



SOCOM-156: Operational Visualization

SPONSORING ORGANIZATION

United States Special Operations Command (SOCOM), J39

CHALLENGE

Operational Planners for the J39 need a way to automate data collection and analysis of the information environment to rapidly assess, understand, and make decisions regarding the cognitive/human domain.

RELEVANT CONTEXT

- The J39 is responsible for managing all interests for the commander on operations in the information environment, which can represent a wide range of areas including influence operations, cognitive/psychological operations, cyber warfare, electronic warfare, or even how info is conveyed about military operations.
- Currently, there are limited methods for assessing cognitive and human representation in the information environment. Specifically, it is difficult to dynamically capture and determination stance, sentiment, or social reactions towards military objectives.
- Human cognition is inherently complex and influenced by numerous factors, such as emotions, biases, social norms, and cultural contexts. Measuring these elements accurately is difficult.
- A major challenge of the information environment is the ability to understand the effectiveness of how U.S. actions affect audiences in a given geographic or socially connected area. While some performance parameters are easy to identify (e.g., likes, shares, upvotes), indications related to real-world physical responses are difficult to quantify and track. For instance, how do civil-military interactions lead to attitude and belief changes, and how might that lead to actual behaviors in the physical environment.
- The use of big data and machine learning can help identify patterns of influence and manipulation in large datasets, such as social media interactions or online behavior. Measuring cognitive warfare provides opportunities to understand human behavior and decision-making processes better, which can be applied to countermeasures or resilience-building strategies.
- Importantly, quality assessment requires quality data. However, online platforms and websites limit access to the amount of data that can be collected. The use of surveys and observations are powerful, but time-bound and may be limited in scope.

IMPACT

If this problem were solved, researchers and practitioners could develop more effective methods to measure and visualize cognitive warfare, ultimately helping to mitigate its impact. Innovative solutions for data collection and automated analysis would enable higher quality assessments, better response options, and improved decision making.

POTENTIAL BENEFICIARIES

SOCOM Directorate of Operations (J3); SOCOM Directorate of Planning and Assessments; SOCOM Commanders; Special Operations Forces, Acquisitions Technology and Logistics (SOF AT&L), SOCOM Command Data and AI Office

TEAM RECOMMENDED SKILLSETS

Software development, Data Science, Psychology, Sociology

**PROBLEM SPONSOR**

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