

M&S Trends and Interoperability

Over the next few editions, as *FrontLine* discusses Modelling and Simulation (M&S) in the Canadian Defence and Security environment, a number of trends will become apparent. The most evident of these is the tremendous increase in the capabilities of these technologies. It was not so long ago that users had to accept, for example, extremely basic and constrained graphics capability in their simulator systems. Although reasonably realistic imagery was achievable, it was costly beyond the limited means of most Canadian military projects. This is no longer the case. Similar advances in computer speeds, memory and protocols are vastly improving capability, giving users a lot more “bang for the buck”.

Less obvious has been “behind-the-scenes” progress on interoperability among the simulations of various services, nations and disciplines – made possible through the adoption of such standards and protocols as Distributed Information Systems (DIS), High Level Architecture (HLA), and Commercial-off-the-Shelf (COTS) standards. Increased emphasis on “coalition” operations now makes it possible for the forces of different nations to conduct joint and combined exercises with their counterparts overseas, without any having to leave their home stations. In addition to the obvious cost savings, the relative ease of being able to do this means that we will be seeing more and more “virtual” multi-player exercises in future.

There is a relatively long history of simulation in training- and tactical-level combat development, but there is now an increased emphasis on branching this out to include other activities. This is a result of the increased awareness of M&S capability in the user and management communities. The three environmental services are now required to include an M&S component in the acquisition process of any large capital project in order to reduce risk and shorten project implementation. We can see this extending to project management, requirements analysis, engineering development, logistical support, life cycle management and personnel.

Within DND, there have been a number of significant developments in order

to rationalize the growing M&S capability and application. There is now a DND Synthetic Environment Coordination Office (SECO) and a CF Experimentation Centre (CFEC). In addition, each environmental command has a formal M&S Strategy.

Another area of synergy is an increasing trend to cooperation and partnership among the military R&D community, the environmental services, other government departments, industry, and academia. There are now formal working groups at national and international level. This cooperation is especially evident given the emphasis on overall “homeland security,” rather than pure defence, with M&S being increasingly applied to law enforcement, civil emergency planning and first responders.

During the course of this series, we will be dealing in more detail with each of these trends. We hope to invite comment from and discussion among the M&S community. **FL**

With 35 years in the military experience, LCol (ret) Dennis Hopper has been involved in operations and training with both Canadian and US Armies. As Director of Simulation and Training Systems for Simtran Technologies Inc. (now FATS Canada), his team developed most of the missile and armoured vehicle simulators currently in service with the Canadian Army. Doc is presently a consultant in Ottawa and local rep for FATS.

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