 10,000 (O)	JLTV-C														
PDT-17		3.1.1.1														
PDT-18	M	The payload CG shall be on the transversal center line of the JLTV-T at GVW (trailer).														
PDT-19		3.1.2 Commonality														
PDT-303		3.1.2.1														
PDT-20	L	The JLTV-T shall utilize common components compatible with its designated JLTV prime mover to the maximum extent possible.														
PDT-305		3.1.2.2														
PDT-304	L	The JLTV-T shall utilize common components compatible across payload category companion trailers to the maximum extent possible.														
PDT-21		3.2 Performance Requirements														
PDT-22	L	The JLTV-T coupled to its designated prime mover shall meet the performance characteristics as specified in this annex at GCVW unless otherwise specified.														
PDT-23		3.2.1 Mobility														
PDT-28		3.2.1.1 Tracking														
PDT-29	L	When towed on level primary roads, the JLTV-T and its designated prime mover shall be capable of maintaining posted speed limits and conform to Federal Motor Carrier Safety Regulation 393.70 which limits trailer oscillation.														
PDT-32		3.2.1.2 Backing														

ID	POC	DRAFT Annex D (JTLV-T) v2.3 Requirements
PDT-33	L	The JLTV and JLTV-T combination shall be capable of being backed safely from any normal position (such as when in a turn but not from full jackknife) without damage to truck, trailer, or payload, and without necessity for operator dismounting or other preparation.
PDT-34		3.2.1.3 Speed.
PDT-35	L	The JLTV-T at all permissible loads shall be capable of operating at speeds specified for the prime movers in all on/off road conditions without damage or interference.
PDT-38		3.2.1.4 Braking
PDT-320		3.2.1.4.1
PDT-46	L	Trailer service brakes shall meet the requirements of FMVSS 121.
PDT-332	L	[AUSTRALIAN] The trailer shall be equipped with service brakes as specified per ADR 38/03 Trailer Brake Systems for TB Class Trailer (Light Trailer) or TC Class Trailers (Medium Trailer).
PDT-321		3.2.1.4.2
PDT-322	L	Trailer service brakes shall hold the trailer stationary on a 30% longitudinal grade, on a dry, paved surface, with the trailer facing in either direction, when disconnected from the prime mover.
PDT-323		
PDT-324	L	Indicator(s) shall be provided that communicate trailer service brake malfunctions and error messages to the driver.
PDT-49		3.2.1.5 Breakaway
PDT-50	L	The JLTV-T shall be equipped with a breakaway safety feature to apply JLTV-T brakes which conform to Federal Motor Carrier Safety Regulation 393.43.
PDT-52		3.2.2 Transportability
PDT-53	L	The JLTV-T shall meet the following transportability criteria when transported individually and when transported while connected to the JLTV as specified.
PDT-54		3.2.2.1
PDT-55	L	The transportability criteria shall be in accordance with (IAW) MIL-STD-209 and MIL-STD-1366. Except for removal of the soft top kit as specified below, preparation for shipment by any mode, or subsequent operation, shall not be required.
PDT-164		3.2.2.2 Tiedowns
PDT-165	L	Cargo tiedown (recessed tie-downs where applicable), equipment tiedown and lift provisions shall be IAW MIL-STD-209.
PDT-56		3.2.2.3
PDT-57	L	The JLTV-T shall be transportable worldwide without restriction by air, marine, rail and US and NATO highway modes.
PDT-58		3.2.2.4 Rotary Wing Transport
PDT-59	M	Without the soft top kit installed, one JLTV-T at GVW shall be externally transportable via sling-load by the CH-53E, CH-47F, and MV-22 Block C (T), and two JLTV-T's at GVW by CH-53E (O).
PDT-71		3.2.3 Supportability
PDT-72		3.2.3.1 Reliability, Availability and Maintainability (RAM).
PDT-73		3.2.3.1.1 Reliability
PDT-74		3.2.3.1.1.1 Mean Miles Between Hardware Mission Failure.

ID	POC	DRAFT Annex D (JLV-T) v2.3 Requirements									
PDT-75	L	The JLV-T shall demonstrate a Mean Miles Between Hardware Mission Failure (MMBHMf) as shown in the following table using the point estimate formula.									
PDT-312	L	Table D-2. Mean Miles Between Hardware Mission Failure.									
PDT-76	L	<table border="1"> <thead> <tr> <th>Model</th> <th>Mean Miles Between Hardware Mission Failure</th> </tr> </thead> <tbody> <tr> <td>JLV-T-A</td> <td>6,170 (T), 25,000 (O)</td> </tr> <tr> <td>JLV-T-B</td> <td>4,500 (T), 25,000 (O)</td> </tr> <tr> <td>JLV-T-C</td> <td>6.170 (T), 25.000 (O)</td> </tr> </tbody> </table>		Model	Mean Miles Between Hardware Mission Failure	JLV-T-A	6,170 (T), 25,000 (O)	JLV-T-B	4,500 (T), 25,000 (O)	JLV-T-C	6.170 (T), 25.000 (O)
Model	Mean Miles Between Hardware Mission Failure										
JLV-T-A	6,170 (T), 25,000 (O)										
JLV-T-B	4,500 (T), 25,000 (O)										
JLV-T-C	6.170 (T), 25.000 (O)										
PDT-77		3.2.3.1.2 Maintainability.									
PDT-78		3.2.3.1.2.1 Maintenance Ratio (Field Level).									
PDT-79	L	The JLV-T shall demonstrate a Field Level Maintenance Ratio as shown in the following table.									
PDT-313	L	Table D-3. Maintenance Man-Hours per Operating Mile.									
PDT-80	L	<table border="1"> <thead> <tr> <th>Model</th> <th>Maintenance Man-Hours per Operating Mile</th> </tr> </thead> <tbody> <tr> <td>JLV-T-A</td> <td>0.004 (T), 0.003 (O)</td> </tr> <tr> <td>JLV-T-B</td> <td>0.006 (T), 0.003 (O)</td> </tr> <tr> <td>JLV-T-C</td> <td>0.004 (T), 0.003 (O)</td> </tr> </tbody> </table>		Model	Maintenance Man-Hours per Operating Mile	JLV-T-A	0.004 (T), 0.003 (O)	JLV-T-B	0.006 (T), 0.003 (O)	JLV-T-C	0.004 (T), 0.003 (O)
Model	Maintenance Man-Hours per Operating Mile										
JLV-T-A	0.004 (T), 0.003 (O)										
JLV-T-B	0.006 (T), 0.003 (O)										
JLV-T-C	0.004 (T), 0.003 (O)										
PDT-81		3.2.3.1.2.2 Maintenance Ratio (Sustainment Level).									
PDT-82	H	The JLV-T shall have a Sustainment Level Maintenance Ratio as shown in the following table.									
PDT-314	L	Table D-4. Maintenance Man-Hours per Operating Mile.									
PDT-83	L	<table border="1"> <thead> <tr> <th>Mod</th> <th>Maintenance Man-Hours per Operating Mile</th> </tr> </thead> <tbody> <tr> <td>JLV-T-A</td> <td>0.0009 (T=O)</td> </tr> <tr> <td>JLV-T-B</td> <td>0.0017 (T), 0.0009 (O)</td> </tr> <tr> <td>JLV-T-C</td> <td>0.0009 (T=O)</td> </tr> </tbody> </table>		Mod	Maintenance Man-Hours per Operating Mile	JLV-T-A	0.0009 (T=O)	JLV-T-B	0.0017 (T), 0.0009 (O)	JLV-T-C	0.0009 (T=O)
Mod	Maintenance Man-Hours per Operating Mile										
JLV-T-A	0.0009 (T=O)										
JLV-T-B	0.0017 (T), 0.0009 (O)										
JLV-T-C	0.0009 (T=O)										
PDT-84		3.2.3.2 Interface Requirements									
PDT-85		3.2.3.2.1 Electrical System									
PDT-315	L	The trailer electrical system shall be fully compatible with both 24-volt and 12-volt Prime Mover electrical systems.									
PDT-87		3.2.3.2.1.1									
PDT-88	L	The JLV-T electrical system shall be fully compatible with, and be fully operational, when connected to the appropriate intra-vehicular cable receptacles of prime movers equipped NATO twelve-pin electrical connectors (ref: STANAG 4007).									
PDT-89		3.2.3.2.1.2									

ID	POC	DRAFT Annex D (JTLV-T) v2.3 Requirements
PDT-90	L	The JLTV-T electrical system shall be fully compatible with, and be fully operational, when connected to the appropriate intra- vehicular cable receptacles of prime movers equipped with SAE seven-pin electrical connectors, SAE J560.
PDT-316		3.2.3.2.1.3 Running Light System.
PDT-317	H	All JLTV-T running lights shall be LED.
PDT-318		3.2.3.2.1.4 Secure Lighting.
PDT-319	L	A trailer blackout lighting system shall be furnished.
PDT-103		3.2.3.2.2 ABS Electrical
PDT-104	L	The Anti-lock Braking System (ABS) electronic control unit (ECU) shall include wiring provisions to transmit the JLTV-T ABS malfunction signal to the prime mover cab. PLC (Power Line Carrier - SAEJ 2497) shall be provided to meet the ABS malfunction requirement of FMVSS 121.
PDT-105		3.2.3.2.3 Pintle Interface
PDT-106	L	An adjustable lunette shall be provided which permits a single operator to hook-up to the pintle of the JLTV and existing military trucks without the need for exact truck-JLTV-T alignment. Hook-up shall be possible with the prime mover pintle offset laterally from 7" (T) to 10" (O) from the centerline of the JLTV-T and from 7"(T) to 10"(O) forward of the normal towing position.
PDT-333	L	[AUSTRALIAN] The trailer shall have mechanical connections as specified per ADR 62/02 Mechanical Connections Between Vehicles for TB Class Trailer (Light Trailer) or TC Class Trailers (Medium Trailer).
PDT-107		3.2.3.2.3.1
PDT-108	L	The JLTV-T shall be compatible with all JLTV pintles (T); and HMMWV, FMTV, HEMTT-LHS and M939 pintles (O). The ground to lunette height is 20 3/8 to 29 inches for the HMMWV. For the FMTV, HEMTT-LHS and M939, it is 32.6" to 39 inches.
PDT-109		3.2.3.2.4 Safety Chains
PDT-110	L	To protect from loss of JLTV-T control in the event of pintle or lunette failure, safety chains shall be provided on all JLTV-T's which conform to SAE J684, Class 3.
PDT-111		3.2.3.2.5 Kits
PDT-112	L	The JLTV-T shall operate IAW the requirements of the JLTV Purchase Description after installation of and use of the kits specified herein. The application and use of these kits shall in no way affect the life expectancy of the vehicle or its components. The JLTV-T shall be furnished with the interface requirements for the kits, such as predrilled holes, electrical hook-up, hole accesses, etc. The JLTV-T shall have space and power allocation to accept installation of all or any combination of the kits described herein.
PDT-113		3.2.3.2.5.1 120mm Quickstow Mortar Kit.
PDT-114	M	The JLTV-T-B shall be configured to accept the 120mm Quickstow Mortar Kit.
PDT-115		3.2.3.2.5.2 Soft Top Kit.
PDT-117	L	The JLTV-T shall have the capability to accept a one-piece tarpaulin. The tarpaulin material shall be vinyl-coated nylon conforming to type II, class 2 of MIL-PRF-20696 or equivalent. The front of the tarp shall be contour sewn such that there is no opening at the corners, and shall form-fit the front end of the JLTV-T.
PDT-118		3.2.3.3 Stowage Box.

ID	POC	DRAFT Annex D (JTLV-T) v2.3 Requirements
PDT-119	L	A bolt-on weather resistance stowage box shall be provided to stow the soft top kit. The bottom of the box shall be located no lower than the frame.
PDT-120		3.2.3.4 Rims, Tires and Runflat Devices
PDT-121	L	The JLTV-T shall be furnished with the same wheel, tire and runflat device assembly as equipped on its designated prime mover. The assembly shall also be equipped with CTIS hardware if the prime mover is equipped with CTIS.
PDT-124		3.2.3.4.1 Tools
PDT-325		3.2.3.4.1.1
PDT-125	L	The JLTV-T shall be capable of using the prime mover jack, jack handle, and lug wrench for tire changes.
PDT-326		3.2.3.4.1.2
PDT-126	L	All operator maintenance actions shall be accomplished using the BII for the JLTV.
PDT-127		3.2.3.5 Tailgate
PDT-128	L	The JLTV-T shall be equipped with a fold down, removable tailgate. The tailgate shall be full width across the rear of the cargo opening and shall be removable by the vehicle operator using JLTV Basic Issue Items (BII) in 2 minutes or less.
PDT-129		3.2.3.5.1
PDT-130	L	The tailgate shall be capable of maintaining a horizontal open position which can support an evenly distributed minimum load of 1,000 pounds (static).
PDT-131		3.2.3.5.2
PDT-132	L	Chains or other hardware used in the tailgate assembly shall have noise dampening material which minimizes trailer affect on the system's noise signature.
PDT-133		3.2.3.6 JLTV-T Cargo Boxes
PDT-331	L	The JLTV-T shall meet all performance requirements of this specification both with and without the cargo box attached.
PDT-168		3.2.3.6.1
PDT-169	L	The JLTV-T cargo box shall be secured to the chassis using four ISO container locks.
PDT-306		3.2.3.6.2 Cargo Box for JLTV-T-A
PDT-307	L	The uninterrupted, internal dimensions of the JLTV-T-A trailer bed shall be at least 84 inches long and at least 55 inches wide, and shall permit loading of two tactical quiet 10 Kw generator sets with dimensions: 55 in x 32 in x 36 in (L x W x H), as called out in the kit section of this annex.
PDT-308		3.2.3.6.3 Cargo Box for JLTV-T-B and JLTV-T-C
PDT-309	L	For the purposes of sizing the trailer, the JLTV-T-B and JLTV-T-C shall be capable of carrying two Joint Modular Intermodal Containers (JMIC) on the floor of the trailer bed. The JMIC dimensions are 43.75 in x 51.75 in x 43 in (L x W x H). Annex PDT-16 further defines trailer payload requirements.
PDT-135		3.2.3.6.4 Sidewalls and Endwalls
PDT-136	L	The JLTV-T shall be equipped with removable dropsides and endwalls that have a minimum height of 18 inches, and shall be strong enough to support the entire weight of a full capacity payload evenly distributed over the entire dropsides and endwalls.
PDT-139		3.2.3.7 Wheel Splash and Stone Throw Protection

ID	POC	DRAFT Annex D (JTLV-T) v2.3 Requirements
PDT-140	L	Rigid fenders or flexible splash shields shall be provided. Protection to the rear against rear wheel splash and stone throw shall include anti-sail mud flaps that will not be lifted up by high speed air flow and be in accordance with SAE J682. If pinned under wheels or other objects, mudflaps shall tear away without causing any damage to supporting structures.
PDT-141		3.2.3.8 Pedestal/Retractable Landing Device
PDT-142	L	An adjustable leg shall be provided to allow a JLTV-T without prime mover to be leveled on longitudinal slopes from zero to plus or minus 10 percent.
PDT-143		3.2.3.8.1
PDT-144	L	The landing device shall possess a combination wheel and ground pad. The ground pad shall have sufficient ground contact area to support the JLTV-T at GVW under wet and muddy conditions.
PDT-310		3.2.3.8.2
PDT-145	L	The device shall provide leveling capability in soft soil conditions should the wheel or fork be disabled.
PDT-146		3.2.3.9 Rear Stabilizer Legs
PDT-147	L	Rear stabilizer legs shall be provided which stabilize the JLTV-T on longitudinal slopes from zero to plus or minus 10 percent.
PDT-148		3.2.3.9.1
PDT-149	L	The capacity of each stabilizer leg shall be a minimum of 50 percent of the JLTV-T GVW.
PDT-150		3.2.3.9.2
PDT-151	L	The stabilizer legs shall be of adequate length to stabilize the JLTV-T when leveled on longitudinal slopes from zero to plus or minus 10 percent.
PDT-152		3.2.3.9.3
PDT-153	L	The ground pad on each rear stabilizer leg shall have sufficient ground contact area to support the JLTV-T at GVW under wet and muddy conditions.