

S&T Campaign: Human Sciences
Human Behavior
Real World Behavior

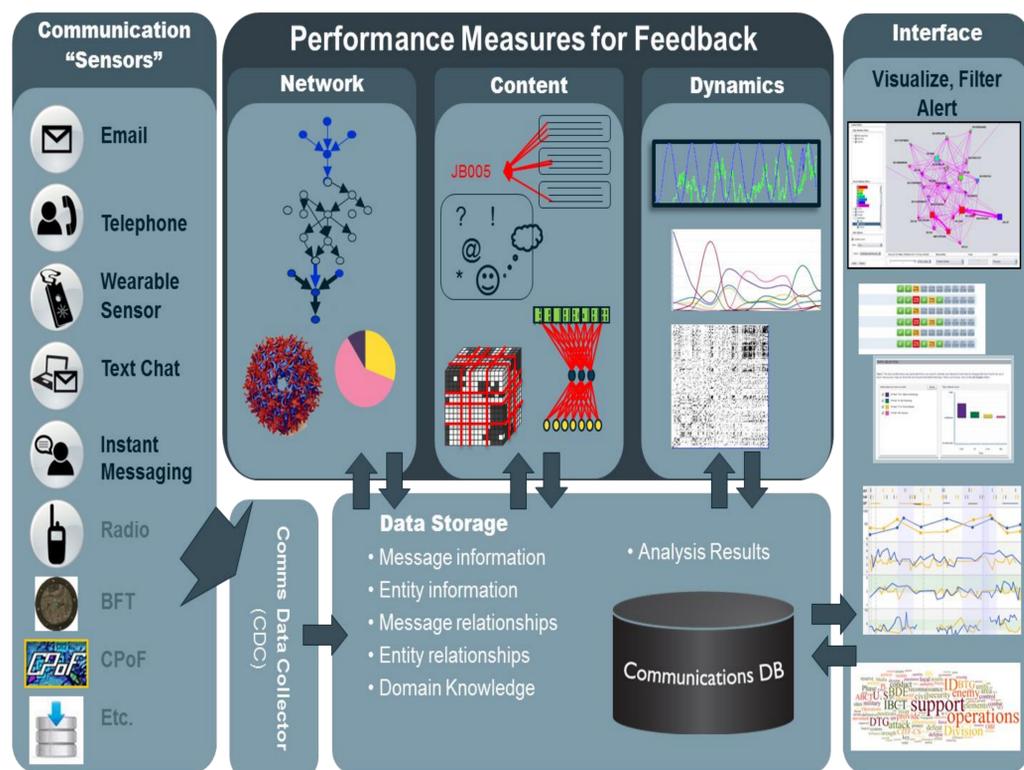
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Research Objective

- Unobtrusive assessment of team states and processes critical to performance using systems-based data and wearable sensors
- Multi-sensor integration focused on real-time, automated team-based metrics to enhance group performance in training and operational environments

ARL Facilities and Capabilities Available to Support Collaborative Research

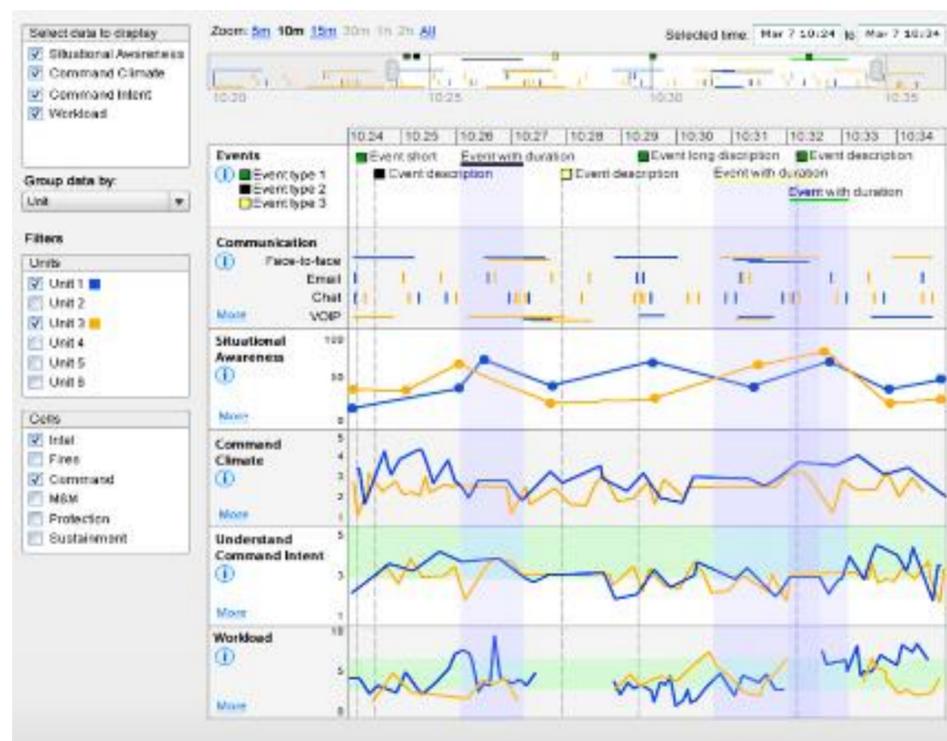
- Partnership supporting field research within **Brigade-level training exercises**
 - Tools to automatically collect, store, and analyze communications data (email, chat, and face-to-face)
- **Innovation Commons (under development) at APG, MD**
 - Highly sensed environment including cameras, eye tracking, keylogging, & task tracking, RFID, communications
 - “Hackable” space for rapid development and prototyping of ideas
- **Cognitive Assessment, Simulation, and Engineering Laboratory (CASEL) at APG, MD**
 - Networked team experimentation facilities
 - Simulated Tactical Operations Center
 - Virtual Immersive 300° environment w/weapons-fire system



Understanding Group Dynamics through Real-time Analysis and Visualizations of Systems-based Communications Data

Challenges

- Aggregation and interpretation of big data to understand group dynamics
- Measuring states, processes, and performance in complex organizational forms
- Real-world assessment in increasingly complex operational environments



Dynamic Team State Assessment and Feedback

Complementary Expertise / Facilities / Capabilities Sought in Collaboration

- Continuous human group assessment using wearable sensors and systems-based data
- Advanced quantitative methods for assessing team and organizational states
- Computational Human Sciences
- Social Network Analysis
- Team Dynamics