



TOP ANALYSIS TECHNOLOGY NEEDS FROM AN ANALYST'S PERSPECTIVE

► ANALYTIC MODELING

Analysts need to describe their knowledge and hypotheses about intelligence problems in a machine-readable format. Analysts need to share and collaborate on models with counterparts at different classification levels and across multiple networks. Analysts need to connect models to all relevant data sources to test hypotheses and—based on that data—visualize updates of activities most likely to have occurred, that are occurring, and will occur. The model will serve as a dashboard of current analyst understanding and would be used to calculate the next information need and drive acquisition of it.

► BUSINESS ANALYTICS

Analysts and managers need a user-friendly way to track and display levels of effort against topics and link those data with related information (e.g., intelligence requirements, priorities, and production) to inform mission management decisions.

► COLLABORATION CAPABILITIES

Analysts need a dependable, web- and cloud-based storage solution to create, import, edit, and update documents, graphics, presentations, and spreadsheets with real-time collaboration. Storage capacity must accommodate large file formats (i.e., geodatabases and GeoTIFF) and script files, and retrieval speed must meet dynamic mission requirements.

Analysts need a means to manage and collaborate on discrete projects in which all elements of that project are linked and exposed to the users. A community of analysts addressing a specific intelligence question needs to identify the participants; the applicable objects, models, analytics, and data; and any available in-work or published intelligence or related information. The ability to specify and link this information will facilitate faster, deeper, and more effective collaboration between NGA and its partners.

► COMPUTER VISION

Analysts need computers to interpret image content in still and motion imagery. The detections need to be classified and stored in a structured database that is easy to access and query. The detections need to automatically cue analytic models, additional collection, or reporting, when circumstances warrant. This will lessen the burden of identification on analysts, help analysts prioritize their work based on detected activity, and provide analysts time to concentrate more on in-depth analysis and hard problems. To meet the needs of NGA's current and future mission, NGA needs enterprise-level computer vision architecture that integrates image libraries with an algorithm execution service, a machine learning environment, a training data library that enforces technical standards, and an advanced analytic environment.

► DATA CAPTURE

Analysts need a flexible, user-friendly way to capture observations and judgments regarding their intelligence problems. Analysts would like the data capture program to function within electronic light tables used to exploit imagery and interoperate with analytic tools and reporting programs.

► DATA DISCOVERY, VISUALIZATION, AND ANALYTICS

Analysts need ease of access to all mission-related intelligence and information to provide greater context and depth to their analysis and increase its use to mission partners. Analysts need the ability to discover, filter, and visualize data in different formats: spatially, temporally, graphically, and in chart format. The data includes, but is not limited to, imagery, video sources, NGA-created and partner-provided structured and non-structured data, foundation data, collection requirements, imagery footprints, and intelligence reports. Analysts need to easily discover mission-related information regardless of the storage location and data type and be keyed into other data sets that may be relevant to their intelligence problems.



Data Formats:

SPATIALLY

Analysts need to view integrated data sets on a map where geographic correlations and outliers are more apparent visually so the analyst can note potential links and relationships between datasets.

TEMPORALLY

Analysts need the ability exploit integrated data sets over time, have the system assist with recognizing temporal patterns between or among datasets, and note where there are temporal trends between or among datasets.

GRAPHICALLY

Analysts need to view data graphically to search for patterns within the graph data that may not be discoverable when exploring through time or space.

CHARTS

Analysts need to view data in formats such as histograms, charts, tabular, etc., to easily see where or when there is a need for attention to an issue or where there is no significant change for an issue. These charts must be linked to production capabilities for easy integration into intelligence products.

► INTELLIGENCE EXPOSURE

Analysts need a way to make GEOINT more discoverable to customers at all classification levels and across all relevant networks. This includes observations, judgments, hypotheses, and intelligence reports. Analysts need a way to convey the reliability and sources of the information.

► INTELLIGENCE PRODUCTION

Analysts need a faster way to create and disseminate products. Analysts need a consistent, streamlined, user-friendly way to build and coordinate, internally and externally, all formal intelligence products at any classification level. This must include means to visualize data analysis through a variety of updatable charts, graphs, and other graphics. In addition, the time-sensitive nature of our work dictates that the production process should be streamlined to allow for the rapid creation and distribution of high-quality and time-relevant intelligence products. Turnaround for a product should be measured in hours or, at most, days, rather than months.

► RELIABILITY

Regardless of their location, analysts need their tools to work smoothly, reliably, and quickly, and handle a large amount of information and data without stalling, crashing, or requiring maintenance outages. Analysts need access to data and information on all networks and need the ability to work with that data and information on the network of their choosing.

► SEARCH CAPABILITIES

Analysts need to easily find NGA information such as policies, guidance, references, and training online through a reliable search function.

Analysts and managers need to discover who is reading their products, receive customer feedback on their products, and understand how their products or information was used in other intelligence reports. Customers need a user-friendly way to provide feedback on NGA intelligence products.

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