













variables can be conceptualized as transactive memory (TM). We describe how PDS that incorporates TM variables as a form of context can facilitate and streamline validation and communication of information among team members, which is crucial for realizing the potential benefits of PDS for coalition operations. We discuss considerations for implementing TM variables into PDS tools and key research and development questions to be addressed.

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### **Data Analyzer Software: a Knowledge System Supporting Coalition and Team Information Sharing**

*Abstract:*

As current and future operations integrate soldiers from multiple nations, information that supports short term and long term teaming is critical. Among coalition forces it is important to maintain unity of effort, to plan concurrently, and to make adjustment in sync ensuring operations are carried out successfully. Combatant commanders have many responsibilities including ensuring the capability and capacity of the forces with partnering nations.

However, in multinational operations there is the added need to consider differences in organization, doctrine, terminology, and objectives. This can be achieved through knowledge capturing, information sharing, and training. Additionally, giving commanders required information with explanation, linking knowledge and uncertainty can improve teamed operations in complex and dynamic environments. The Data Analyzer was initially designed for data analysis of training software previously developed at the Army Research Laboratory. Now that this training software is being used by US and coalition partners, the Data Analyzer has been expanded as a platform for wider analysis and knowledge capturing.

The Data Analyzer provides commanders with the ability to view data capturing detailed experiential knowledge and find trends in tactics, techniques and procedures (TTPs) employed within their units and within different coalition partners. This information from the analyzer provides the joint forces with similarities and differences highlighted that aid in joint engagement preparation and insights into actions that can impact joint mission TTPs. We present the Data Analyzer software and use case scenarios illustrating utilizing this approach in supporting knowledge capturing, information sharing, and decision making for multinational operations.