



TANGO v1.2.6: Software Product Specifications



**Intelligence Analysis.
Corporate Intelligence.
Fraud Investigations.**

**Uncover Connections.
Prevent and Disrupt Criminal and Fraudulent Activity.**

Knowledge That Empowers Decision Making.

At a glance

Tango is a web-based all-source intelligence analysis platform for collaborative linking and analysis of data from multiple sources. Tango links and organizes structured and unstructured data allowing analysts to discover connections and patterns within the data and across datasets. Tango's UI is based on modular widgets and user created data processing workflows that enables it to be rapidly customized to meet specific visualization and processing requirements.

The Tango software links, organizes and visualizes data from multiple sources to help answering who, where, what, when and why (the 5 W's) of intelligence analysis. Tango provides a workflow capability to filter data and answer these questions.

Typical Purchasers of Tango are Government security, defense, intelligence and law enforcement organizations for use in Tactical Military Programs, Federal and State Intelligence Fusion Centers. Commercial entities use Tango as a corporate intelligence and knowledge management application to discover operational risks, advance their market share by capturing and using market and competitive intelligence. Financial institutions use Tango to protect against fraud and to comply with regulations.

Overview

Tango brings multiple sources of data together into a semantic graph and keeps track of changes in the data. Tango connects to external data sources held in SQL databases, RSS feeds, document datasets, media files, and data accessible via web services. Built-in templates allow for uploading datasets. Standard reports, non-standard text reports, video and images can be imported into Tango. Biometric records can be queried from Tango and selected records can be uploaded on a need-to-have basis.

Data Analysis Functions

Tango can perform the following crime analysis functions: data queries, temporal analysis, data/text mining, spatial-temporal analysis, pattern analysis, network analysis, link analysis, toll analysis, spatial queries, spatial joins. Tango cannot perform statistical functions at this time.

Intelligence Analysis Functions

Tango can perform the following intelligence analysis functions (see attachment "Tango as Collaborative Intelligence"): association/network analysis, data/text mining, link analysis/flowcharting and telephone records/toll analysis. The Text Analytics function allows users to create topic maps (sets of terms and topics to which they belong) and tag documents and reports based on the topic map. Users in the field can create and maintain the topic map, in a collaborative development, and the administrator can moderate the topics.



Base Model Functionality

The full system usage is included with the base model. Additional functionalities such as Face Recognition and Soft-biometrics similarity search can be added with Add-ons.

Data Import & Export

Tango allows for uploading text, PDF, excel, photograph, AVI video, MP3 audio files, email messages and RSS feeds. Data can be exported to the following formats: KML (static), KML (live), GraphML and Excel/CSV.

Auto-Flagging

Users receive alerts when changes within the user-designated “watch lists” occur, such as new information is linked to the pages or the page attributes change. Alerts are displayed on the user’s homepage dashboard widget and notifications are sent by e-mail or chat messages. Users can also set progress group indicators.

Geocoding

Tango can perform automatic geo-coding using a TangoApp that recognizes locations looked-up on the NGA Gazetteer containing lat/long coordinates for approximately 5 million points of interest. When using Google Maps to display geo-located entities, the automatic geo-coding of an entity can be manually corrected, if needed.

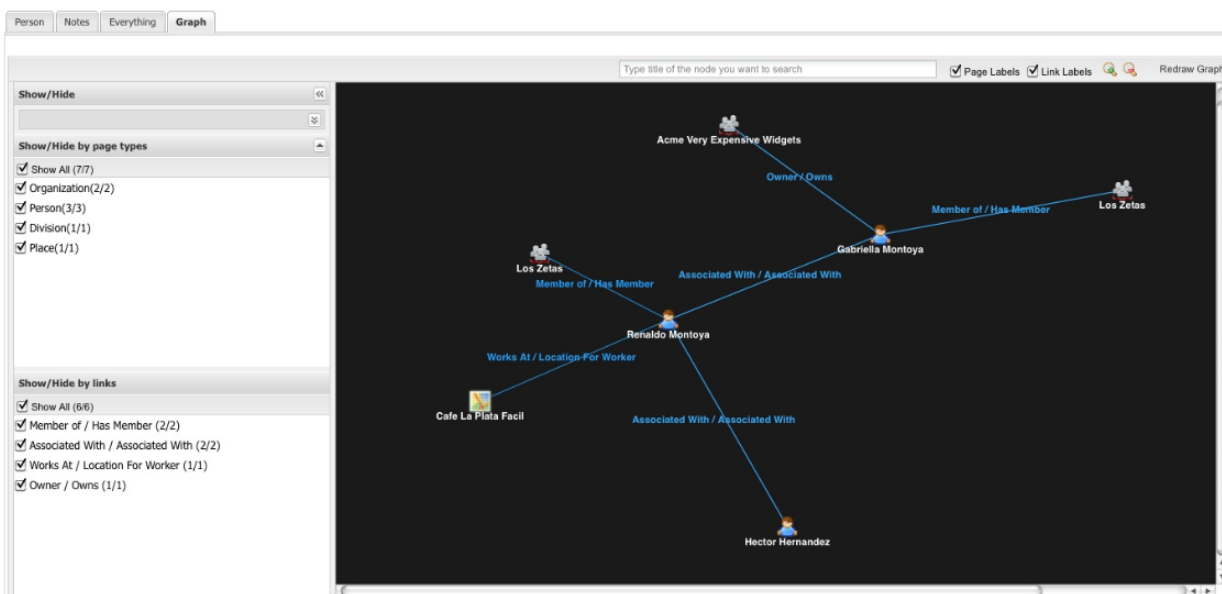
Online Map Layers

Tango links to OGC map layers. Map widgets allow users to add/delete OGC Map Servers, select/unselect individual map layers from a particular server and display the selected map layers. Results of Tango analytical workflows can be saved and displayed as layers, allowing visualization of multiple OGC layers as well as multiple workflow results sets simultaneously. Tango can also serve as geospatial map layers to other tools based on its semantically integrated data.

Labeling

Tango can tag pages with labels, which allows analysts to record reliability, validity and sensitivity of the page. Tango keeps the link to the source of information, the date the

information was entered and the evidence to support the associations. Evidence may include video clips, map chips, photographs, scans of hand drawn sketches, and hand written documents. Information sources have their own Tango pages that capture attributes of the source and the relations to the source and other sources. This information can assist the all-source analyst in the assessment of the validity/plausibility of information contained in the report as well as in the determination of circular reporting, Tango filtering workflows can be built to search for information based on the source description (source number, placement, access, and reliability assessment) and can perform search based DOI (Date of Information) and any identification number contained in the report.



Open Source Intelligence

Tango can link to Open Source Intelligence databases, ingested via various modes. For RSS feeds, the administrator can add the feed URL via the UI and the RSS TangoApp will parse the text and upload it as a document. A browser bookmarklet can be used to directly upload a web page into Tango while browsing it. Also Tango can read in e-mails from any e-mail account, and can periodically scan an inbox for new mails and upload them as documents. This feature can be used with commercial open source intelligence services like Stratfor.

Typical Outputs

Tango produces customizable reports based on report templates built with Jasper reporting engine. A Report TangoApp responds to user requests to generate various report types. The TangoApp processes different templates available (Person, Organization, Facility, Events, Area of Interest). Each Jasper Report template is associated with one or more data sources, built to provide data to complete the report templates. Tango can create both single concept and multi-concept pages that include map visualizations resulting from workflows. When a user requests a particular report, the template is pulled along with the data source, provided to the Jasper reporting engine. The reporting engine populates the

template and generates a printable version of the report in various formats such as pdf, csv. Jasper Reports use the GNU Lesser General Public License (LGPL).

External Reporting

Tango uses JasperReports, that can write to a variety of targets, such as a screen, a printer, PDF, HTML, Microsoft Excel, RTF, ODT, Comma-separated values or XML files. This can be used in Java-enabled applications, including Java EE or web applications, to generate dynamic content. For more sophisticated report management requirements, reports can be imported into the *JasperServer* (the interactive report server).

Open Source Data

Tango does not bundle open source data subscriptions at this time. Customers need to make direct arrangements with vendors to subscribe to commercial open source information sources and products. Semandex can work with the information vendor when needed to ensure the data is ingested correctly into Tango.

Technical Information

Hardware, Software, and System Requirements

Tango installation requires quad-core server or above running at 2.5 GHz or faster, 8 GB RAM; 1 TB Disk Space; and DVD-ROM drive for installing the software. The software runs on Windows Server 2008 R2 x64 SP1 and above as well as on Linux Operating System, Red Hat Enterprise Linux v6 (RHEL6). Other required software are Java 1.7 JDK and Microsoft SQL Server 2008 R2 for Tango 1.2 version or Postgress DB for Tango 1.3 version and Apache Tomcat or JBoss webserver. An account on a mail server is required in order to send password information and alerts to users.

System Set Up

Tango can be installed by the customer's IT personnel or by the vendor. There is an Installation Manual with the guidelines to install the software available to customers. The set-up process consists of obtaining a license key, installing the DVD-ROM, complete a Database Set-up information screen, complete a webserver configuration screen and, if applicable, completing the Maps Configuration screen and installing the MS SQL Server or Postgress DB, the Mail Server and creating the database. TangoApps (applications which run within Tango) can be installed separately, if needed.

Data Recovery

The data is stored in the MS SQL Server or Postgress DB. Users keep backups of the webserver for recovering the data in case of a crash. Semandex does not keep the user's data. Some configuration data and user modified data is located in the TangoHome directory, which can be recovered by Tango. If a crash occurs at the database level, the system issues a warning.

Updates

Semandex does not provide automatic updates at this time. Updates are provided as a new war file that is dropped into the webserver replacing the existing war file.

Mobile Applications

Tango is a web application and can be accessed from a web browser from any mobile device including cell phones, tablets and PDAs.

Backward Compatibility

Tango provides backward compatibility, except when the update includes database changes. In this case a new database needs to be created.

Database Adaptors

Adaptors to external databases are provided in the form of TangoApps (applications which run within Tango).

Systems Integration

Programming Language

Tango is written in Java 1.6 and above.

Web Service

Tango supports REST API for Web Services calls. The API accepts REST and responds in several different formats, including: XML, JavaScript Object Notation (JSON) and KML. The requests are formatted in JSON. Internally, communications between the UI and the rest of Tango occurs via a REST-based API. This API is also available for external client applications.

Availability of Plug-Ins

Users have the capability to write their own modules in the form of TangoApps. Add-on modules customized for the specific application needs are also available from Semandex.

Integration

Tango exports data to Analyst Notebook, Google Earth, Excel, and provides a REST API for other web tools to query.

Planning Information

Packaging

The Tango software and Add-On modules are delivered on DVD packaging. Updates and Upgrades are available via FTP downloads.

License Information Documents

The Tango software when installed from the DVD contains the applicable Semandex license agreement and License information. Complete installation of the software product automatically validates the acceptance of the License agreement. The License Agreement is stored in the License.txt file.

Training

Training classes are available at any time by appointment. Classes can be arranged on-line as well as in person. Future release will include on-demand training, which will involve train the trainers to a) teach them Tango features and b) integrate their training materials into Tango itself.

Demonstration Products

Demonstration products are available at purchaser's requests.

Online Tutorials & User Forums

Tango documentation is available within the tool. Users can access the documentation from their web browsers while using Tango. There are no User Forums at this time; however, Q&A and troubleshooting are available during office hours as part of the technical support program.

Terms & Conditions

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Semandex Networks Inc.

57 Hamilton Avenue, Suite 303, Hopewell, NJ USA 08525

1-866-773-6263

www.semandex.net

