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BP 25, 7 RUE ANCELLE, F-92201 NEUILLY-SUR-SEINE CEDEX, FRANCE

RTO MEETING PROCEEDINGS 57

Usability of Information in Battle Management Operations

(l'Exploitation de l'information dans les opérations de gestion
du champ de bataille)

*Papers presented at the RTO Human Factors and Medicine Panel (HFM) Symposium held in
Oslo, Norway, 10-13 April 2000.*



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- AVT Applied Vehicle Technology
- HFM Human Factors and Medicine
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Usability of Information in Battle Management Operations

(RTO MP-57)

Executive Summary

On 10-13 April 2000, NATO, Partnership for Peace, and Non-NATO nationals from 21 countries met in Oslo, Norway to discuss the perceptual, cognitive, social, and contextual factors and considerations that will impact the usefulness and usability of information and information technologies in battle management operations. This symposium was part of the activities of the Human Factors and Medicine Panel of the North Atlantic Treaty Organization's Research and Technology Organization.

Command and control operations are becoming increasingly more complex. At the same time, information technology is evolving at an unprecedented pace yielding impressive capabilities but also helping to place a tremendous informational and perceptual burden on commanders, controllers, and warfighters. Past history suggests that when system developers fail to consider the mutual effects of cognitive, informational, social, and contextual factors, there is an increased probability of incidents, accidents, and failures. By contrast, with new collaboration and visualization technologies, it is possible to increase the perceptual, cognitive, and information utility of command and control systems.

To achieve this improved utility in battle management operations, it is imperative that command and control system designers interweave collaboration and visualization technologies with a deep understanding of how humans perceive and process information, make decisions, and interact with computer interfaces, and how users function in individual and collaborative environments. This combination of knowledge of human capabilities with technology advances offers the promise of providing mission- and task-critical information that is easily used by battlespace managers and warfighters.

L'Exploitation de l'information dans les opérations de gestion du champ de bataille

(RTO MP-57)

Synthèse

Des membres de l'OTAN, des représentants des pays du Partenariat pour la Paix et des représentants de 21 pays non-membres de l'OTAN se sont réunis à Oslo du 10 au 13 avril 2000 pour discuter des facteurs cognitifs, perceptifs, sociaux et conjoncturels qui auront un impact sur l'intérêt et l'exploitabilité des informations et des technologies de l'information dans le domaine du commandement et contrôle du champ de bataille. Ce symposium faisait partie des activités de la Commission des Facteurs humains et de la Médecine de l'Organisation pour la recherche et la technologie de l'OTAN (RTO/HFM).

Les opérations de commandement et contrôle deviennent de plus en plus complexes. Parallèlement, les technologies de l'information évoluent à une vitesse sans précédent, offrant certes des capacités impressionnantes, mais représentant aussi une charge informationnelle et perceptive considérable pour les chefs militaires, les contrôleurs et les combattants. L'expérience du passé indique que pour les concepteurs de systèmes, le fait de ne pas prendre en compte les effets combinés des différents facteurs cognitifs, informationnels, sociaux et conjoncturels équivaut à augmenter la probabilité d'incidents, d'accidents et de pannes. En revanche, de nouvelles technologies de coopération et de visualisation permettent d'accroître l'utilité perceptive, cognitive et informationnelle des systèmes de commandement et contrôle.

Afin d'assurer une meilleure efficacité dans la gestion du champ de bataille, il est indispensable d'intégrer dans les opérations de commandement et contrôle et dans les recherches technologiques, une compréhension approfondie des capacités cognitives et perceptives humaines (c'est à dire la manière dont les êtres humains perçoivent et traitent l'information, prennent des décisions, et interagissent avec les interfaces informatiques) ainsi que la connaissance du comportement humain dans des environnements individuels et coopératifs. Cette combinaison des capacités humaines et des avancées technologiques permet d'espérer disposer d'informations décisives pour la mission sous une forme facilement exploitable par les gestionnaires du champ de bataille et les combattants.

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† Paper not available at time of printing.

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