Intelligence Analysis with ArcGIS

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Workshop Goals

• Geographic approach as a methodology to support intelligence analysis workflows

• How to use tools and templates

• Methods for collaboration and sharing
ArcGIS for Intelligence Vision

- Configuration of ArcGIS to support the needs of the national intelligence community (IC)

- Focused on Key Workflows which are part of the Intelligence Cycle
  - Source Management
  - Analysis and Fusion
  - Situational Understanding
  - Information Sharing
Source Management

Basemap Templates

Image Discovery

Geonames Locator
Analysis and Fusion

- Image Observables
- Position Analysis – Desktop and Web
- Visibility and Range
- Incident Analysis

*Fusion, Integration, Reporting*
Situational Awareness

Battle Damage Assessment

Indications and Warnings Dashboard

*Indications and Warnings, Monitoring, Intelligence Operations*
Information Sharing

- Issue Reports
- Facility Reports
- Activity Reports
- Country Products
- Briefings
Process of Intelligence Analysis

- Step 1: Frame the Question
- Step 2: Collection - Find Data and Tools
- Step 3: Examine and Investigate
- Step 4: Analysis
- Step 5: Disseminate
The Geographic Approach & Spatial Thinking

Can You Think Spatially?

- Pattern Recognition
- Proximity and Spatial Distances
- Space and Time
- Overlays
- Workflows & Modeling
- Multi-dimensions
- Uncertainty and Sensitivity
- Connectivity and Interaction
- Scale
Step 1: Direction and Framing the Question

- What is the intelligence problem I am working on?
- Where do I focus?
- What aspects of the geography provide context?
Step 2: Collection—Finding Data and Tools

- Maps, Data and Services
- Non-standard data/ Unstructured Data
- Local flat file
- Collect new data
Demo
Data Collection
Using Full Motion Video

Bill Raymond
Step 3: Examine

- Is this a reliable source?
- Will this help answer the question at hand?
- Has this information been used by others for similar scenarios?
- What is the best way to access this data?
Example of a good description

**Events Density - Mali**

Generates a heat map of conflicts in Mali.

**Description**

This geoprocessing service is part of a set of sociocultural tools that interact with data over a country of interest, in this case, the Republic of Mali. This tool provides a density, or heat map of historical conflict.

Specifically, the user specifies an area of interest and the geoprocessing service generates a dynamic heat / density map of armed conflict incidents that took place there.

Output density polygons are drawn with a gradient red-green symbology if this tool is run in ArcGIS Desktop. Web clients can specify their own color gradient choices.

**Access and Use Constraints**

Demo purposes only

**ArcGIS Web API REST Connection**

http://107.20.166.51/ArcGIS/rest/services/Sociocultural/GPServer/EventDensity

**Tags**

density, heat map, sociocultural, mali

**Comments (2)**

**MEDICAL** (October 5, 2012)

This tool helped me plan for medical services in the region. Many thanks.

**REGINT** (September 28, 2012)

Thank you for sharing! This is a great tool to use for quick density analysis, and very easy to use!
Step 4: Analysis

- Is locating observation points important?
- What’s the proximity to large cities?
- What are the trends in the data?
- Is the clustering of data significant or an artifact of the sources?
Step 4: Analysis

What will help solve the intelligence problem?

- 750+ Tools in ArcGIS
- 130+ New Geoprocessing Tools

- Dynamic Mosaic Imagery
- On-the-Fly Analysis
- Integrates Video (FMV)
- Location / Allocation
- Overlay Modeling
- Time-Aware
- Mensuration
Step 5: Dissemination

Organizing Distributed Data and Services

Allowing for timely and efficient collaboration and sharing
Step 5: Disseminate Analysis

Automating Repeatable Workflows

Python Scripting

Tradecraft Modeling

Geoprocessing & Locator Packages

ArcGIS Online
Demo
Sharing and Collaborating
Natalie Feuerstein
Key Takeaways

• GIS supports the intelligence analysis cycle

• ArcGIS Portal enables search, discovery, and collaboration of geospatial content and analysis

• The ArcGIS platform will better enable geospatial analytics