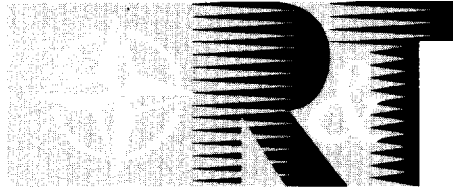


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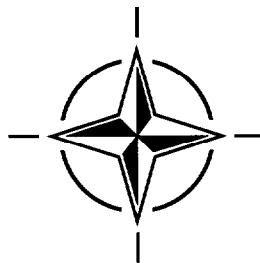
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(l'Application des technologies de l'information
(l'informatique) aux systèmes de conduite de mission)

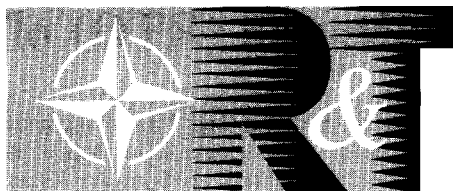
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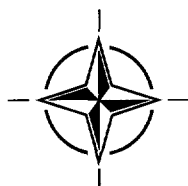
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RTO is the single focus in NATO for Defence Research and Technology activities. Its mission is to conduct and promote cooperative research and information exchange. The objective is to support the development and effective use of national defence research and technology and to meet the military needs of the Alliance, to maintain a technological lead, and to provide advice to NATO and national decision makers. The RTO performs its mission with the support of an extensive network of national experts. It also ensures effective coordination with other NATO bodies involved in R&T activities.

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The total spectrum of R&T activities is covered by 6 Panels, dealing with:

- SAS Studies, Analysis and Simulation
- SCI Systems Concepts and Integration
- SET Sensors and Electronics Technology
- IST Information Systems Technology
- AVT Applied Vehicle Technology
- HFM Human Factors and Medicine

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Application of Information Technologies (Computer Science) to Mission Systems

(RTO MP-3)

Executive Summary

Important advances that can be expected in the coming years are:

- comprehensive information availability for a full, common tactical picture at all command levels, in the air or on the ground
- consistent knowledge availability and dissemination to command centres and mission system elements to be used by both mission system machinery and human staff
- machine capability of autonomous knowledge processing for situation assessment and decision making

The symposium dealt with the applications of advanced information technologies to mission systems and functionalities, such as

- command and control assets
- strike and defence assets (air, land, sea)
- training
- situation monitoring
- situation analysis
- planning and decision making

The main purpose of this symposium was to provide mutual education within the NATO community about the impact of information technologies, emerging or already available, on mission systems and to show the potential benefits.

On the basis of the response to the Call for Papers, the symposium was structured in the following sessions:

- Information system architecture
- Information availability about mission situation
- Knowledge availability
- Machine Capabilities of knowledge processing (methods, planning, dialogue support systems).

The papers presented generated a high level of interest. In addition to the opportunities for discussion (both formal and informal) the proceedings provide a useful reference to guide research priorities in this important area of NATO activity.

L'application des technologies de l'information (l'informatique) aux systèmes de conduite de mission (RTO-MP-3)

Synthèse

Des avancées importantes sont prévues pour les années à venir, à savoir:

- accès sans restrictions aux informations, permettant la diffusion d'une situation tactique à tous les niveaux de commandement, en l'air comme au sol
- disponibilité permanente des informations et dissémination vers les centres de commandement et les éléments de conduite de mission, tant pour le renseignement du personnel que pour la saisie informatique
- possibilités de traitement autonome des données aux fins de l'évaluation de la situation et de la prise de décisions

Le symposium a porté sur les applications des technologies de l'information avancées aux systèmes de conduite de mission et aux fonctionnalités telles que:

- moyens de commandement et contrôle
- moyens de frappe et de défense (air, terre, mer)
- entraînement
- suivi de la situation
- analyse de la situation
- planification et prise de décisions

Ce symposium a eu pour objectif de permettre des échanges au sein de la communauté de l'OTAN concernant l'impact des technologies de l'information naissantes ou déjà disponibles, sur les systèmes de conduite de mission, ainsi que leurs avantages.

Sur la base des réponses reçues à l'appel de communications, le symposium a été organisé en quatre sessions comme suit:

- architectures de systèmes d'information
- disponibilité de données sur la situation de la mission
- disponibilité de données liées à la connaissance de la situation
- capacités de traitement de ces données

Les communications ont suscité beaucoup d'intérêt. Ce compte rendu de conférence, en plus des discussions formelles et informelles qu'il peut engendrer, est une référence précieuse qui peut aider à l'orientation des recherches dans ce domaine d'activités important pour l'OTAN.

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Theme

Comprehensive information availability for a full, common, tactical picture at all command levels, in the air or on the ground, consistent knowledge availability and dissemination to command centres and mission system elements to be used by both mission system machinery and human staff, and machine capability of autonomous knowledge processing for situation assessment and decision making are all important advances that can be expected in the coming years.

This symposium will essentially deal with the applications of information technologies to mission systems, such as:

- command and control assets;
- strike and defense assets (air, land, sea); and
- training centers
- situation monitoring, making use of techniques such as:
 - machine vision;
 - speech recognition and understanding;
 - machine translation.
- situation analysis
- problem solving/planning and decision making and effecting

and will take into account techniques for knowledge acquisition (on-line and off-line learning) and data/knowledge processing/management and visualization (synthetic environment).

Thème

Parmi les avancées importantes à prévoir dans les prochaines années figurent:

- l'accès aux informations exploitables, pour l'élaboration d'une situation tactique complète et commune, à tous les niveaux de commandement, au sol et en vol;
- l'accès à des renseignements fiables et leur diffusion vers les centres de commandement et les unités de conduite de mission où il seront utilisés à la fois par des opérateurs humains et par les systèmes de conduite de mission;
- la possibilité, par des machines, d'un traitement autonome des connaissances en vue de l'évaluation de la situation et la prise de décisions.

Ce symposium traitera essentiellement des applications des technologies de l'information aux systèmes de conduite de mission, tels que:

- moyens de commandement et de contrôle
- moyens offensifs et défensifs (terre, air, mer)
- centres d'entraînement
- centres d'élaboration de situation, faisant appel aux techniques de:
 - visualisation par la machine
 - reconnaissance et interprétation de la parole
 - traduction machine
- l'analyse de la situation
- la résolution de problèmes, la planification, la prise de décisions et sa mise en application

Le symposium prendra en considération les techniques d'acquisition des connaissances (apprentissage en ligne et autonome) et celles concernant la gestion des données et des connaissances, le traitement des informations ainsi que leur visualisation (environnement synthétique).

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