

SYMPOSIUM

MONITORING GLOBAL THREATS: THE CONTRIBUTION OF SATELLITE TECHNOLOGIES

12 October 2012

OECD Conference Centre CC5, Paris

Agenda

Recent years have witnessed a plethora of major shocks: earthquakes, tsunamis, floods, pandemics, food shortages, collapsing fish stocks, etc. have all left their mark. Moreover, because of rising populations, climate change, the growth of cities, the pace of globalisation and increasing interdependence, the 21st century is likely to witness more and increasingly costly shocks, some familiar, others new. Space technologies play a vital role in monitoring these threats and in providing the enabling conditions to address them. As space technologies evolve further, so too could their potential to help address major challenges in the future, both in their own right and in combination with technological advances in other fields.

The symposium will highlight some of the key results from ongoing OECD work on innovative technologies for tackling major societal challenges. Specifically, it draws on a series of five special workshops organised in the first half of 2012 which examined space technologies' current and future contribution to surveillance and early warning on global threats. The symposium will bring together decision-makers from the public sector and the business world, representatives of the space community, and users of space technologies and services from ministries, industry and international organisations.

**Thursday, 11 October
(17.30-19.30)**

Cocktail and Networking Opportunity
(R. Ockrent Room, OECD Château)

Welcome address

Andrew Wyckoff

Director, Directorate for Science, Technology and Industry

Friday, October 12th

9.00 WELCOME AND OPENING SESSION

9.30 Introduction Andrew Wyckoff, Director, Directorate for Science, Technology and Industry

Welcome address

- **Yves Leterme**, Deputy Secretary-General, OECD

Keynote speeches

- **Rt Hon David Willetts MP**, Minister of State for Universities and Science, United Kingdom
- **Jean-Jacques Dordain**, Director General, European Space Agency (ESA)
- **Barbara Ryan**, Secretariat Director, Group on Earth Observations (GEO)

10.30- 12.30 PART I. THE SCALE OF THE CHALLENGES AND THE ROLE OF SPACE TECHNOLOGIES

This session will sketch out the range of diverse threats identified in the course of OECD IFP work, indicating their scale, likely evolution in the years ahead, and the importance of space tools (Earth observation, telecom, navigation) in monitoring and anticipating their potential consequences. After a general overview of the main challenges to come (overpopulation, climate change, etc.) with potential cascading effects, the presentations from experts will highlight selected threats, with the objective to take stock of space technologies' capabilities and potential for the next 5-10 years. The main questions raised: where are the major gaps in satellite coverage / accuracy / frequency, etc.; what's in the space-technology pipeline for the next 5-10 years that could help us better monitor major threats?

Introduction Barrie Stevens, Head, OECD International Futures Programme

- **Ruth Boumphrey**, Head of Earth Observation, UK Space Agency and **Paul Davies**, Head, MetOffice Hazard Centre; Chair, UK Government's Natural Hazards Partnership
Predicting, preparing for and responding to weather-related disasters.
- **Terje Wahl**, Deputy Director General, Space and Earth Sciences, Norwegian Space Centre
Ocean risks: illegal fishing, pollution, piracy
- **Assaf Anyamba**, Associate Research Scientist, Goddard Earth Sciences Technology and Research, NASA's Goddard Space Flight Center
Food security: the view from space
- **Murielle Lafaye**, Relations avec les Ministères et Études Prospectives, Équipe Stratégie, Prospective et Promotion du spatial auprès des Ministères, Centre national d'études spatiales
Satellites for Health: Pandemics monitoring and forecast
- **Jun Gomi**, Director of Satellite Applications Centre, Japan Aerospace Exploration Agency
Earthquake and Tsunami – Great East Japan Earthquake and Near-Future

12.30-14.00 Lunch (Room Roger Ockrent, Château de la Muette)

14.00

PART II. AVENUES FOR IMPROVING THE CONTRIBUTION OF SPACE TECHNOLOGIES TO MONITORING THREATS IN THE FUTURE

The afternoon session will focus on two key challenges that need to be tackled if space technologies' contribution to monitoring major threats is to be significantly improved. The first involves capitalising on the potential complementarities that exist among emerging strands of technological innovation, and exploiting the benefits of technology convergence both within and outside the space sector. The second concerns data needs – how to generate and access more relevant data, how to improve analysis and evaluation of those data, and how to facilitate sharing the data among sectors, institutions and countries. With both challenges, ever stronger calls for more interdisciplinary capabilities and approaches can be expected.

Panel 1: The technology challenge: Making the most of technological convergence and complementarity

This panel will address how the convergence and complementarity between space and non-space technologies could play out, as both will be instrumental in the effectiveness of space-based contributions to monitoring threats. The presenters are experts who participated in the series of OECD workshops. The presentations, on a wide diversity of technological innovations (including machine-to-machine communication, crowd sourcing, use of biomarkers, etc.) will offer insights into the emergence of new tools, how these can be leveraged to make space applications more effective and improve overall outcomes, and what models might come into play.

Introduction, Pierre-Alain Schieb, Counsellor, Head of Futures Projects, OECD IFP

- **Patrick Cohendet**, Professor, HEC Montréal, Canada; Professor of Economics, University of Strasbourg, France
Convergence issues with space technologies in a context of open innovation: an overview
- **Antonio Noguerras**, Head ATM Security Unit, Civil Military ATM Coordination Division, Directorate Single Sky, Eurocontrol
Integrating varied technologies: the future of air traffic management
- **Rémy Bossu**, Secretary General, European-Mediterranean Seismological Centre
Citizen Seismology: Harnessing the Collective Power of Citizens for Efficient Crisis Response

15.30 Panel 2: The data challenge: Making progress in gathering, evaluating and sharing data

The panel will review some of the key issues surrounding data in the context of space technologies' role in addressing global threats. Space applications already have to manage an extraordinary array of diverse data – from geospatial information and raw satellite imagery, for example, to real-time sensory data feeds.

However, to be even more effective in tackling natural disasters, pandemics, the effects of climate change and so on, experts will increasingly need to integrate data generated in a wide range of scientific fields unrelated or only partially related to space. These include *inter alia* information from disciplines such as biology, entomology, epidemiology, geography, geology, hydrology, as well as demographic and socio-economic survey material. Help will no doubt be forthcoming from major advances in data processing and storage (e.g. improvements in supercomputing, use of clouds, etc.), but such progress may also need to be accompanied by greater sharing of data across national, international and institutional borders.

Introduction, Claire Jolly, Sr Policy Analyst, OECD Space Forum

- **Lea Shanley**, Director, Commons Lab, Science and Technology Innovation Program, Woodrow Wilson International Center for Scholars, USA
Big Data Challenges and Opportunities
- **Timothy Stryker**, Director, Policy, Plans, and Analysis, Land Remote Sensing Program, Climate and Land Use Change Mission Area, United States Geological Survey
Data-Driven Approaches for Enhanced Disaster Risk Reduction
- **Martino Pesaresi**, Scientific Officer, Geo-Spatial Information Analysis for Global Security and Stability, European Commission - Joint Research Centre, Institute for the Protection and Security of the Citizen
JRC's experience and data challenges in crisis management
- **Joan Harvey**, Head, Research & Analysis, Policy and External Relations, Canadian Space Agency
Three Generations of Radarsat: Developing Insights and Growing Capacity

17.15 Key messages, next steps

17.30 End of symposium

For further information please contact:
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