OBJECTIVE: The objective of this topic is to develop mechanisms that dynamically determine the value of data and information to soldiers involved in tactical engagements in a distributed, disadvantaged network environment.

DESCRIPTION: The Army has emphasized and will continue to emphasize smaller and more mobile command posts, with the goals of decreased logistics and manpower support, sustainable operational tempo, outperforming the enemy’s command, and survivability of equipment and personnel. Those tactical conditions will also be characterized not only by limited computing resources, but by limited and/or sporadic bandwidth and well. As these themes are addressed, it will be challenging to supply effective Mission Command computing capability without a mechanism to dynamically determine the importance of data and information. As network and computing resources diminish, and the battlespace changes, it is imperative to prioritize information needs, in order to support decision making cycles.

Initial equipment and software allocation, battlespace sensing, threat analysis, systems and network availability, running estimates, forecasting, determination of related effects, current levels of situation awareness and understanding, redundancy and resilience across the formation, and capabilities and training of individual soldiers are examples of factors that might be considered in maintaining this assessment. Intelligent strategies for data and information creation, storage, routing, and mediation should be explored. This work would be a foundational piece of the data storage and transport strategies required to support dispersed Mission Command computing.

PHASE I: The goals of phase I are to identify the factors relevant to the dynamic prioritization of battlespace data and information, and to present those prioritizations across several use cases. The Brigade and Battalion echelons should be the initial focus of this study. All relevant and potential factors in determining data and information importance of as a military operation unfolds should be assessed. Mission Command systems, voice communications, face-to-face interaction, and the cognitive processes involved in maintaining operational tempo comprise an initial set of data and information categories for consideration. An initial scheme for adjusting priority levels as an operation unfolds, considering the factors listed in paragraph two of the Description above, is also desired.

PHASE II: Phase II work should begin with a maturation of the assessments performed during phase I. Updates to the factors considered, as well as the use case prioritization, are expected. Significant work on developing more sophisticated for adjusting priorities will be required. A concept demonstrator of the dynamic prioritization of a set of the data and information identified during Phase I is desired during a representative operation is desired. Initial designs of schemes for data/information retrieval, creation, storage, caching, and forwarding are also expected. The software developed should reach a Technology Readiness Level (TRL) of 6. The performer will work with the government to identify and participate in one or more technology demonstrations to Army stakeholders.

PHASE III DUAL-USE APPLICATIONS: During Phase III, the software will be matured to a TRL 7. A series of demonstrations, simulations, or experiments intended to show responsiveness to priorities assigned to data and information from Mission Command systems, voice communications, face-to-face interaction, and cognitive processes is expected. The availability and bandwidth of network and communications, as well as the availability of Mission Command software systems and soldiers at physically separate locations, are factors that must be included. A robust data management / storage / routing solution is also required.

REFERENCES:

1. Army Doctrinal Reference Publication (ADRP) 6-0, Mission Command
2. Army Field Manual (FM) 6-0 COMMANDER AND STAFF ORGANIZATION AND OPERATIONS
3. Army Techniques Publication (ATP) 3-21.21 (FM 3-21.21) SBCT Infantry Battalion
4. c4isrnet.com/c2-comms/2018/01/19/the-army-wants-to-ensure-its-command-posts-arent-an-easy-target
5. Government Accountability Office (GAO) ARMY MODERNIZATION Steps Needed to Ensure Army Futures Command Fully Applies Leading Practices

KEYWORDS: Value of Information, Data Strategies, Data Mediation, Command Post Integrated Infrastructure