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## *AIDAN Information System Fact Sheet*

### **Problem**

Current detection and extraction algorithms require well-formed definitions of the elements (entities, relations, events) and rely on manual annotation of retrieved information to support or reject analyst's hypotheses.

### **Solution**

The Aidan system, interfaced with the VortexT technology will detect and characterize categories of entities, relations, and events and organize them within three individual data sets for cross correlation. The extracted information is cached in a knowledge base that will enable automatically finding patterns and searching for critical information. Not only will a joint learning approach improve accuracy, but it will also enable tighter, more specific classes with the overall analysis of text much more powerful.

### **History**

The Aidan system was originally developed for the NGA and DoD regional stability mission and readily adapts and transfers to new domains. It parses context from large data sets of finished analysis (or theory) documents in a joint manner to account for interdependencies. The base of the Aidan system is a multi-dimensional system visualization which reduces a 3-D visualization to dimensions of (1) theory or hypothesis that provides context (2) scenario or "what if"; and (3) evidence or collection to support or disqualify the theories and scenarios that are extent in assessed fact.

VortexT is the ideal engine to program the joint lustering provided by the tri-datastore of the Aidan system. The VortexT Analyzer's flexibility adapts to the user, allowing analysts real-time visualization of the interrelationships within the data resulting from multifaceted analysis (i.e. every word) in each of the ingested target data files to determine their similarity, thereby incorporating the context and concepts within the data into the search and analysis. The VortexT Analyzer's full word analysis vastly exceeds traditional faceted and keyword capabilities, automatically identifying significant documents. VortexT is a quantum advancement making keyword searches obsolete.

### **Technical Objectives**

The objectives of this program are to demonstrate and characterize the combined Aidan-VortexT system and to generate the appropriate metrics to show quantitative improvement through advanced joint learning over either the VortexT system alone or current non-joint learning approaches.

Technical objectives include:

- Build an instantiation of the combined Aidan-VortexT system on a stand-alone, three server system to demonstrate the feasibility of jointly correlating unstructured data to complex theories and evolving scenarios with reasonable response times.
- Using an open source example from an area of responsibility.
- Based on the results of the example study, specifications for a Phase 2 production system, a prototype version will be developed.

## **Conclusion**

Our strategic objective is to discover the unknown and deliver faster, more predictive insights to decision makers. Advanced analytics supports a fundamental shift across the IC and the military services toward object based production. Then, object by object, question by question, together, the Community builds a rich reservoir of continuously updated content so we can give our customers the most timely, deepest insight.

## **Contact Information:**

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