

Building a Coalition Multi-Domain Learning Environment (CMDLE)

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Mr. Ken D. Teske

ASIF Methodologies

Mr. Mark E. Miller

ASI Consulting

Mr. Patrick J. Guerin

Aligned Cybersecurity Solutions

Mr. Jeffrey A. Lauver

Key Management Solutions

CMDLE Issue

Issue:

For several decades mission partners that include Coalitions, Alliances, Governments, Ministries, Departments, Bureaus, Agencies, Special Operations, and Conventional Forces have not been able to capitalize on a holistic learning environment.

We collectively capture lessons learned and best practices from combat, exercises, training events, and external assessments to improve our processes and procedures enhancing command and control (C2) abilities. However, we collectively fail to institutionalize and apply the documented lessons learned and best practices because we approach this from an individual organization/unit perspective versus a collaborative sharing environment for all.

CMDLE Possible Solution

Possible Solution:

What is needed is a Coalition Multi-Domain Learning Environment to share and learn lessons from all types of operations and units' experiences to address the challenges associated with working with different mission partners in any operation.

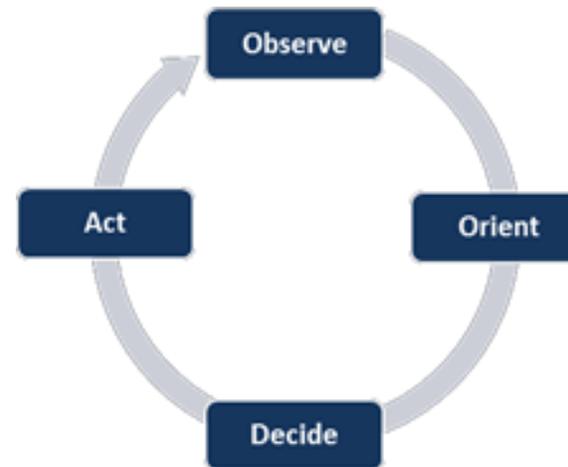
This learning environment will encourage stakeholders to engage and grow the environment into a holistic learning ecosystem enabling analysis, studies, new policies, provide technical advice, and enable better C2 recommendations.

The environment will need to consider how to store data, simplified access with next generation encryption that is quantum resistant, content delivery (information sharing), multi-domain aggregating from lowest to highest levels of protection, and the ontology or lexicons.

CMDLE and the OODA Loop

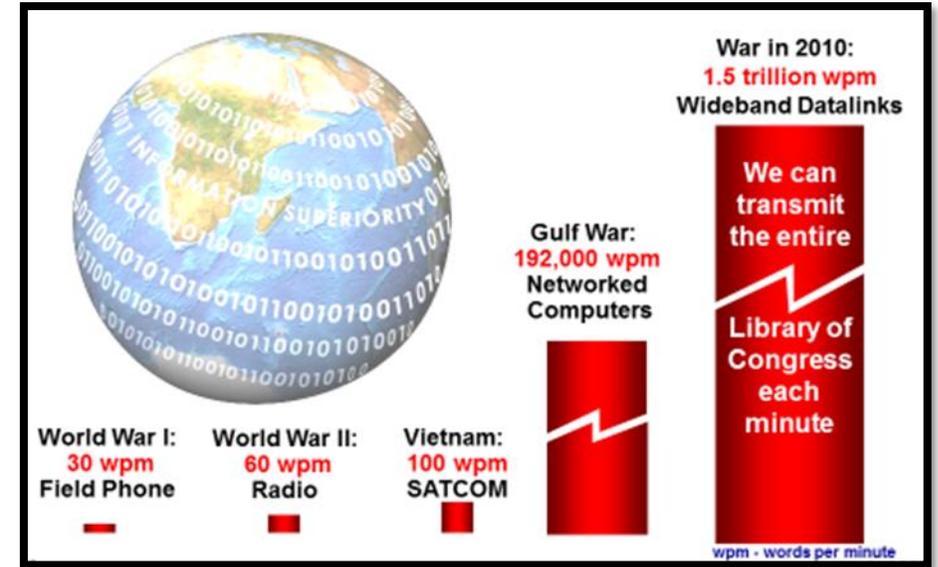
The environment will need to consider how to store C2 data, simplified access with next generation encryption that is quantum resistant (a C2 enabler), content delivery information through effective sharing, multi-domain aggregating from lowest to highest levels of protection, and the ontology or lexicons. These changes will enhance the C2 Decision Cycle that is often represented by the Observe, Orient, Decide, and Act (OODA) Loop as well as four classes of information processing functions:

- Information acquisition
- Information analysis
- Decision and action selection
- Action implementation



CMDLE and Information Overload

Due to the exponential increase in the volume, velocity, and authenticity of collected most data over these same decades, it is now virtually impossible for human analysts to keep up.



Expertise in data mining, data analysis, and data science which bring into play statistical models, artificial intelligence (AI) and advanced programming, is now required to address this problem.

As our technology continue to evolve, learning from the data available is more important than ever preventing data overload and loss of critical information.

CMDLE Overlapping Layers

The alignment, synchronization, and integration of the overlapping layers within the environment enhances the ability of the levels of effort to feed and support the CMDLE which assists in developing a picture and a shared understanding of the events and issues challenging our Commanders and organizational stakeholders.

CMDLE Development Challenges

The development of the CMDLE has the following challenges that stakeholders must consider during the development:

- Cultural Resistance within Operations and Intelligence leaders (Trust and Sharing)
- Changes to current policy
- New policy development
- Acquisition Challenges and funding issues
- Intellectual property
- Data privacy rights, protections and consent, e.g. Europe's General Data Protection Regulation
- Interoperability issues
- Cybersecurity issues

Words Matter

As a community, we must include clear “common” language, lexicons, and terminology that promote shared understanding and enable commanders, leaders, and subordinates at all levels.

We have continue to build trust and the need to share both the positive and less than positive lessons.

CMDLE Paradigm Shift in Understanding

The operational requirement is to increase speed of access to data to the operational warfighter across all mission effects and networks to enhance information sharing and the exchange of data capable of supporting all stakeholders and Mission Partners.

The environment must be capable of ingesting, segregating, and storing data and applications. This capability will, as a result of all stakeholders and Mission Partners having access to all shareable data; enhance “mission” planning and decision making by having a better understanding of our global capabilities.

Point of Contact

Ken D. Teske

ASIF Methodologies

Virginia Beach, VA 23454

+1-757-514-1218

kteske@asif-methodologies.com