

# Evolving Battlespace Triggers Innovations in Military Training



UNIFIED RESOLVE 2018 PHOTO: CANADIAN ARMED FORCES

**Despite the cost savings associated with simulated training environments, current solutions are time consuming to prepare and cumbersome to modify.**

The global shift to full-spectrum warfare and in-and-out mission fighting have given rise to an evolution in training requirements and methodologies. Previous training technologies were helpful in many ways, including cost savings on operational equipment, but were limited in scope and time-consuming to prepare. Innovative developers have now taken the simulation option to the next level.

Digitally-simulated training environments can enhance a soldier's real-time decision-making abilities and improve the likelihood of mission success when confronted by an unconventional enemy – and that was the aim of previous generation technologies.

Significant cost-savings are also achieved through these training systems and is a major reason why they have been widely implemented. The evolution of large scale digital training exercises developed quite rapidly once it became feasible to exercise without the huge expense of sending brigades or divisions into the field. Soon, digital exercises were set up to

improve responses and efficiencies for all aspects relating to the warfighting effort.

Exercise *Unified Resolve* was initiated in 2012 and has become an annual computer-assisted exercise designed to test command and control capabilities within the Canadian Army.

Speaking about *Unified Resolve* back in 2016, [Brigadier-General Trevor Cadieu](#) noted the criticality of simulation exercises for the leadership of the brigade. “It allows us to stress test some of our planning and procedures without needing to pull 4,000 troops into the field, away from their families and other duties,” said then-Commander of 1 Canadian Mechanized Brigade Group.

With continued implementation across multiple domains in recent years, the benefits and advantages of simulated training are now considered irrefutable.

Over time, however, significant drawbacks of those technologies were identified. The various processes to create and modify an exercise are often time-consuming, require a variety of formats, and the data for assessing outcomes is not available right away. In the case of *Unified Resolve*, the overall scenario for the exercise is written, coordinated, and rehearsed well in advance, with the relevant Battle Task Standards that need to be achieved by the Primary Training Audience. Daily meetings help to coordinate the exercise and, if required, new or modified scenarios can

be injected at that time. An on-site writing team then implements modifications in order to achieve the training required.

## The Future of Training

A multinational force has many moving pieces that have the potential to disrupt planning and efficiencies. The complexities of logistic support is a prime example, particularly in a multi-national context. As one soldier noted, it can be as simple as knowing the different fuels required for Canadian and American armoured vehicles. Discovering the limitations of existing technical infrastructure is another critical aspect when international forces are working together and operating with independent information systems that require unique regulatory solutions.

Developing training simulations that mirror the realities of counter insurgency operations is also a complex process. For example, although it was highly successful, and involved more than 1,200 military, ex-military and civilian personnel to execute, *Unified Resolve 2018* required almost a year of planning and 2 weeks to set up.

These drawbacks were the inspiration for a completely disruptive new process. [IXTROM Group](#), a leader in situational awareness and information management systems, recognized the need for a faster and more intuitive technological approach to the planning and execution of simu-

lated training environments and the impact of real-time feedback on learning potential. The company, headquartered in Magog, Quebec, was also identified by the Gartner Group a year ago as a Top 10 crisis/emergency management platform.

“One problem with traditional systems is the lack of interoperability for multiple nations, organizations and agencies. Also, the lack of traceability has been a concern for many. Whereas with IXVMS collaboration, communications and traceability is provided in real time within a secure environment,” says Soledad R. Bourque, CEO of IXTROM Group. She notes that, for technologies currently in use, “modifications are usually arduous to implement.” Depending on the complexity of the simulation scenario, she says the compilation of data for analysis – which is the whole purpose of the exercise – has been a cumbersome process in the past.

Next-generation systems are busting the status quo in a big way. Engineers have been able design systems that facilitate all mission types and operations (including joint and multinational), support tactical management, and correlate definitions, models, modification injects, goals and taxonomies, plus incorporate a full gamut of symbols, pictures and documents. Global positioning, Common Operating Picture (COP), action status of injects, and different methods of communication for the development of training and continuous execution flow are also key features in next-gen simulation training.

Other key requirements were ease-of-use (intuitiveness and flexibility) and speed. Users can now easily create, manage, and optimize processes and procedures, deriving lessons learned and best practices through the analysis of every aspect of each event.

## **In 2018, Unified Resolve, an annual computer-assisted Command Post training event (shown above) involved more than 1,200 military, ex-military and civilian personnel to execute, required almost a year of planning, and some two weeks to set up.**

The shift towards a whole-of-government approach to decision making means training simulations must also take into consideration the political and social repercussions of any given decision. For example, in *Unified Resolve 2018*, CAF Public Affairs personnel were tasked with responding appropriately to a fictional news story that an errant artillery round had hit a mosque.

The exercise simulated the resulting chatter on social media and forced personnel to respond effectively in a high-pressure environment. In the real world, this event could shift public perception and affect future involvement in the region.

Understanding the roles that support personnel play in the larger political landscape and involving them in detailed simulations is part of the reason why significant resources are invested in the initial design of complex exercises. This is also why evolving, next generation solutions that streamline the planning phase will be in high demand.

### **Real-time Monitoring**

“Effective real-time data management is a main factor for success,” asserts Bourque. This is especially important for maximizing learning potential and decision-making

processes. In next-generation training solutions, actions must flow with ease while being monitored and traced. No longer a “wish list” ideal, post-exercise reports are now available immediately after the training session is over – capitalizing on all interactions and deriving relevant lesson learned. The future, as they say, “is now,” and the government of Canada recognizes this, making every effort to assist in the implementation of such revolutionary technologies.

### **Govt Innovation Programs**

Recognizing the need to support innovators, the Government of Canada initiated the IDEaS program to help companies develop their ideas and build a workable prototype.

For companies that already have a developed solution, they decided to assist financially in moving qualified solutions through the implementation phase. To do this, the GOC initiated a program that connects innovators with its departments or agencies, giving them “first crack” at such technological advances.

Through the BCIP (Built in Canada Innovation Program), Government departments or agencies can select from a pre-qualified list of solutions they wish to test out for implementation. Being pre-qualified means the Government has already paid implementation costs for *only the first* department of agency that chooses to implement (and keep) the final solution. IXTROM’s training solution has been pre-qualified, and we are watching to see which department chooses it first. **FL**

*Robin Billingham will continue to report on the implementation of new technology designed to challenge the modern soldier.*



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