

Chapter 13 – THE WAY AHEAD

OBSERVATIONS

The Working Group concluded, and reported to the SAS Panel in November 2005, that the C2 Conceptual Reference Model it produced represents an enormous amount of progress in the state of the art, specifically, the:

- Specification of the criteria for a successful or useful conceptual model;
- Identification of the fundamental dimensions across which meaningfully different C2 Approaches vary;
- Providing a framework and a set of variables that constitute a more detailed and robust understanding of the role of individual and team characteristics and behaviours within the C2 domain;
- Demonstration of the value of including diverse perspectives when undertaking C2-related research; and
- Provision of a Reference Model that can be applied by researchers within NATO and NATO countries to a variety of C2 issues.

However, SAS-050 cautioned that the Reference Model of the CM was not fully mature, noting that the Working Group simply did not have enough time and resources to complete such a large and complex task. Moreover, the group noted that the C2 Conceptual Reference Model was generic (as it should be) and thus was not specific enough to adequately represent any particular specific C2 Approach, but needed to be tailored (in an instantiation) before it was applied.

The Working Group also found that its diverse composition and the processes it employed were valuable and should be built on in future SAS efforts. The team was built around a core of individuals representing several nations who have worked together on a series of previous SAS/NATO efforts (RSG-19, SAS-026, and SAS-039), and who have developed a set of work processes that have proven effective over time. That core group was augmented in three important ways for SAS-050: (a) younger members from several nations who brought new knowledge and methods to the group; (b) members from the research communities of non-NATO nations (Australia and Sweden) with novel perspectives; and (c) greater representation from the social sciences, which enabled work on factors not dealt with in detail during prior efforts. The experience of SAS-050, which followed the principles outlined in the *NATO Code of Best Practice for C2 Assessment*, is richly suggestive of next steps and how to make them productive.

RECOMMENDED NEXT STEPS

While SAS-050 was underway, NATO made an important decision about the specific class of C2 Approaches that it plans to follow: it formally adopted NATO Network Enabled Capability (NNEC). Currently, NATO has begun moving toward developing that capability.

With this initiative and the fact that the current CM was immature in mind, the SAS-050 Working Group decided at its last formal meeting to recommend that an Exploratory Group be chartered by the SAS Panel to examine the possibility of creating a new working group that would:

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- Generate a more focussed and mature Conceptual Model that explicitly focuses on NNEC;
- Develop a maturity model by which NATO, NATO nations, and other nations interested in having the capability to work with NATO could plan and measure their progress;
- Examine illustrative cases as a way of both improving and assessing the quality of the NNEC Conceptual Model. These illustrative cases would assume NATO operating under different circumstances important to the nations, including, but not limited to:
 - Operating out of area,
 - Operating with non-NATO coalition partners, including disadvantaged partners,
 - Dealing with asymmetric threats,
 - Working with the UN or other international organisations, and
 - Examining the challenges necessary for individual nations seeking to develop C2 Approaches consistent with NNEC;
- Encourage participation from a greater number of NATO nations, Partnership for Peace nations, and other nations able to contribute to or benefit from the effort;
- Conduct technical exchanges with international, non-governmental, and private entities with an interest in seeing NNEC function successfully;
- Seek to understand, to a greater degree, how complexity and agility can be represented meaningfully during research on C2 Approaches; and
- Use this experience to improve the current Conceptual Reference Model.

The members of SAS-050 believe that moving ahead along these lines would benefit SAS, NATO, member nations, and indeed the global communities interested in transformation and C2 in several important ways. A Conceptual Model of NNEC would allow NATO-wide and individual nations to analyze NNEC (network-centric) issues in a coordinated manner that would foster the development of a common analytical framework, both increasing the efficiency of such efforts and also making it much easier to use analyses done by one nation or for one purpose to inform others. The proposed work would also improve the research community's capacity to explore C2 Approaches under conditions of complexity. The development of an NNEC maturity model, one of the most important products of the recommended effort, would be valuable in its own right to NATO, particularly Allied Command for Transformation, and for member nations. In addition, the processes of developing, refining, and validating a NNEC Conceptual Model would increase understanding of the topic within NATO and NATO nations. Finally, this effort would support continued refinement and maturation of the larger Conceptual Model of alternative C2 Approaches.

In addition, the chairman and members of the SAS-050 recognized that their efforts could benefit other SAS and NATO activities and indicated their willingness to work with others (either as individuals or in small teams) such as those already working on human factors in military organisations, experimentation on issues of importance to NATO, and information operations.