

**DRAFT ANNEX C**

**PAYLOAD CATEGORY – C**

**TO**

**PURCHASE DESCRIPTION (PD)**

**FOR**

**JOINT LIGHT TACTICAL VEHICLE (JLTV)**

**VERSION 2.3**

**15<sup>TH</sup> APRIL 2010**

# 1 Scope

The release of the Draft Annex C is for informational and planning purposes only. This is only a Draft Annex C. Multiple revision of the Annex C 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 C 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.

This annex defines the Joint Light Tactical Vehicle, Payload Category C (JLTV-C), physical and performance capabilities required to support the Focused Logistics (FL) functional mission roles. The JLTV-C sub-configurations defined herein shall meet all requirements of the JLTV Family of Vehicles Purchase Description (unless otherwise indicated) and all requirements of this annex.

## 1.2 General Description.

The JLTV-C will serve FL mission roles by providing transport of wounded personnel, general cargo, ammunition and shelters. The JLTV-C will be capable of towing trailers and towed weapon systems.

### 1.2.1 Sub-Configurations.

The JLTV-C sub-configurations are defined as follows:

### **1.2.1.1 Ambulance (JLTV-C-AMB).**

When configured in the ambulance role, the JLTV-C-AMB will provide capability to transport of a crew of medical personnel and wounded personnel, rapid protected casualty evacuation and allow on board medical treatment.

### **1.2.1.2 Utility Vehicle (JLTV-C-UTL).**

When configured in the Utility Vehicle role, the JLTV-C-UTL will provide for general purpose cargo carrying capability, serve as prime mover for towed weapon systems, and as a shelter carrier.

### **1.2.1.3**

The Ambulance and Utility Cargo Vehicle sub-configurations will provide maximum commonality of components to include a common vehicle platform, crew compartment, drive train and suspension. All JLTV-C sub-configurations shall meet the requirements of the FoV section of the ATPD and the JLTV-C requirements of this annex.

## **2 Applicable Documents**

There are no Applicable Documents specific to the JLTV-C.

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ID	POC	DRAFT Annex C (JLTV-C) v2.3 Requirements
PDC-22		<b>3 VEHICLE REQUIREMENTS.</b>
PDC-277	L	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.  If a conflict arises between Section 3 of this specification and the vehicle specific annex, the callout in the vehicle 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).
PDC-23		<b>3.1 Physical Requirements.</b>
PDC-24		<b>3.1.1 Weight.</b>
PDC-25	L	JLTV-C vehicle weights shall be consistent with achieving the performance, transportability and mission capabilities defined in the FoV section of the ATPD and this annex.
PDC-28		<b>3.1.1.1 Essential Combat Configuration Weight.</b>
PDC-29	L	See Annex K for ECC per sub-configuration.
PDC-34		<b>3.1.2 Payload.</b>
PDC-35	H	The JLTV-C shall be capable of transporting a payload of 5,100 pounds (T), 5,500 pounds (O).
PDC-42		<b>3.1.3 Dimensions.</b>
PDC-43	L	Interior and exterior dimensions of the JLTV-C shall be consistent with achieving the performance, transportability and mission capabilities defined in the FoV section of the ATPD and this annex. Dimensional limitations and requirements shall be applicable to JLTV-C vehicles configured with inherent armor and B armor kit installed.
PDC-50		<b>3.2 PERFORMANCE CHARACTERISTICS.</b>
PDC-51		<b>3.2.1 MOBILITY.</b>
PDC-52		<b>3.2.1.1 Terrain.</b>
PDC-53	H	The JLTV-C at GVW shall meet the NRMM Prediction Summary and each individual value for Cross Country and Trafficability at the various geographical locations and soil conditions shown in Table C-1.

ID	POC	DRAFT Annex C (JLV-C) v2.3 Requirements				
PDC-276	L	<b>Table C-1 Mobility Rating</b>				
		All values are thresholds unless indicated by (O)		<b>JLV-C</b>		
		<b>NRMM Prediction Summary</b>		Cross Country v50 (mph)	17 (T)/ 21 (O)	
				Trafficability (%XC No Go)	24 (T)/ 18 (O)	
		<b>Geographical Location</b>	<b>Soil Condition</b>	<b>NRMM Attribute</b>	<b>JLV-C</b>	
		Lauterbach, Germany (Map Sheet 5322)	Dry Normal	Cross Country v50 (mph)	≥ 20	
				Trafficability (%XC No Go)	≤ 14%	
			Wet Normal	Cross Country v50 (mph)	≥ 17	
				Trafficability (%XC No Go)	≤ 25%	
			Snow	Cross Country v50 (mph)	≥ 16	
				Trafficability (%XC No Go)	≤ 34%	
		Al Mafrag, Jordan (Map Sheet 3254 IV)	Dry Normal	Cross Country v50 (mph)	≥ 15	
Trafficability (%XC No Go)	≤ 10%					
Sand	Cross Country v50 (mph)		≥ 11			
	Trafficability (%XC No Go)		≤ 21%			
Cheorweon, Korea (Map Sheet 3222 III)	Dry Normal	Cross Country v50 (mph)	≥ 12			
		Trafficability (%XC No Go)	≤ 38%			
	Wet Normal	Cross Country v50 (mph)	≥ 11			
		Trafficability (%XC No Go)	≤ 40%			
PDC-283		<b>3.2.1.2 Speed.</b>				
PDC-55		<b>3.2.1.2.1 Speed on Grade.</b>				

ID	POC	DRAFT Annex C (JLV-C) v2.3 Requirements
PDC-57	L	The JLV-C shall be capable of continuously ascending a 5-percent grade at 45 MPH at GVW (T), 60 MPH at GVW (O).
PDC-284		<b>3.2.1.2.2 0-30 mph Acceleration Dash Speed.</b>
PDC-285	L	The JLV-C at GVW shall be capable of accelerating on dry, level hard terrain from 0 to 30 mph (48.3 kph) within 9.4 seconds (T)/7 seconds (O)
PDC-63		<b>3.2.1.3 Turning Radius.</b>
PDC-64	M	The JLV-C vehicles at GCVW shall have a turning radius of 28 feet (T), 25 feet (O) curb to curb.
PDC-78		<b>3.2.1.4 Towing.</b>
PDC-79	L	The JLV-C shall be capable of towing the companion trailer as defined in Annex D.
PDC-264		<b>3.2.1.4.1 Backward Compatibility.</b>
PDC-265	L	The JLV-C shall be capable of towing the M101A3, M105A2, M1101 (LTT-L), M149A2, M353, M1102 (LTT-H), LTT-HC, M116A2, M1082, M200A1, M119A2 Howitzer, and M777 Howitzer in a degraded manner, which is defined as towing that legacy trailer at the safe operating limit of the legacy trailer. The legacy trailers shall not exceed the towing capacity of the JLV.
PDC-80		<b>3.2.2 SURVIVABILITY.</b>
PDC-273	L	The JLV-C shall provide ballistic and blast protection as required in Annex E.
PDC-94		<b>3.2.3 TRANSPORTABILITY.</b>
PDC-95		<b>3.2.3.1 Fixed Wing Aircraft.</b>
PDC-96	L	The JLV-C shall be air transportable aboard C-130E/H and larger fixed wing aircraft at a rate of 1 vehicle at GVW (T), GCVW (O).
PDC-286		<b>3.2.3.1.1 Low Velocity Aerial Delivery (LVAD).</b>
PDC-287	L	The JLV- C at GVW (excluding GPK) and companion trailers at GVW shall be individually capable of LVAD from C-130, C-17 and C-5 aircraft (T). The JLV-A at GVW (excluding GPK) and companion trailers at GVW shall be capable of LVAD simultaneously (on the same platform) from C-130, C-17 and C-5 aircraft (O).
PDC-99		<b>3.2.3.2 Rotary Wing Aircraft.</b>
PDC-256		<b>3.2.3.2.1 Tactical Transport.</b>
PDC-100	H	All JLV-C variants shall be transportable in the following configuration:
PDC-251	L	1) One JLV-C at GVW External to a CH-53K. (T)
PDC-290		2) One JLV-C at ECC External to a CH-47F (T). For the JLV-C the lift capacity of the CH-47F shall be limited to 18,098 pounds.
PDC-255		<b>3.2.3.2.1.1</b>
PDC-257	M	Excluding the Ambulance and Utility Cargo Vehicles equipped with shelters , the JLV-C shall be transportable in the following configurations:
PDC-252	L	1) One JLV-C at ECC External to a CH-53E. (T)
PDC-253	H	2) One JLV-C-UTL at ECC External to a CH-47F (T). For the JLV-C-UTL the lift capacity of the CH-47F shall be limited to 15,693 pounds.
PDC-291	H	3) Two JLV-C-UTL at ECC External to a CH-53K. (O)
PDC-292	H	4) One JLV-C-UTL at GVW External to CH-47F (T). For the JLV-C-UTL at GVW External the lift capacity of the CH-47F shall be limited to 18,098 pounds.
PDC-293		<b>3.2.3.3 Sealift Transport</b>

ID	POC	DRAFT Annex C (JLTV-C) v2.3 Requirements
PDC-294	M	The JLTV-C-UTL at GVW and GCVW shall be capable of being loaded into all deck spaces of the prepositioning and force protection naval ships where current HMMWVs are loaded, including height restricted deck spaces (decks A and G) the AMSEA class ships.
PDC-260		<b>3.2.4 Vehicle Command, Control, Communications, Computers &amp; Intelligence (C4I).</b>
PDC-261	L	The JLTV-C sub-configurations shall be able to integrate the C4I equipment as defined in Annex K.
PDC-104		<b>3.2.5 SUPPORTABILITY</b>
PDC-105		<b>3.2.5.1 Reliability, Availability and Maintainability (RAM)</b>
PDC-106		<b>3.2.5.1.1 Reliability</b>
PDC-107		<b>3.2.5.1.1.1 Mean Miles Between Hardware Mission Failure.</b>
PDC-108	H	The JLTV-C shall demonstrate at a minimum, a point estimate of 6,170 (T), 25,000 (O) Mean Miles Between Hardware Mission Failure (MMBHMf). For full rate production, the JLTV-C shall be designed to demonstrate at a minimum, a point estimate of 10,000 (T) Mean Miles Between Hardware Mission Failure (MMBHMf).
PDC-109		<b>3.2.5.1.2 Maintainability</b>
PDC-110		<b>3.2.5.1.2.1 Maintenance Ratio (Field Level).</b>
PDC-111	H	The JLTV-C shall demonstrate a Field Level Maintenance Ratio of 0.004 (T); 0.003 (O) maintenance man-hours per operating mile (MMH/OM). See FoV paragraph "Maintenance Ratio Field Level" for definition of Field level Maintainability.
PDC-112		<b>3.2.5.1.2.2 Maintenance Ratio (Sustainment Level).</b>
PDC-113	H	The JLTV-C shall have a Sustainment Level Maintenance Ratio of 0.0009 (T=O) maintenance man-hours per operating mile (MMH/OM). See FoV paragraph "Maintenance Ratio Sustainment Level" for definition of Sustainment level Maintainability.
PDC-279		<b>3.2.5.1.3 Fuel Efficiency.</b>
PDC-280	H	The JLTV-C shall meet a fuel efficiency of 60(T), 90(O), ton-miles per gallon based on maximum GVW, including armor. Fuel efficiency will be measured over the Munson Standard Fuel Consumption course per TOP 2.2.603.
PDC-114		<b>3.2.6 JLTV-C Sub-configuration Requirements.</b>
PDC-115		<b>3.2.6.1 Ambulance Requirements (JLTV-C-AMB).</b>
PDC-119		<b>3.2.6.1.1 Occupants.</b>
PDC-120	L	The JLTV-C-AMB shall provide the capability of transporting a medical crew of three (3) personnel within the interior of the vehicle.
PDC-123		<b>3.2.6.1.2 Cab Separation.</b>
PDC-124	L	The JLTV-C-AMB shall have a means of separating the crew cab area to seal against light penetration to allow continued patient treatment while the vehicle is operating in black out conditions.
PDC-127		<b>3.2.6.1.2.1</b>
PDC-128	L	The separation shall allow personnel movement between the cab and ambulance compartment.
PDC-131		<b>3.2.6.1.3 Patient Loading.</b>
PDC-132	L	The JLTV-C-AMB shall provide MANPRINT and human factors that enable 5% females to load and unload a 95% male patient in ambulatory and litter configurations.
PDC-133		<b>3.2.6.1.3.1</b>
PDC-134	L	Patient loading shall be in accordance with Army standard four-man carry/loading techniques.

ID	POC	DRAFT Annex C (JLV-C) v2.3 Requirements
PDC-135		<b>3.2.6.1.3.2</b>
PDC-136	L	A litter lift and support system shall be provided to accommodate safe loading, unloading, and transport of patients in the upper litter berths.
PDC-137		<b>3.2.6.1.4 Patient Compartment Characteristics.</b>
PDC-138		<b>3.2.6.1.4.1 Patient Compartment.</b>
PDC-139	H	The JLV-C-AMB patient compartment shall provide the capability to transport up to four (4) patients in NATO Standard Litters or six (6) ambulatory casualties.
PDC-140		<b>3.2.6.1.4.1.1</b>
PDC-141	L	The patient compartment and litter provisions shall provide a minimum 28 inches lateral clearance between litters and 22 inches vertical clearance above the patient.
PDC-144		<b>3.2.6.1.4.1.2</b>
PDC-145	M	The patient compartment shall allow medical personnel to move throughout the interior from a stabilized position while monitoring casualties and performing medical procedures.
PDC-146		<b>3.2.6.1.4.2 Ambulance Mission Package Storage.</b>
PDC-147	L	The patient compartment shall provide accessible interior space for the ambulance mission package.
PDC-148		<b>3.2.6.1.4.2.1</b>
PDC-149	L	The storage area shall not interfere with the loading, unloading or treatment of patients.
PDC-150		<b>3.2.6.1.4.2.2</b>
PDC-151	L	The patient compartment shall provide storage space for Medical Equipment Sets (MES) and other medical supplies.
PDC-152		<b>3.2.6.1.4.2.3</b>
PDC-153	L	The patient compartment shall provide storage space for the Surgical Instrument and Supply Set Individual (SISS).
PDC-154		<b>3.2.6.1.4.3 Lighting.</b>
PDC-155	L	The JLV-C-AMB patient compartment shall contain a lighting system capable of providing illumination of 110fc or greater throughout the patient area.
PDC-156		<b>3.2.6.1.4.3.1</b>
PDC-157	L	The lighting system shall provide full white and blackout interior illumination.
PDC-158		<b>3.2.6.1.4.3.2</b>
PDC-159	L	Lighting shall be maneuverable to provide focused lighting in a specific area for patient treatment.
PDC-160		<b>3.2.6.1.4.3.3</b>
PDC-161	L	The system shall also be capable of providing a focused, adjustable illumination of 240fc at each litter.
PDC-162		<b>3.2.6.1.4.3.4</b>
PDC-163	M	The lighting system shall be equipped with a master on/off control that allows selection of full white or black out illumination.
PDC-164		<b>3.2.6.1.4.3.5</b>
PDC-165	L	A separate dimmer control shall be provided for each individual lighting fixture in the patient compartment to allow the light to operate from full intensity to off position.

ID	POC	DRAFT Annex C (JLV-C) v2.3 Requirements
PDC-166		<b>3.2.6.1.4.3.6</b>
PDC-167	L	The patient compartment shall have an automated means of defaulting the lighting system to black out mode if any compartment door is opened while the vehicle is operating in black out conditions.
PDC-168		
PDC-169	L	The blackout lighting system shall also be compatible for use when the occupants are wearing a night vision goggle (NVG) device.
PDC-170		<b>3.2.6.1.5 HVAC</b>
PDC-171	L	The JLV-C-AMB shall maintain stable environmental temperature zones (60-85 degrees F) at each ambulatory seat and litter berth (T), throughout the patient transport/care area (O).
PDC-172		<b>3.2.6.1.5.1</b>
PDC-173	L	The climate control system shall not detract from the medical attendant's ability to view patients or conduct treatment, and shall allow a controllable airflow to sustain each casualty.
PDC-174		<b>3.2.6.1.6 Treatment Capabilities.</b>
PDC-175		<b>3.2.6.1.6.1</b>
PDC-176	L	The JLV-C-AMB patient compartment shall have an accessible attendant's seat that allows the attendant to change position and visually monitor all patients while the vehicle is in motion.
PDC-183		<b>3.2.6.1.6.2</b>
PDC-184	L	The JLV-C-AMB shall be capable of accepting networked tele-medicine interfaces, Medical Command, Control, Communications, and Computers (MC4), and the Theater Medical Information Program (TMIP).
PDC-185		<b>3.2.6.1.6.3</b>
PDC-186	L	The JLV-C-AMB shall be capable of accepting and supporting physiological status monitoring equipment.
PDC-187		<b>3.2.6.1.6.4</b>
PDC-188	L	The JLV-C-AMB shall be capable of conducting remote triage (T).
PDC-191		<b>3.2.6.1.6.5</b>
PDC-192	L	The JLV-C-AMB shall have the capability to interface with the casualty's medical information device (carried by individual soldiers) and/or a collective medical records database. It shall provide the ability to enter and retrieve medical records/information.
PDC-193		<b>3.2.6.1.6.6 Medical Suction</b>
PDC-195		<b>3.2.6.1.6.6.1</b>
PDC-196	L	The JLV-C-AMB shall provide on board medical suction to include variable controlled, continuous suction to two litter patient stations, simultaneously, with a 2-liter disposable container, minimum vacuum capability of 51 kPa, and a flow rate of 1.4 L/s.
PDC-197		<b>3.2.6.1.6.7</b>
PDC-198	L	The JLV-C-AMB shall have an on-board capability to generate, store, and provide an equivalent adjustable flow rate (3-15 liter/min) of oxygen to two litter stations simultaneously.
PDC-199		<b>3.2.6.1.6.8</b>
PDC-200	L	The JLV-C-AMB shall be capable of on-board water heating of 5 gallons of water from 68 degrees F to 100 degrees F (T) and 150 degrees F (O) in 15 minutes (T) and 10 minutes (O).
PDC-201		<b>3.2.6.1.6.9</b>

ID	POC	DRAFT Annex C (JLTV-C) v2.3 Requirements
PDC-202	L	The JLTV-C-AMB shall be capable of supporting associated medical equipment with 110/220 volts AC 60 Hz and 24 volts DC using vehicle power with engine operating and by an external power supply without vehicle engine operating.
PDC-203		<b>3.2.6.1.6.10</b>
PDC-204	L	JLTV-C-AMB module shall have the capability to support and stabilize two 1000-ml IV bags at each litter/treatment station.
PDC-205		<b>3.2.6.1.7 Red Cross Markings.</b>
PDC-206	L	JLTV-C-AMB shall be capable of displaying Geneva Convention Red Cross markings.
PDC-207		<b>3.2.6.1.7.1</b>
PDC-208	L	The Red Cross marking shall be capable of being removed or concealed within 2 minutes from outside the vehicle (T) and 1 minute from inside the vehicle (O).
PDC-240		<b>3.2.6.1.7.1.1</b>
PDC-241	L	Storage for the Red Cross Markings shall be provided if removal is the method of concealment for the Red Cross markings.
PDC-213		<b>3.2.6.2 Utility Vehicle Requirements (JLTV-C-UTL).</b>
PDC-217		<b>3.2.6.2.1 Occupants.</b>
PDC-218	L	When configured as a Utility Cargo Vehicle, the JLTV-C-UTL shall provide the capability to accommodate two (2) occupants (T); three (3) occupants (O) and their personal gear.
PDC-219		<b>3.2.6.2.2 Cargo Transportation.</b>
PDC-242		<b>3.2.6.2.2.1 Cargo Tiedowns.</b>
PDC-220	L	The JLTV-C-UTL shall be equipped with cargo area tiedowns complying with MIL-STD-209 requirements.
PDC-243		<b>3.2.6.2.2.2 Cargo Covering.</b>
PDC-244	L	The JLTV-C-UTL shall have the capability to accept a tarpaulin covering for the cargo area of the vehicle conforming to MIL-PRF-20696, Type I, Class 2. The covering and all necessary supports shall be totally detachable from the vehicle.
PDC-245		<b>3.2.6.2.2.3 Cargo Body.</b>
PDC-246	L	The JLTV-C-UTL cargo body shall have sides, headboard and a tailgate. The sides shall be hinged or removable to permit ease of loading, and the sides and tailgate shall be removable without use of tools. The removable components shall have specific recesses or handles to facilitate their removal.
PDC-258		<b>3.2.6.2.2.4 Non-Line of Sight Launch System (NLOS-LS).</b>
PDC-259	M	The JLTV-C-UTL shall be capable of transporting and employing the Non-Line of Sight Launch System/Container Launch Unit (NLOS/CLU) (T) and transporting and employing the MHE to offload the module from the platform to the ground (O).
PDC-221		<b>3.2.6.2.3 Shelter Transport.</b>
PDC-222	L	The JLTV-C-UTL shall be capable of transporting the following shelters:
PDC-223	L	a. S-250 Shelter
PDC-224	L	b. S-250E Shelter
PDC-225	L	c. S-788 Lightweight Multipurpose Shelter (LMS)
PDC-226	M	d. S-787, S-832 and S-842 Standardized Integrated Command Post System (SICPS)
PDC-227		<b>3.2.6.2.3.1</b>

ID	POC	DRAFT Annex C (JLV-C) v2.3 Requirements
PDC-228	L	The JLV-C-UTL shall be capable of transporting the above shelters by use of an interface kit (T) or directly mounting the shelters to the vehicle (O).
PDC-248		
PDC-247	L	Interface kit and hardware to install shelter shall be included in vehicle curb weight and not considered part of the payload.
PDC-230		<b>3.2.6.2.3.2 Power.</b>
PDC-231	L	The JLV-C-UTL shall provide electrical power to support the HVAC units in the shelter mission packages.
PDC-232		<b>3.2.6.2.3.2.1</b>
PDC-233	L	The JLV-C-UTL shall be capable of providing, and interfacing with, current shelter power supply connections.
PDC-234		<b>3.2.6.2.3.3 Towing.</b>
PDC-235	L	Installation of the shelter shall not interfere with or limit trailer towing capabilities.

