Identifying the Problem

Lack a methodical approach to retrieve Open Source data & derive information of value

Analysts, developers and researchers are overwhelmed with multiple data types and need a method to quickly determine:

- Variety: What type of data is important?
- Veracity: How accurate is the data?
- Velocity: How quickly is data acquired?
- Volume: How much data is necessary?
- Value: What data enhances the mission?

Develop a method that implements open-source tradecraft in order to create a holistic narrative to enrich research and mission spaces via a collaborative environment.

Proposed Solution

2016 Use Cases:

- Unmanned Aerial Systems (UAS)
- Rio 2016 Summer Olympics
- Cyber Security

Research Focus Areas

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Reason</th>
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<tbody>
<tr>
<td>Research &amp; Discovery</td>
<td>• Map tradecraft to techniques</td>
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<td>• Develop exploratory analytics to discover unknowns</td>
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<tr>
<td>Supply Chain Management</td>
<td>• Identify methods to understand flow of products and services</td>
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<td>• Analyze interconnected networks</td>
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<td>• Analyze critical nodes and choke points</td>
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<td>I&amp;W / Trending</td>
<td>• Examine entities' events, capabilities and behaviors</td>
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<td>Sources: Confidence, Reliability</td>
<td>• Design mechanism to validate, tag and score data for trust level and further processing</td>
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<tr>
<td>Policy and Procedures</td>
<td>• Ensure compliance with policy and guidelines</td>
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Mission Relevance

Focused Discovery Activity (FDA)

FDAs are deliberately planned 1-2 week events that tackle a mission problem within the IC

- **When:** May 2016
- **Who:** 40 members from across the IC, Industry, and Academia
- **What:** Evaluated, summarized, and provided open source articles such as blogs, newspapers, and journals about civil unrest in Rio de Janeiro, Brazil.
- **Results:** Implemented a method to incorporate OpenKE into mission elements while pipelining and automating the current environment. Identify and extract open source data [in the unclassified environment] and feed selective relevant information into classified environment.

Rio Summer Olympics Research

- **When:** August 2016
- **Who:** OpenKE members, NC State University and IC partners
- **What:** Evaluated, summarized, and provided open source articles such as blogs, newspapers, and journals about civil unrest in Rio de Janeiro, Brazil.
- **Results:** Implemented a method to incorporate OpenKE into mission elements while pipelining and automating the current environment. Identify and extract open source data [in the unclassified environment] and feed selective relevant information into classified environment.

IC-wide Capability

- **When:** Operational prototype in progress
- **What:** Develop and integrate OpenKE-like capability
- **Results:** LAS research and prototype provides immediate mission relevance and impact across the IC

Next Steps

Analytincs:

- Indication and Warnings
- Trending

Data Sources

- Social Media
- Dark Web

Techniques

- Knowledge Graphs
- Source Reliability
- Instrumentation
- Policy / Privacy

Topics:

- Cybersecurity
- Small Conflict Economies
- SCADA
- IoT
- Human Trafficking
- Affiliations

OpenKE User Interface Design

ACADEMIA   GOVERNMENT

INDUSTRY   NATIONAL LABS