

## Raytheon Enterprise Modelling and Simulation (EMS)



Raytheon Australia has significant experience in the engineering and development of complex simulation systems and has the capability to rapidly develop simulation entities ranging from individual components to complete systems.

The Raytheon Company Enterprise Campaign known as 'Enterprise Modelling and Simulation' (EMS) is the cornerstone Modelling and Simulation (M&S) capability of Raytheon Australia. M&S is a critical enabling technology used to predict and compare system designs to improve them, validate them and reduce technical, cost and schedule risk.

EMS is a Raytheon developed capability allowing users to visualise, link together and analyse the output of multiple simulations and tools. The approach allows not only Raytheon Australia to leverage assets throughout the company but also to include tools and assets of customers and partners into coherent, federated systems.

As an industry provider of customer focused solutions, Raytheon has developed many of the highest-fidelity models

and simulations of defence and intelligence systems. The EMS Enabling Technology initiative integrates and makes generally accessible selected models and simulations of the highest validity from throughout the enterprise in order to virtually realise future integrated battle spaces.

EMS provides a distributed interactive environment accessible from any computer through a virtual private sub-network of Raytheon's global intranet, ORION and to Raytheon Australia through iORION. EMS therefore enables mission and systems solution providers throughout Raytheon to achieve their M&S objectives more efficiently through standardisation, configuration and reuse.

The EMS global network, known as the Grid, supports experiments allowing assessments of command, control and communications (C<sup>3</sup>)

concept of operations (ConOps) and intelligence, surveillance, reconnaissance, targeting and effector technology solutions from throughout industry and the government.

Raytheon Australia is the latest node in this grid, and because the EMS Grid is a global network, this capability extends to our customers, business partners and coalition allies. In addition to a virtual battle space, the EMS Grid provides access to standardised and configured modelling and simulation hardware and software with detailed descriptions, architectural and test artefacts and instructions for operation and composition, i.e. reuse. Raytheon's engineering and IT communities are working together to develop this environment.

EMS Grid is hosted on a Virtual Private Network (VPN) that provides access to the Raytheon M&S repository and exercises an agile federation for distributed M&S. EMS knowledge transfer is devoted to the reuse and composability of configured M&S software and hardware.

The M&S components have been exercised and verified through mission focused Raytheon Distributed Experiments (RayDXes). The EMS infrastructure combines COTS and GOTS middleware into a standardized framework that is used to integrate and operate disparate M&S.

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*Customer Success Is Our Mission*

