



Inxight Extraction for Counterterrorism and Intelligence

"We see Inxight as a key strategic partner, as there is unquestionable value in how their technology, particularly their language capabilities, can help government and commercial organizations identify important information. A critical factor in our decision to work with Inxight is that it has already proven that its solutions deliver 'high fidelity' results in very demanding information environments."

- In-Q-Tel

Streaming text, message traffic, cables, reports – the data that intelligence analysts have to contend with is voluminous. And analysts don't always know which piece of text may be connected to another piece. Any of this data could be the next terrorist plot, the next bomb plot, the next dirty bomb, the next assassination attempt, etc.

Today, many analysts are still "hand-chunking" text manually to load meaningful elements (names, places, organizations, geocoordinates, etc.) into databases for storage and search. It's time that law-enforcement and other government agencies automate this process.

By using Inxight Software's counterterrorism solutions, analysts and field personnel can automatically gather information and identify, extract and classify mission-critical entities (people, places, addresses, dates, organizations, weapons, vehicles, etc.) in unstructured text in multiple languages, providing faster, more accurate actionable intelligence.

With Inxight, there is no more hand-loading of data into large repositories and no need for highlighters on hard copy. Inxight's solutions encompass the elements of successful counterterrorism and intelligence analytics: acquisition, extraction, and visual exploration.

Collection - Analysis - Production - Dissemination

Once information is gathered using the Inxight SmartDiscovery™ Awareness Server federated search product or other data collection methods, Inxight aids the Intelligence Cycle

by categorizing, summarizing and clustering information. Mission-critical data elements can then be extracted, stored appropriately, and linked within and across documents.

Entity extraction is an essential tool for operations that require link analysis, event tracking and order of battle analysis. Inxight ThingFinder® Professional is a powerful text-analysis application that automatically identifies and tags more than 40 entity types in a document, including weapons, facilities, vehicles, geocoordinates and Military Grid Reference System (MGRS) numbers. Relations and events are also automatically identified, including familial relations, travel events and personal attributes. Intelligence Information Report (IIR) format-specific information is also processed, such as distribution control information and report topics.

ThingFinder Professional can also recognize list-based entities, such as people of interest, and custom entities, relationships, events and concepts based on patterns in text, leveraging Inxight's sophisticated language analysis as the starting point for pattern-building.

After this information is stored, agencies can then use Inxight's StarTree® to visualize, reveal and explore relationships. This combination enables government intelligence agencies to quickly find and disseminate critical information buried in mountains of intelligence, locating terrorists, their whereabouts, and determining their actions, associations and future plans.

Inxight Extraction Features

Extraction and Classification

Inxight ThingFinder leverages Inxight's core understanding of natural language processing – language-aware tokenization, part-of-speech tagging and noun phrase identification – to automatically extract and classify entities, relations, events and attributes in unstructured text.

Inxight ThingFinder Example

DOCUMENT 1: (UNCLASSIFIED) FAWIZ AL ((RABBATI)) IS RECRUITING PEOPLE IN THE AL-KRKH DISTRICT, MOSUL TO CONDUCT COORDINATED TERRORIST ATTACKS AGAINST COALITION FORCES FOR \$500. THE MAIN WEAPONS USED IN THESE ATTACKS ARE ROCKET PROPELLED GRENADES, AND AK-47S. RABBATI IS SIXTY-SEVEN INCHES TALL, AND WEIGHS 185 TO 190 POUNDS. HE HAS A MUSCULAR BUILD AND VERY DARK SKIN. RABBATI OWNS A RESIDENTIAL BUILDING ON SHEIKH FAARQUM STREET. RABBATI RECRUITED JABIL (NAATAN) TO WORK FOR HIM IN 1998. NFI.	
Person	Fawiz al Rabbati, Rabbati Jabil Naatan
Place	Al-Krkh District, Mosul
Currency	500 USD
Year	1998
Weapons	rocket propelled grenades AK-47
Address	Sheikh Faarqum Street
Noun Group	coordinated terrorist attacks coalition forces residential building
Measure	sixty-seven inches 185-190 pounds

Variant Identification and Grouping

Variant identification and grouping allow ThingFinder to accurately classify all relevant entities in a document, even one-word entities, and to provide true counts reflecting the number and location of ALL appearances of a given entity.

Normalization

Normalization takes much of the guesswork out of metadata creation, search, data mining and link analysis processes by creating standard formats (e.g., ISO) for certain entity categories such as dates or measurements.

Relevance Ranking

The entities extracted by ThingFinder are given relevance scores reflecting their importance to the document as a whole, making ThingFinder an essential part of any data categorization solution.

Customization

ThingFinder can be easily extended to identify and extract custom entities, such as names of people of interest. ThingFinder Professional extends the power of customized discovery to unique entity types and concepts, as well as relationships and events (facts), by letting the user define custom extraction patterns using a simple and powerful rule writing language, including regular expression operators, linguistic operators (word stems, part-of-speech tags, phrase and clause boundaries), list matching, input matching filters, case insensitive matching, and much more.

About Inxight Federal Systems

Inxight Federal Systems Group, Inc. is a wholly owned subsidiary of Inxight Software, the leading provider of enterprise software solutions for information discovery. Using Inxight Federal Systems solutions, government organizations can better discover, retrieve and connect with unstructured, semi-structured or structured text. Inxight is the only company that provides a complete, scalable solution to enable information discovery in all major languages. Government customers include multiple U.S. and foreign government agencies, including the Department of Defense, Defense Intelligence Agency, Department of Homeland Security and Commonwealth Secretariat. Inxight Federal Systems Group is based in Reston, Va. For more information, please call 703.251.4429 or email sales@inxightfedsys.com.

About Trinus Technologies, Inc.

Trinus Technologies is an information technology company focusing on the corporate, government, intelligence and medical markets. For more information, visit www.trinustech.com, or call 780.968.1333 or toll-free 877.489.9985, or email sales@trinustech.com

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Technical Specifications

Entity Type and Fact Type Support

Some of the major entity and fact types that Inxight ThingFinder Professional supports include.

- **Entities:** People, Places, Addresses, Cities, Countries, States, Internet Addresses, Vehicles, Weapons, Facilities, Companies, Organizations, Numeric Entities, MGRS, Dates and Times, Noun Groups, and Proper Nouns.
- **Relationships:** Various interpersonal relationships, including: Parent, Children, Sibling, Spouse, Relative, and Associate.
- **Attributes and Appearance:** Person's name and possible Alternate Names and Aliases. Person's appearance-related attributes, including his/her: Age, Dress, Eye Color, Hair, Height, Weight. Attributes of a person not related to appearance, including his/her: Address, Phone Number, Location, Vehicle, Nationality, Affiliation, i.e. with an Organization, Occupation, Possession.
- **Actions:** Events involving a person's or organization's actions, including: Transport something, Drive a vehicle, Destroy something, Train someone, Capture someone, Buy an artifact, Make an artifact, Command an organization, Receive payment, Hire and Recruit someone, Travel to and from a location.

In addition to these entity and fact types, the Intelligence Information Report (IIR) Rule Set can be used to extract information out of documents in IIR format. The information extracted pertains to either specific IIR fields, or to additional relevant information inside the document. Contact Inxight for more details.

Languages Supported

- Arabic, Bokmål, Danish, Dutch, English, Farsi, Finnish, French, German, Italian, Japanese, Korean, Nynorsk, Portuguese, Russian, Simplified Chinese, Spanish, Swedish and Traditional Chinese.

Operating Systems

Inxight ThingFinder is available in both a platform-based solution (SmartDiscovery) as well as in an embeddable SDK. For information on Inxight's industry-standard APIs and available operating system configurations, please visit www.inxight.com or consult your Inxight Federal Systems representative.