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| Keywords | C2, Agility, Metrics | | |

I. Background and Justification (Relevance to NATO):

Previous C2 research and operational experience indicate that C2 Agility is a highly desirable capability for NATO and member nations to pursue. Specifically, SAS-085 investigated a number of hypotheses related to C2 Agility and found that the C2 Approach that an organization or collection of organizations adopts can have a significant impact on both measures of effectiveness and agility (the proportion of an entity's Endeavor Space where the entity can operate successfully). Thus, entities not only perform better but are also better able to effect, cope and/or exploit changes in circumstances when they adopt an appropriate approach to C2. Furthermore, SAS-085 found that the ability to appropriately adopt multiple approaches to C2 (the ability to maneuver in the C2 Approach Space) has the potential to enhance an entity's Agility.

These findings, when they have been presented to those in the operational community, both resonate and elicit the follow question: What should I do to improve C2 Agility? Therefore, this research group seeks to build upon the accomplishments of previous SAS Groups [SAS-050, SAS-065 and SAS-085] and to work with a variety of organizations within NATO and member nations to take the next steps on a journey to improve both our understanding of the relative agility of different C2 Approaches and to understand what needs to be done to move C2 Agility from a concept that has merit and promise to an operational capability. This will involve working to co-evolve all the Lines of Development dimensions, specifically doctrine, processes, training, and systems.

Current and future NATO missions will include NATO and non-NATO military coalitions, interagency partners, international organizations, host governments, non-governmental organizations, private industry, and local authorities and leaders. How these complex endeavours can be effectively organized and managed over time is a crucial issue. Prior work has also shown that NATO and its member nations must be able to think and function across the physical, information, cognitive, and social domains, further increasing the complexity of missions (e.g. NATO ACT thinking on future capable forces). The complexity inherent in these operations makes it imperative that we develop the agility needed to deal with highly uncertain and dynamic situations.

Research and analysis clearly highlights that different C2 Approaches may be needed in order to succeed. Thus, organizations, working individually and collectively, need to have people with the necessary education, training, and experience, C2 processes and C2 systems that are capable of adopting or supporting more than one approach to C2. The appropriateness of an approach to C2 is a function of the situation. NATO and its member nations need to develop the capability to recognize the characteristics of situations and be able to determine and adopt an appropriate approach to C2. They also need to be able to recognize when the current approach to C2 is no longer the appropriate one, to understand the characteristics, strengths and weaknesses of the various C2 approaches, and to select and transition to a more appropriate C2 Approach in order to best accomplish the mission at hand. A failure to do so has been shown, in both case studies and experiments, to greatly reduce the likelihood of success.

II. Objective(s):

The goal of this activity is to improve NATO, member nation and coalition partner C2 Agility thereby improving their ability to be successful in the face of increasing mission uncertainty and complexity.

This activity will have three inter-related objectives:

- To build upon the work of SAS-085 by 1) disseminating and explaining C2 Agility concepts and SAS-085 findings and conclusions, 2) continuing evidence gathering (e.g., through additional case studies and investigation of C2 Agility in the context of exercises, as feasible) to further validate the C2 Agility concepts, and 3) performing research on selected C2 Agility-related topics.
- To partner with a variety of military organizations to develop the capability to employ more than one approach to C2 and to provide evidence-based advice on how to adopt the most appropriate approach as a function of the mission and circumstances.
- To explore the costs and benefits of improving C2 Agility.

III. Topic To Be Covered:

- How to locate an organization or Collective in the C2 Approach Space
- The characteristics and performance of C2 Systems needed to support various C2 Approaches
- The construction of an appropriate Endeavor Space
- Locating a given situation in the Endeavor Space
- Selection of an appropriate approach to C2
- Cost and benefits associated with C2 Agility
- Changes needed for an entity to improve its C2 Agility

IV. Deliverable (e.g. S/W Engage Model, Database,...) and/or end product (e.g. Final Report):

Technical Report, other deliverable(s) : none

V. Technical Team Leader And Lead Nation:

Chair : Dr David S. ALBERTS United States

Lead Nation: United States

VI. Nations Willing/Invited to Participate:

NATO Nations and Bodies : Canada, Portugal, United Kingdom, United States

PfP Nations : all PfP invited

MD Nations : none

ICI Nations : none

Global Partners : Republic of Korea

Contact / Other Nations : Singapore

VII. National And/Or NATO Resources Needed (Physical and non-physical Assets):

None

VIII. STO/CSO Resources Needed:

None