

Annex D – PLAN OF WORK: EXPLORING NEW COMMAND AND CONTROL CONCEPTS AND CAPABILITIES

1. OVERVIEW

The purpose of the Program of Work (POW) is to provide a conceptual model of C2 and demonstrate its utility in (1) capturing our knowledge re: C2, and (2) supporting exploratory analysis. This model will strive to incorporate variables related to individual cognition and individual and organisational behaviour necessary to represent and explore C2, as well as the facility to represent and explore new network-centric command concepts including collaborative planning and self-synchronization.

SAS-050 will undertake the following five tasks in an iterative fashion.

- Task 1: Develop a Conceptual Model
- Task 2: Identify, Adapt, and Encourage the Development of Exploratory Tools
- Task 3: Perform an Exploratory Analysis
- Task 4: Disseminate Conceptual Model, Findings, and Lessons Learned
- Task 5: Provide for Peer Review
- Task 6: Produce Study Products

These will be conducted through the series of the eight events depicted in Section 3 of this document “SAS-050 Schedule.” Additional work will be performed in between meetings via the WWW.

2. TASK DESCRIPTIONS (WITH TASKS AND PRODUCTS)

It is intended that the emphasis of our efforts would be on the evolution of new ideas related to loosely coupled command systems and distributed command approaches.

Task 1. Develop a Conceptual Model

First, identify key variables and the relationships among them. Second, identify related MoMs and their relationships (qualitative, causal, correlational, co-variable), including (but not limited to):

- Quality of information
- Information dissemination and sharing
- Perceptions of information
- Shared Situational Awareness
- Human characteristics and performance
- Organisational structures and processes
- Command and control approaches
- Task / Mission Performance

As part of this task, a survey will be conducted to identify appropriate MoMs that have been defined, are in use, and the related instruments available.

Task 2. Identify, Adapt, and Encourage the Development of Exploratory Tools

Find, adapt, and encourage the development of a set of tools to explore the relationships identified in Task 1. This includes both tools that have the ability to manipulate multiple variables to generate a “response surface” as well as those tools that can support the development of metamodels to make sense of the complex relationships involved and distil outputs.

Task 3. Perform an Exploratory Analysis

Demonstrate the utility of the conceptual model and the set of exploratory tools by applying them to a set of issues related to the nature and effectiveness of new approaches to command and control. Issues to be explored may include:

- Relationships between information quality, its dissemination, and situation awareness.
- Relationships among improved situation awareness, collaborative processes, and improved synchronization as a function of various command approaches.
- Relationships between interoperability/co-operability and awareness, shared awareness, and synchronisation.

Task 4. Disseminate Conceptual Model, Findings, and Lessons Learned

Efforts will be undertaken to disseminate the conceptual model developed in Task 1, information about the exploratory tools identified in Task 2, and the results of the exploratory analysis performed in Task 3. This will facilitate peer review and set the stage for a to-be proposed SAS RSY at an appropriate time.

Task 5. Provide for Peer Review

Provisions will be made to subject the work of this RTG SAS-050 to peer review. This will involve reaching out beyond member nations to find the best possible reviewers in the international community to serve as peer reviewers. The to-be proposed RSY will also serve as a venue for peer review.

Task 6. Produce Study Products

The following products will be produced:

- Conceptual model of C2
- Identification of a set of tools suitable for examining future C2 concepts
- Analysis of one or more of the fundamental hypotheses
- Compilation of suitable MoMs
- Identification of experts that could serve on peer review panels for similar studies
- Briefing to NATO panel
- Educational material for the community

3. MILESTONES/SCHEDULE

Eight meetings are planned over 2 ½ years. Additional work will be accomplished in between meetings using the WWW and a website to be established by the RTG SAS-050 chair.

Meeting 1: June 2003

Organization, Planning, and Preliminary Formulation of the Conceptual Model (3 days)

The purpose of this kick-off meeting is to review the TOR, develop a detailed project plan, identifying dates, hosts, and objectives of SAS-050 meeting to begin work on the conceptual model of C2 that will guide the analysis and be matured over the course of the analysis, and to formulate one or more C2 issues (tentatively specified in the POW) to be explored.

Meeting 2: (3 days)

Conceptual Model Workshop

This workshop will, while concentrating on the development of a conceptual model of C2 (identify key variables and their hypothesized relationships, suitable MoMs and their interrelationships, and bounds on these variables), complete a first iteration of the C2 assessment process specified by the *NATO COBP for C2 Assessment*.

Meeting 3: (4 days)

Tools Workshop

This workshop will bring together developers and users of various tools that can be used to represent and explore human and organizational performance. The ability of these tools to form part of a solution strategy for C2 assessment will be explored.

Meeting 4: (3 days)

Case Studies Session 1

This meeting will be organized around presentations of a case study exploring one of the issues identified. Lessons learned from this case study will form the basis for identifying modifications needed to the Conceptual Model and to the set of tools available for their exploration.

Meeting 5: (3 days)

Case Studies Session 2

This meeting will be organized around presentations of the same, or a second case study exploring one of the issues identified. Lessons learned from these case studies will form the basis for identifying modifications needed to the Conceptual Model and to the set of tools available for their exploration.

Meeting 6: (3 days)

Integration

This meeting will serve to review and integrate the lessons learned from the case studies and feedback from the community.

Meeting 7: (3 days)

Conceptual Model and Requirements for Exploratory Tools

The original formulation of the conceptual model for C2 will be revisited and modified as appropriate. The characteristics and capabilities that are necessary for the full exploration of C2 issues related to future command concepts and related human and organizational issues will be identified.

Meeting 8: (3 days)

Final Products

Produce remaining study products.