

2.8.2 Technology Challenges

2.8.2.1 Wire Detection

Finding solution to detect IED command-detonation wires has been a challenge for JIEDDO. A number of technologies are under review, including radar, lasers, electro-optical/infrared (EO/IR) images, resonance detection and hyperspectral sensors. The number and complexity of sensors, together with the requirement to establish test configurations and procedures, have led to a relatively long duration programme.

2.8.2.2 Deep- Buried IEDs

According to JIEDDO, deep-buried IEDs have been difficult to detect so far, posing a great threat. Commercial ground penetrating radars are used to find underground pipes. Variants of this type of radar have been investigated for use in the detection of IEDs. The engineering aspects required to distinguish IEDs from other deep-buried objects have proved to be a significant challenge, the reports suggest.

2.9 US Projects in the Pipeline

2.9.1 Joint Light Tactical Vehicle (JLTV)

The Joint Light Tactical Vehicle (JLTV) is a family of future light tactical vehicles currently being developed by the US Army and the US Marine Corps as a successor to the 11 different versions of Humvee. Humvees have been in service since 1985; those vehicles were developed during the Cold War when IEDs and other explosive devices were not an important factor in military planning.

Category A JLTVs are intended for general purpose mobility and would carry a 3,500 pound payload. Category B vehicles are intended to serve as infantry carriers, command and control and reconnaissance vehicles, and weapons carriers; these would accommodate 4,000 to 4,500 pound payloads. Category C vehicles are intended to serve as shelter carriers, prime movers, and ambulances and would carry a 5,100 pound payload. JLTVs

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are to be designed with scalable armour, enhanced suspension, and drivetrain capability to accommodate load carrying flexibly. According to a recent CRS Congress report: "As planned, JLTVs would be more mechanically reliable, maintainable (with on-board diagnostics), all terrain mobile, and equipped to link into current and future tactical data nets."

On 29 October 2008, the US Army announced the award of three contracts for the JLTV competition, giving 27-month technology development contracts to teams led by Lockheed Martin, General Dynamics and BAE Systems. Under the contract, each worth approximately \$xxx million, the companies will develop and test technology for the JLTV. BAE Systems is paired with partner Navistar International Corp for its contract; Lockheed Martin will partner with another BAE Systems unit known as Mobility and Protection Systems. Furthermore, General Dynamics Land Systems has formed a joint venture known as General Tactical Vehicles with AM General.

According to the CRS, report the companies will develop prototypes during the first 15 months, followed by 12 months of testing. The demonstration phase could be made mid 2011, with a contract for final production as early as 2013.

As far as programme funding and costs are concerned, DoD had not publicly announced a definitive cost to the JLTV programme, while some defence and trade analysts suggest that the programme will cost around \$xxx billion and possibly as much as \$xxx to \$xxx billion, depending on the final cost of the vehicles chosen and the number of vehicles procured.

Undoubtedly, the procurement of significant number of MRAPs had had an impact on JLTV programme. The Army has said that MRAP "fill a near-term requirement for enhanced crew protection" for both the Army and Marine Corps, further noting that those JLTVs are the long term solution for the services, according to the CRS report.

