CAX

Phil Draper, the Joint Warfare Centre's Head of the Computer-Assisted Exercise (CAX) Support Branch, discusses the modelling and simulation systems in use at the Centre.

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Mr Draper, thank you very much for taking the time to speak with us. We talked about the Joint Warfare Centre's (JWC) simulation technologies in an interview in 2018. From a training standpoint, what is new in the JWC's virtual battlespace?

— Four years have certainly flown by; it seems like only yesterday that we last spoke. We have recently tested and accepted version 6.5 of our core simulation, the Joint Theater Level Simulation–Global Operations (JTLS-GO). This version of the model continues to enhance the JWC's CAX ability to represent very large-scale, multiple joint operations area (JOA) scenarios.

One of the key features of NATO's vision for future exercises is the representation of operations at very large scales with multiple corps, thousands of air platforms and dozens of maritime vessels. It is crucial for us that our simulation systems are able to address this requirement. However, we also need to prepare the complex databases that reflect these forces. Members of my branch have been working hard to realize the vision for a NATO order of battle (ORBAT) data inventory. This system is designed to simplify the reuse of data and ensure that the creation of accurate force structures and unit capabilities is as efficient as possible.

How does the multi-domain operations approach affect CAX?

— Multi-domain operations are extremely challenging to execute in both the real world and the exercise environment. Much of that challenge comes from the requirement for our training audiences to execute complex planning, communication and execution processes. To practice these activities in a synthetic environment, it is essential that we have a comprehensive, truly joint simulation capability. This ensures that we capture and portray the roles of all the contributing domains in a realistic representation of the interactions of capabilities required to deliver operational effect. JTLS-GO is actually uniquely suited to the representation of these kinds of operations. If we prepare the appropriate exercise environment and provide the required human expertise, we can support this area of operational art very effectively.

How do you make sure you adapt to the changing operational requirements and simulate today's battlefield?

— We are critically dependent on the relationships with our training audiences and the component commands. We work collaboratively

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The CAX Support team during Exercise STEADFAST JUPITER 2022.
Photo by JWC PAO

with these organizations to ensure that our data regarding operational capability is as accurate as possible. Within the JWC, we also rely on the Opposing Forces (OPFOR) Branch to confirm that the capabilities required to challenge the exercise participants are reflected in the orders of battle we build, the capabilities of the equipment the simulated adversary deploys, and the doctrine under which they operate.

The JWC CAX Branch is also deeply involved in the evolution of JTLS. We chair the Operational Authority Board for the system on behalf of Allied Command Transformation. This board assists the international user community in defining and prioritizing changes to the model. These modifications are essential in ensuring that our simulation toolset meets the requirements of representing a continuously evolving battlespace.

The JWC collaborated with Jordan this year as part of the Mediterranean Dialogue. Can you tell us a little more about that?
— The JWC CAX Support Branch responded to a request from the NATO Defence Capacity Building (DCB) community at NATO Headquarters for assistance in assessing a project in Jordan. The Jordanian Defence Force is undertaking a modernization programme associated with its simulation and training capabilities. Jordanian officers visited the JWC and

received extensive briefings regarding NATO's approach to computer-assisted command post exercises and how we employ simulation and media to support these endeavours. The JWC CAX staff then travelled to Jordan to review the current simulation technologies available to the country, and subsequently made recommendations to the DCB programme officers regarding the most useful areas for investment.

We were all extremely impressed with the professionalism and commitment of the Jordanian personnel we worked with, and the

event proved to be a truly collaborative undertaking. The JWC personnel learned much from the Jordanian approach. Their focus on real-world challenges and realistic scenarios was particularly interesting.

Is there anything you would like to add?
— Thank you for the opportunity to contribute to the JWC's wider communication initiative. I am extremely proud of my branch's small-but-important contribution to fulfilling the JWC's role in Alliance security. ✦

Phil Draper briefing the Jordanian officers.
Photo by Yrjan Johansen