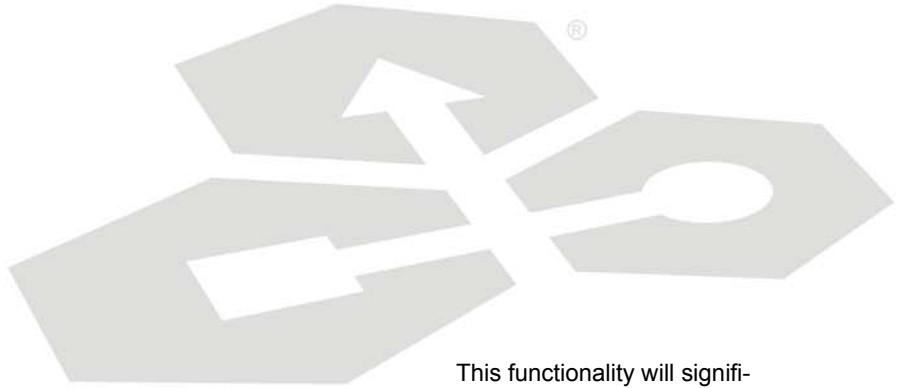


ATPD

Adaptive Toolkit for Pattern Discovery



Collaboration is the hallmark of efficient, large-scale enterprises—collaboration among the enterprise's offices and employees and, equally important, collaboration among the system of often heterogeneous computer-based technologies that share enterprise data and information. Like employees, these technologies must be able to communicate and must be able to grow and adapt to the changing necessities of the enterprise. For enterprises like the Air Force and Department of Defense, who use complex, large scale computer systems that tie together an array of advanced technologies—systems and technologies that are perpetually undergoing development—this is a particularly significant need.

To meet this challenge, KBSI developed an Adaptive Toolkit for Pattern Discovery (ATPD) that uses an innovative, hybrid approach to automate the discovery of complex system-of-systems data utilization patterns from structured and unstructured text sources (e.g., *.txt, *.doc, *.rtf, *.pdf, and *.html). ATPD focuses on extracting the semantic information that inheres in these text sources and the manner in which they are utilized. In other words, ATPD uncovers the ontologies that define how data is shared and uses these ontologies to dynamically update the reference knowledge models and repositories that are leveraged for developing, integrating, and extending enterprise applications.

The emphasis on developing and refining knowledge repositories compliments the overarching Knowledge Management Framework (KMF) architecture that is recognized by key organizations within the Air Force, like the Cape Canaveral Air Force Station (CCAFS), as an effective knowledge-based integration framework. KMF has demonstrated its success in deploying and sustaining advanced applications based on KMF's use of a common domain ontology. The ATPD technology will help the Air Force and DoD build upon KMF's success. In addition to providing the mechanisms for extracting the ontologies and metadata used in developing the enterprise knowledge repository, ATPD also provides the means for visualizing, analyzing, and managing these elements.

This functionality will significantly reduce the time and effort needed for extracting and harmonizing knowledge from distributed, unstructured and structured data sources and the time and effort needed to facilitate knowledge sharing, communication, and semantic integration. ATPD will greatly enhance the development of the Air Force's large-scale enterprise and system-of-systems application environments and the progress of ongoing efforts like emergency response management and requirements compliance management. ATPD will also benefit distributed commercial organizations that require advanced knowledge management, collaborative planning and scheduling, supply chain management, and business intelligence.

