



## ATTENSITY INTELLIGENCE TRIPLE SEARCH FOR TEXT ANALYTICS

TRANSFORM YOUR INFORMATION INTO ACTIONABLE INSIGHTS



Intelligence information — including cables, field analyst reports, ship manifests, emails, open source documents and other data feeds — floods intelligence and other government agencies on a daily basis. Unfortunately, most text analysis systems have been limited to coding, indexing, keyword search, or simple entity extractions that are inadequate because of imprecise and unpredictable results. Furthermore, these systems have been unable to fully leverage the breadth of analytic tools designed for dealing with structured information.

Attensity Intelligence Triple Search automates the extraction of events and relationships between entities from free-form text - not only who or what, but why, when, where and how, transforming the text into structured, relational data. With an easy-to-use interface for analyst exploration of these relationships between entities of interest, you get dramatically faster and more comprehensive detection of trends, anomalies, patterns and linkages in the intelligence information and more time to respond to them.

The Attensity Triples engine, the underlying technology behind Attensity Intelligence Triple Search, is a unique technology that can help analysts get to the information they need more quickly and triage what to look at first. The technology finds the people, places and things in a document and the actions, behaviors, tactics and relationships

that tie them together. These relationships are captured in a subject-predicate-object format. For example, in the sentence “US forces infiltrated the base in Afghanistan on Thursday June 14th” we capture the fact that US forces infiltrated the base (US forces: infiltrate: base), that the infiltration occurred in Afghanistan (US forces: infiltrate in: Afghanistan) and that the infiltration occurred on Thursday June 14th (US forces: infiltrate on: June 14th). This relational fact extraction, in combination with entity extraction, provides a richer form of structured data for government and commercial analysis.

Determining the relationships between entities is critical for any application desiring to leverage analytic tools designed to depict these relationships, such as Palantir or i2. Furthermore, unlike structured entity or targeted fact extraction, the Triples engine is not limited to nouns that conform to a known Entity type. This helps in the discovery of new entities that fit an existing trend in the data, such as an emerging terrorist organization or an uncategorized weapon, vehicle, vessel, or individual. Attensity Triples also assist in entity resolution. The context in which an entity occurs can affect its definition, such as “The vehicle manufacturer plans to fire 10% of its workforce” vs. “I witnessed individuals lighting a fire in dry woods.” In the first case, Attensity identifies fire as an ACTION in the context of a triple, while in the second, fire is identified as the SUBJECT and is classified as an entity accordingly.

To assist customers with existing projects involving entity extraction and classification, Attensity utilizes the InXight® Thingfinder® entity extractor out-of-the-box. Attensity’s open architecture also allows you to plug in one or more additional third-party entity extractors that you may already be using. These entities integrate seamlessly into the triples technology, immediately compounding the value of these entity extractions with all the capabilities outlined above.

### HOW TRIPLES ANALYSIS WORKS

#### SAMPLE SENTENCE:

“US forces infiltrated the base in Afghanistan on Thursday June 14th”

#### FINDINGS

1. US forces infiltrated the base  
US forces: infiltrate: base
2. Infiltration occurred in Afghanistan  
US forces: infiltrate in: Afghanistan
3. The infiltration occurred on June 14  
US forces: infiltrate on: June 14th



## FEATURES

- Discover relationships and associations between people to the Nth degree of separation
- Discover people associated with specific actions
- Search for specific actions in a specific location
- Search for specific actions on specific dates and/or times
- Search for specific actions characterized by verb voices
- Explore specific targeted events and find related events automatically – without pre-definition
- Create link diagrams automatically with triples and targeted event extraction
- Out-of-the-box integration with i2, Palantir and other analytic applications

Attensity Intelligence Triple Search combines the power of our triples engine with a wide-range of statistical and linguistic extraction technologies to provide a treasure trove of information – and, just as importantly, a way of unlocking that treasure trove effectively. The repository contains a comprehensive library of metadata, and also supports very scalable, high performance queries on specific criteria against this library of data and relationships. For instance in the screen shot below, Triple Search allows a user to search for documents that not only contain the entity type TERRORIST ORGANIZATION, but also documents that contain narrative semantics such as “... Al-Qaeda claimed the attack on the American Embassy ...”.

Putting it simply, a user can search precisely for documents or records that contain sentences that speak of a terrorist organization claiming an attack, not just documents that contain the words Al-Qaeda, claim, and attack in proximity. Using Attensity Triples to pull out all the facts, and then paring the results down based on specific criteria enables the analyst to dial up or down the precision and recall on the fly, starting with nearly 100% recall. Such capabilities are unavailable with entity or targeted event extraction alone.

The screenshot displays the Triple Search application interface. On the left, a sidebar lists various entity types such as CITY (5), COUNTRY (15), ENTITY (418), FACILITY (1), GEOPOLITICAL\_LOCATION (13), MODE\_OF\_TRANSPORT (10), ORGANIZATION (29), PERSON\_NAMED (14), PERSON\_OTHER (67), TERRORIST\_NAME (1), TERRORIST\_ORGANIZATION (10), and WEAPON (19). The main results pane shows several document entries with titles like 'DEBKA headline\_4315' and 'DEBKA headline\_1544', each with a brief description and a score. A callout box points to the results pane with the text: 'Further refine search results by entities or events of interest.' On the right, the 'Advanced Search' panel is visible, featuring sections for 'Triples Search...', 'Event Search...', 'Proximity Search...', and 'Query Syntax...'. The 'Triples Search...' section includes fields for PHONENUMBER, TERRORIST\_NAME, TERRORIST\_ORGANIZATION, TIME, CITY, and COUNTRY, along with logical operators (OR, AND) and a checkbox for 'In Same Triple'. The 'Event Search...' section lists event types like ATTACK, ILLICIT\_COMMERCE, MEETING, MET\_WITH, and PLOT. The 'Proximity Search...' section has fields for 'these key words:' and 'within this range:'. A callout box points to the 'Triples Search...' section with the text: 'Advanced search interface, enabling search by triples, for example - terrorist organization claiming attack.'

Attensity Government Systems (AGS) provides semantic technologies and software applications that enable government agencies to quickly find, understand, and use information trapped in unstructured text to drive critical decision-making. AGS' solutions pre-integrate nouns (entities) together with verbs, combining leading semantic technologies, such as Inlight ThingFinder, with Attensity's unique exhaustive extraction and other semantic language capabilities. This creates a unique capability to see important relationships, create link analysis charts, easily integrate with other software packages, and connect the dots in near real-time when time is of the essence. The comprehensive suite of commercial off-the-shelf applications includes intelligence analysis, social media monitoring, voice of the citizen, automated communications response and routing, and the industry's most extensive suite of semantic extraction technologies. With installations in intelligence, defense and civilian agencies, Attensity enables organizations to better track trends, identify patterns, detect anomalies, reduce threats, and seize opportunities faster.