

# Transition **Impact**

## Effective Text Exploitation For Improved Situation Awareness



- **Intelligence analysts suffer “data overload” in searching for threats**
- **Automated text analysis used to overcome data overload**
- **Information Extraction (IE) technology automates text analysis of entities, relationships and events, leading to faster analysis, greater situational awareness, and more informed/effective decision making**

## Air Force Requirements

Air Force Intelligence organizations need to learn about potential threats in a timely fashion. However, this job requirement is made difficult because of the problem of "textual data overload"; analysts are inundated with free-form text messages, documents, and open source texts. Intelligence analysts need help finding potentially relevant information in very large volumes of text quickly, and at a high level of precision and recall. Information Extraction (IE) technology is being investigated under the SBIR program as a means of automating text analysis, and making it a more effective, conceptually oriented process. Some desired applications of IE include automated generation of consolidated entity (e.g., person and organization) profiles; enabling the automated analysis and visualization of entity, relationship, and event information in text; information discovery; and automated alerts.

## SBIR Technology

The basic requirement involves analyzing unstructured text in order to extract entities (names of people, facilities, locations, organizations, etc.), entity attributes (e.g., age, gender), relationships and associations between entities, and events. Information Extraction technology supports this requirement. Other important IE requirements include information fusion (merging all information extracted on a given entity or event, across numerous documents, into a consolidated



entity or event profile), and automated porting of the IE technology to new topic domains. These requirements are being addressed over a series of SBIR efforts and enhancements. The technology has evolved from simple entity extraction, to more complex relationship and event extraction.

## Air Force Transition Payoff

IE technology developed under the SBIR Program is currently being integrated into an AF application, and will be evaluated by Intelligence analysts in their operational environment. Initial feedback is positive. Anticipated benefits include the ability to do faster analyses, which will reduce our decision cycle time and reduce the chance of surprise; higher-quality Situation Awareness; discovering unknown information relating to potential threats (improved knowledge of threats); and more informed/effective decision-making.

### SBIR Topic:

#AF 00-127

### SBIR Partner:

Cymfony, Inc., Williamsville, NY

### Title:

Intermediate-level Event Extraction for Temporal and Spatial Analysis and Visualization

### Technical Project Management:

AFRL/Information Directorate

### SPO Transition Office:

AFRL/IFEA, "Intermediate Text Exploitation ATD (ITEA)"

### Contract #:

F30602-01-C-0035

# SBIR

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