

ADGA

CASE STUDY

LAV ICGS: Cost-effective training and simulation for the modern battlefield



LAV ICGS: COST-EFFECTIVE TRAINING AND SIMULATION FOR THE MODERN BATTLEFIELD

Customer Challenge

The LAV VI and its predecessor, the LAV III, are the mechanized backbone of the Canadian Forces on land. They are the primary infantry vehicles of the Canadian Army and have seen extensive action in Afghanistan.

Simulated training to prepare military personnel for the realities of the modern battlefield is crucial to protect lives and ensure the Armed Forces operate as efficiently and cost-effectively as possible.

With the LAV program, this requires a simulation solution for training three armoured crew members – the commander, gunner and driver. The objectives are to teach them how to operate their vehicle and increase and maintain their proficiency with the LAV's various system interfaces.

The earlier LAV III relied on a legacy simulator that required the use of an actual vehicle, suffered from poor resolution and did not lend itself for use in an interactive classroom environment. With the upgrade to the LAV VI, the Canadian Army committed to purchase a new fleet of vehicles from the manufacturer without an accompanying simulator.

Approach

The Canadian Army turned to The ADGA Training and Simulation Engineering Centre (TSEC) in Kingston, Ontario to develop an effective simulator that would improve on the shortcomings of prior systems. TSEC provides a broad set of modelling and simulation services to address a variety of needs in the areas of training, support to military exercises, experimentation and testing of new capabilities.

With regular input from military personnel, the TSEC team developed a modern simulator that would prepare LAV crew members for the field. The result, developed over 2012-2013, is called the Interim Crew Gunnery System (LAV ICGS). This simulator is a desktop-computer-based trainer, comprised of commodity computer hardware running modified simulation software. It includes a Fire Control System (FCS) for the LAV's 25mm gun turret.

Outcome

Compared to prior training simulators, the LAV ICGS does not require the use of an actual vehicle that could otherwise be deployed for service. It features video capability to record a gunner's actions during simulated engagements, for review and analysis in a classroom environment. This replaced so-called "chalk-board shoots" with a much more insightful and effective teaching resource in the classroom.

An analysis of costs for the TSEC simulator versus comparable simulators from other defence contractors identified dramatic cost savings for the Canadian Army. TSEC delivered 80 simulation suites at a total cost of \$5 million, versus \$1 million per suite, on average, from other defence contractors.

Over the course of one year, training with the simulator also dramatically reduced costs versus the previous training methods the required live ammunition and time on a firing range, with savings in the tens of millions of dollars.

LAV ICGS is also reconfigurable, making it quick and cost-effective to simulate any LAV variant or predecessor, such as the Coyote Reconnaissance Vehicle. This is in line with the growing requirement across the CAF for *reconfigurable* simulator systems that can quickly and cost-effectively be adapted to simulate a wide range of equipment and a variety of tasks under different operating conditions.

TSEC Kingston continues to support the Canadian Army by introducing numerous minor and major solution features and enhancements such as networking eight ICGS suites together in the same image generator (IG) or simulation environment. This instills strength, confidence and expertise into our Armed Forces, to prepare military personnel for the modern battlefield and ensure mission success.





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