Reliance 21 – DoD Communities of Interest

Command, Control, Communications, Computers & Intelligence (C4I)

Scope/Thrust Areas

- Information Systems Technology
  Collaboration: Enable human interaction and collaborative decision making to achieve unity of effort

- Algorithmic Warfare
  Automation / Autonomy: Unburden warfighters through Automation / Autonomy

- Optimizing Human Decision Making
  Uninterrupted Command: Enable mission execution at all echelons anywhere, at anytime, regardless of network/system status

- Networks and Communications
  Interoperability/Coordination: Seamless and secure movement and integration of mixed format data/information between service, joint and coalition networks/systems

Impact on Capability Needs

- Behavioral Cyber (Integrates human and sensor observations by illustrating cognition and behaviors of friendly/ adversary actors): Emerging Partnerships (ARL, CYBERCOM, AFRL, Army Cyber Institute, Naval Surface Warfare Center-Crane, ...)
- Autonomy Research Pilot Initiative (C4I-Autonomy) (ARL-AFRL-SPAWAR) resulted in two brain-computer interface demonstrations in ARL MIND Lab
- Army/Navy extensions to Marine Corps Tactical Service Oriented Architecture (TSOA) Program
- Army/Navy Scientist Exchange (ARL/NRL) to define Internet of Things Collaborative Research Alliance

Engagement Opportunities for Industry

- Information Systems Technology: Acquisition of information from all sources; Tools algorithms and methods to convert inputs from heterogeneous sources to human machine usable forms; Ubiquitous search and retrieval, information discovery, and trust and access control
- Algorithmic Warfare: Transform sparse, unstructured, limited data in constrained environment to actionable information; Use social media platforms, user groups, & machine learning to train software agents that derive intent for human action; Use language artifacts to define algorithms that capture knowledge of relevant behaviors, events, tasks & mission
- Optimized Human Decision Making: Exploit emerging HCI technologies to create an intuitive & effective collaboration environment; Focus on mission and task context and the efficient/effective sharing of information across commands
- Networks and Communications: Improvement to network agility and resiliency across all domains
- Enhancements to improve AJ, LPI, LPD; Focus on mission and task context and the efficient/effective sharing of information across commands

Success Stories

- Numerous technologies demonstrated / transitioned (i.e. Android Tactical Assault Kit/TAK Server Technology; Open Standards for Unattended Sensors (OSUS) to PdM EOIR; Tactical Cloud Reference Implementation transitioned to Consolidated Afloat Networks and Enterprise Services (CANES) PoR and deployed; Secure Cross-domain Orchestration Engine, ...)
- Air Force/Navy Cross Domain Solution (CDS) for Distributed Interactive Simulation (DIS) and Link-16 Protocol Integration

Focus Going Forward

- Coordinate the DoD C4I Science & Technology (S&T) portfolio investment and review DoD organizations’ strategic plans to support C4I related S&T investments in the context of overall DoD strategic priorities and goals
- Establish priorities and guidance, monitor current and planned investments in S&T including but not limited to Networks, Command & Control, and Data to Decision efforts
- Identify gaps, establish and maintain a set of S&T roadmaps to guide DoD research program investments, perform portfolio assessments, and provide future resource recommendations to leadership
- Establish mechanisms to encourage coordination between researchers to facilitate information exchange, and promote collaboration

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