

Decentralised Data Fusion

A real solution to fusion at the platform, multi-platform and battlespace levels

- Network-centric warfare enabler
- Scalable, flexible and survivable
- Battlespace data fusion
- Shared situational awareness
- Proven through real-world demonstration

BAE Systems Australia's Decentralised Data Fusion (DDF) technology is an effective solution for compiling a timely and accurate common operational picture across multiple dissimilar sensors and platforms networked in a decentralised architecture.

Distributed, networked assets in the air, land and sea domain, sensing, fusing and communicating timely and accurate data is a common view of future sensor-platform operations. This view emphasises the requirement to achieve operational goals through networking systems or systems of systems. The concept of a central processing facility to disseminate and redistribute data is often flawed due to requirements on efficiency, cost, timeliness, flexibility and survivability.

Unlike centralised concepts, decentralised networks require no central processing, no central communications and no global network knowledge at individual network points. This results in an architecture and corresponding fusion system that is scalable, flexible, modular and robust, with no single points of failure.

BAE Systems Australia has matured its DDF capability by applying it in a series of increasingly complex demonstration programs and evaluation exercises. The most recent was a demonstration of battlespace data fusion capability as the culmination of the DDF Capability and Technology Demonstration (CTD) project.



Key capabilities demonstrated in the DDF CTD were the fusion of data from dissimilar sensor types, the ability to integrate legacy Australian Defence Force sensors into a DDF network and to dynamically add and remove sensors and platforms from the network, allowing networks to be re-configured in real-time to address the changing face of the battle. The DDF CTD included two live mixed air-ground DDF network capability demonstrations at Puckapunyal Military Training Area involving a network of two UAVs, a Weapon Locating Radar, Ground Surveillance Radar and Field Observers collectively compiling a tactical picture of manoeuvring ground targets.



BAE Systems Australia's DDF technology has also been identified by Lockheed Martin as a potential solution to the Tier 2 (multi-ship) and Tier 3 (battlespace) data fusion requirements for the Joint Strike Fighter (JSF).



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