

SemanticFusion™: Data Fusion, Analysis, and Planning using Semantic Technologies and Agent Approaches

Concept

- Semantic Fusion approaches data fusion from an ontology and concept modelling perspective, rather than a traditional low-level data analysis approach
- Utilises Inferencing, Reasoning, and Planning capabilities to exploit the inherently structured ontology approach for representing, storing, and manipulating content, including consideration of certainty and time

Approach

- Builds on established Semantic Web and NLP technologies and standards
- Introduces novel Agent & Planner approaches to support Data Fusion as well as Concept extraction - leveraging ontology's to support data aggregation, processing and concept identification.
- Information Collection and normalisation via Semantic Backplane, plug-in architecture, and Agent based processing

Benefits

- Compatible with semantic approach identified by DSTO staff, and with DOD Global Info Grid, FCS Future Combat Systems models, US Navy FORCENet model, etc.
- Capable of higher level representations and analysis than traditional Data Fusion approaches. Working with concepts not data supports higher order information fusion and reasoning then previously possible.
- Builds an extensible, component-based, Semantic Backplane architecture to simplify system integration, and capability expansion.

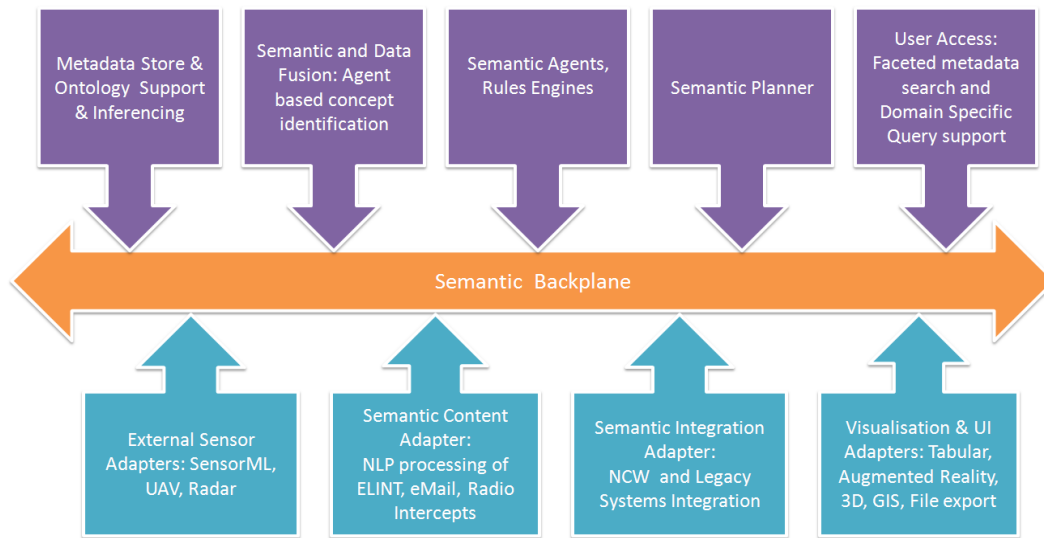
"...The SemanticFusion concept is based upon the idea that improved situation awareness requires improved high-level data representations and reasoning capabilities. It approaches data fusion from ontology & concept-modelling perspective, rather than a traditional data-analysis approach. Semantic Web technologies provide extensible high-level data representations, advanced query capabilities

Key Business Opportunities the SemanticFusion Platform can also be applied to:

System provides extensive capability to integrate multiple data sources and silos in real-time across disparate domains	Reduces operator cognitive fatigue by high performance information processing and simplification
Supports high-level concept extraction for your business/application needs across high volumes of information	Can integrate multiple disparate bits of information to synthesise an accurate "big picture" overview – deals with concepts not data!
SemanticFusion can drive automation, monitoring, productivity in repetitive, complex monitoring situations	Supports multiple authorised user profiles and access levels to allow controlled input and access.

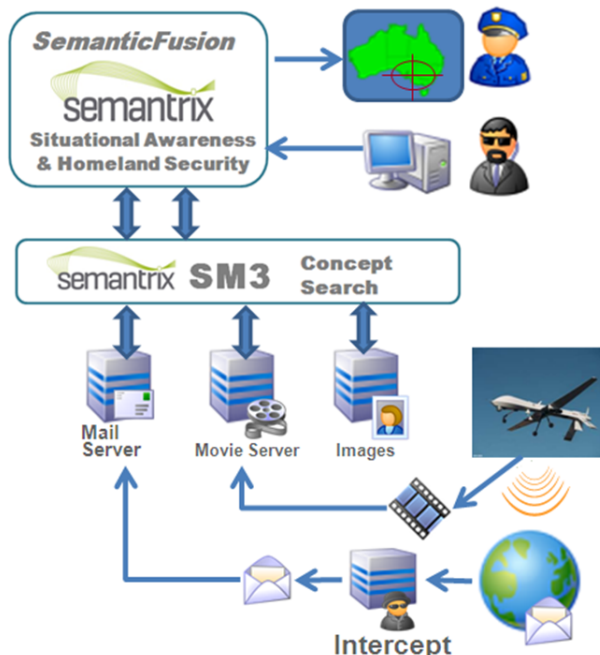
...The use of autonomous agent technologies provides vastly superior approaches for modelling and implementing operator interaction, data fusion and concept extraction algorithms...

Semantic Fusion Architecture



"...Our semantic agent approach is an ideal mechanism to monitor incoming information changes, triggering higher-level fusion and concept processing, and supports monitoring user and system defined "Conditions of Interest" (Col's) to automatically provide appropriate user alerts, displays, and responses."

- SemanticFusion delivers:
 - Concept level data fusion – real-time & scalable
 - Semantic /Conceptual representation of the environment and events
 - Agent based monitoring of user defined "Conditions of Interest"
 - a dynamic extensible model for interacting with users and presenting information
 - A Semantic Backplane to facilitate integrating legacy systems and transferring concepts between SemanticFusion systems and mobile nodes
- SM3 delivers:
 - Annotate and Cross-Reference security/UAV video, images, documents, reports etc.
 - Concept search across multiple information types – email, video, etc., by place, time, person, organization etc.
 - Extract and tag text with names, organizations, places etc.
 - Resolve tags to standardised names for consistent tagging and retrieval
 - Links media assets such as video to other relevant media or text assets



Interested in using or investing in the SemanticFusion™ Platform? Call us to find out more

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