Simultaneous Localisation And Map-building
SLAM

- Providing a truly autonomous real-time navigation, mapping and precision target location capability

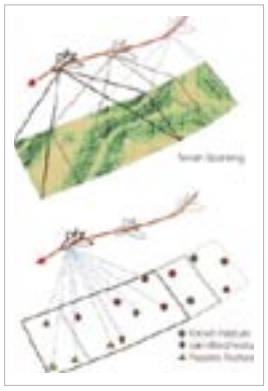
Simultaneous Localisation And Map-building (SLAM) provides autonomous systems with a real-time navigation, mapping and precision target location capability that is truly autonomous - with no reliance on external information such as Global Positioning System (GPS) or a-priori map data. SLAM was developed for a UAV environment by BAE Systems Australia, with initial support from BAE Systems' Advanced Technology Centre and the University of Sydney Australia Centre for Field Robotics (ACFR).

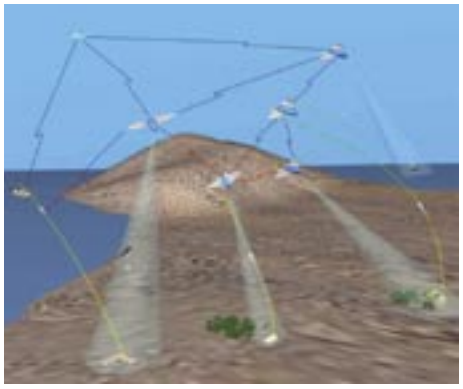
Navigation and mapping
SLAM allows a platform system to use real-time data gathered by onboard sensors to generate a correlated map of the terrain, whilst simultaneously localising within that map. This allows truly autonomous, accurate navigation with no reliance on GPS or a-priori map data.

Precision Targeting
SLAM is a valuable aid for precision targeting on platforms as it provides an autonomous feature location capability. SLAM delivers real-time, target location accuracies equivalent to those achieved currently through off-line, non-real-time, man-in-the-loop geo-registration techniques.

Application
BAE Systems Australia has integrated SLAM into the Kingfisher UAV system for supporting demonstration activities, as part of the Future UAV for Reconnaissance and Interdiction Capability Technology Demonstration (FURI CTD). The FURI CTD demonstrates SLAM on single and multi UAV utilising passive electronic warfare and electro-optic sensors for targeting. FURI uses passive sensors with SLAM to develop a capability that meets stealth Intelligence, Surveillance and Reconnaissance (ISR) requirements.

SLAM has been integrated with BAE Systems Australia's Decentralised Data Fusion (DDF) technology to deliver multi-platform co-operative SLAM. The powerful combination of stealth with SLAM across multiple platforms allows multiple platforms to have dissimilar sensor fit-outs and payloads in order to meet mission objectives.





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