NORTH ATLANTIC TREATY ORGANIZATION

SCIENCE AND TECHNOLOGY ORGANIZATION

LECTURE SERIES
SCI-285

on "Space Domain Effects on NATO Operations"

sur "Effets du domaine spatial sur les opérations de l'OTAN"

organized by the

Systems Concepts and Integration Panel

to be held in

Kalkar (DEU) - 15-16 February 2016

Pratica di Mare (ITA) - 18-19 February 2016

Boulder, CO (USA) - 11-12 April 2016

This Lecture Series is open to citizens

from NATO Nations, Australia, Finland and Sweden

Latest Enrollment Date:
Kalkar (DEU) - 01 February 2016
Pratica di Mare (ITA) - 11 February 2016
Boulder, CO (USA) - 04 April 2016

Enroll on-line at
http://www.cso.nato.int/Meetings.aspx

All presentations and discussions will be held in English.

STO Introduction

The mission of STO is to conduct and promote co-operative research and information exchange, and the mission of the STO's Systems Concepts and Integration (SCI) Panel is to advance knowledge concerning advanced systems, concepts, integration, engineering techniques and technologies across the spectrum of platforms and operating environments to assure cost-effective mission area capabilities.

Background

The Space domain plays a key role in NATO operations. The perturbations that the space domain is subject to can have mission-critical impacts due to their effects on space systems. Hence, awareness and preparedness are fundamental requirements for coping with the relevant space domain phenomena to minimize their effects on operations.

Theme

Due to the complexity of the phenomenological scenarios and the operational needs, the knowledge level required must be identified based on the operational role of the person and ranges from basic to advanced knowledge for a soldier in the field or a space planner respectively. This can be achieved through targeted training based on multi-level use cases. This training approach helps create suitable conditions for guaranteeing the long term preservation of NATO space-based capabilities. In fact, this lecture series is aimed at providing attendees with a basic knowledge of the most relevant space-domain impacts on operational scenarios by means of a bottom-up approach. The lectures begin by presenting attendees with a selection of computer based use cases and asking them to provide an interpretation based on their own knowledge. Then selected lectures on Sun-Earth space perturbations and their effects on space systems will provide them with the conceptual tools to successfully re-visit the use cases in light of the knowledge acquired. The use cases will focus on topics such as satellite navigation and radio communications.

Topics to be covered:

Space domain perturbations and their effects on technological and biological systems with special attention to NATO space-supported operations. Specific use cases focused on military operations supported by space assets.

Contexte

Le domaine spatial joue un rôle essentiel dans les opérations de l'OTAN recevant un soutien spatial. Les perturbations auxquelles il est soumis peuvent mettre en péril les missions, à cause de leurs effets potentiels sur les systèmes spatiaux. La connaissance et la préparation sont par conséquent fondamentales pour faire face aux phénomènes en question et minimiser leur incidence sur les opérations.

Thème

En raison des besoins opérationnels et de la complexité des scénarios phénoménologiques, le niveau de connaissances nécessaire doit être établi selon les fonctions opérationnelles tenues par le personnel; il en va ainsi du niveau basique pour les soldats sur le théâtre des opérations au niveau avancé pour les spécialistes de la planification spatiale. Ce niveau de connaissances peut être atteint au moyen d'une formation ciblée reposant sur des cas d'utilisation multi-niveaux. Cette approche est de nature à favoriser la création des conditions opérationnelles permettant de préserver sur le long la capacité militaire spatiale de l'OTAN. En réalité, cette série de conférences vise à transmettre aux participants la connaissance élémentaire des impacts les plus importants sur les scénarios opérationnels, à l'aide d'une démarche ascendante. Pour commencer, une sélection de cas d'utilisation sera mise en œuvre sur PC et les participants seront priés de les interpréter en fonction de leurs connaissances. Les participants assisteront ensuite à une sélection de conférences sur les perturbations spatiales entre le soleil et la terre et leurs effets sur les systèmes spatiaux. Ils acquerront ainsi les outils conceptuels pour revoir les cas d'utilisation. Ces cas d'utilisation se concentreront sur la navigation par satellite et les communications radio.

Sujets traités:

Perturbations du domaine spatial et leurs effets sur les systèmes technologiques et biologiques, avec une attention particulière portée aux opérations de l'OTAN recevant un soutien spatial ; cas d'utilisation particuliers focalisés sur les opérations militaires bénéficiant d'un soutien spatial.

Lecture Series Director

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LECTURE SERIES PROGRAMME

DAY ONE

8:30	Registration
8:50	Administrative Announcements
9:00	Opening Ceremony & STO Overview
9:15	Introduction and Overview (M. Messerotti)
9:30	Practicum: Use case A
10:30	Break
11:00	The Space Photon Environment (M. Messerotti)
12:00	Lunch Break
13:30	The Space Particle Environment (C. Grimani)
14:30	Space Systems (T. Casinelli)
15:30	Break
16:00	Practicum: Use Case A Re-Visited and Discussion
17:00	End of day 1

DAY TWO

9:00	Practicum: Use Case B and Follow-Up
10:00	Morning Break
10:30	Practicum: Use Case C and Follow-Up
11:30	Practicum: Use Case D and Follow-Up
12:30	Lunch Break
14:00	Practicum: Use Case E and Follow-Up
15:00	Afternoon Break
15:30	Round Table Discussion (All Delegates)
17:00	Concluding Remarks (M. Messerotti)
17:15	End

APPLICATION TO ENROLL

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Note: if you enrolled for other RTO-STO activities in the past, please use the same e-mail address as previously. If your e-mail address has changed, please inform the STO-CSO contact before enrolling.

Once your enrollment has been validated, you will receive a General Information Package with the latest information on travel, accommodation and local arrangements. Please note that participants are to make their own travel arrangements and hotel bookings.

If you are unable to enroll via the internet, please contact the CSO enrolment coordinator:
lectureseries@cso.nato.int

Please respect the following latest dates for enrollment:

Kalkar (DEU) - 01 February 2016
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Contact/Enrolment Coordinator

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