

Case Study: DCGS-MC Semantic Wiki

BACKGROUND:

The Distributed Common Ground System – Marine Corps (DCGS-MC) integrates intelligence, surveillance, and reconnaissance (ISR) processing and exploitation capabilities into a single, net-centric environment. DCGS-MC supports intelligence analysts across the Marine Force by making ISR data more visible, accessible, and understandable. The DCGS Integration Backbone (DIB) serves as the basis for interoperability between the various services' DCGS programs.



PROBLEMS:

- Analysts are overwhelmed by data
- Multitudes of unstructured documents that are not readily searchable
- Hard to expose DCGS-MC data to other DIBs
- Duplication of analysis and reports instead of collaboration

SOLUTION:

Modus Operandi (MO) developed a system that allows Marine Corps intelligence analysts to rapidly search large amounts of unstructured data, find critical patterns, and other essential elements of information and share their work with other analysts. The MO developed system is based on a semantic wiki that makes data more visible, accessible, and understandable. The wiki supports a collaborative environment and avoids much duplication of effort yet aiding individual efforts. Adding semantic capabilities to the basic wiki provides finer grained, more accurate searches, as well as providing the capability to automatically generate pages and some page content. MO coupled the semantic wiki capabilities with text analytics to address the problem of integrating relevant information from unstructured documents. MO's text analytics: 1) identifies events of interest to analysts such as IED events, observation events (sighting of a high value individual or HVI), and travel events (movement of an HVI from one location to another), 2) transforms them into Resource Description Framework (RDF) "triples", and 3) persists the RDF in a triple store that supports advanced queries. Analysts can automatically create pages for these events by importing them into the semantic wiki from the triple store. Collectively these analytic tools combined in the semantic wiki expose DCGS-MC data to DIB searches without the need to manually create metadata cards (a means to identify data) and insert them into a DIB metadata catalog (MDC).

RESULTS:

- Reduction of analysts' workload through automatic extraction of key events
- Semantic searches provide more accurate and finer-grained results
- Closer collaboration between analysts
- Improved situational awareness
- Less training required for users familiar with wikis
- Reduction of duplicate analyses and intelligence products



MELBOURNE, FL

ABERDEEN, MD

709 S. Harbor City Blvd., Suite 400

Melbourne, FL 32901-1936

Phone: (321) 473-1400

Fax: (321) 473-1499