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# OECD Futures Project

## The Commercialisation of Space and the Development of Space Infrastructure: The Role of Public and Private Actors

September 2003

# Rationale for the Project

- Growing strategic interest in space.
- Potential for significant economic, social and environmental benefits.
- Considerable uncertainties facing both public and private actors
- Need for a broad-based forward-looking policy-oriented review of future commercial developments in the sector.

# Project Objectives

- Provide an assessment of the long-term prospects of the sector.
- Identification of promising applications.
- Implications for supportive measures.
- Implications for reforming the legal/regulatory/policy framework.
- Strengthening of international co-operation.

# Why the OECD

- Neutral informal forum with recognized consensus-building capability.
- Most key players are agencies of Member governments or incorporated in the OECD area.
- Brings into the discussion all key public players, including user departments.
- Expertise in dealing with broad range of public policies issues related to the operation of markets: *e.g.* economic, finance, competition, trade, technology, environment....

# The Process

- Consultation with key players in the public and the private sector.
- Preparation of a project proposal.
- Exploratory colloquium on 23 Sept. 2002 for launching the project.
- Creation of a project steering group
- Two-year project starts in January 2003
- Final draft report and recommendations end 2004, and publication April 2005

# Overall Approach

- Project Team
- Steering Group
- Working Group
- Non-OECD Participants
- Financing of the Project
- Time Horizon



# Participation

- Space Agencies
- Science & Technology Ministries
- Other Interested Ministries (Economics, Health, Education)
- Private Sector
- International Organisations



# Participants in:

## OECD Futures Project on the Commercialisation of Space: The Role of Public and Private Actors

AS OF SEPTEMBER 2003			
	France: CNES	Norway Norwegian Space Center	DG RESEARCH EUROPEAN COMMISSISON
Australia: University of South Australia	Germany: Astrium Space Infrastructure	Rep Korea: Korea Aerospace Research Institute	ESA
Austria: Federal Ministry for Transport, Innovation and Technology	Italy: Alenia Spazio Telespazio	Sweden National Space Board	
Belgium Federal Office of Scientific and Cultural Affairs	Luxembourg: Ministère de la Culture, de l'Enseignement Supérieur et de la Recherche SES GLOBAL	UK: British National Space Centre British Telecom	
Canada: Agence spatiale canadienne Ministry of Natural Resources	Netherlands: Ministry of Economic Affairs Ministry of Health, Welfare and Sport ING Bank	USA: Dept Of Commerce (NOAA) Lockheed Martin	



# Main Phases of the Project

- Phase 1: Review of the current state of sector and assessment of its future evolution
- Phase 2: Selection and clustering of promising applications
- Phase 3: Exploration of business models
- Phase 4: Examination of legal and regulatory obstacles
- Phase 5: General conclusions and recommendations

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## Phase 1: The future evolution of the sector

- Geopolitical factors
- Economic factors
- Social factors
- Energy & the environment
- Science & technology

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## Science & technology (S&T) Progress in:

- space S&T (*e.g.* propulsion, space-based communication)
- enabling S&T (*e.g.* robotics, nanotechnology, laser)
- competing technologies (*e.g.* fiber optics, cellular communications, aerial observation)



## Phase 2: the selection of promising applications (1)

- Prospects for existing applications
  - Telecommunications: broadband? Mobile?
  - Earth observation: new space-enabled GIS applications?
  - Navigation: application to transport/resource management/emergency services?
  - Combinations of applications





## Phase 2: the selection of promising applications (2)

- New applications
  - Telemedicine
  - Tele-education
  - Micro gravity research and manufacturing
  - Space tourism
  - Space solar energy



## Phase 3: business models (1)

- Standard business considerations
  - what is nature of the added value created?
  - who are the potential users?
  - what is the cost structure and profit potential?
  - what strategies can be used to establish and maintain competitive advantage?

## Phase 3: business models (2)

- Other Important considerations for space
  - will technology be produced on target and meet expectations?
  - will the market for the offering materialise?
  - will the offering be superior to alternatives when they reach the market?
  - how is the project to be financed?
  - who bears the risks?

## Phase 3: business models (3)

- Government support
  - reduces private investment requirement
  - reduces private sector risk
  - creates new business opportunities
  - develops new public infrastructure





## Phase 4: Improving framework conditions (1)

- Improve space policy by:
  - giving a greater voice to users in the formulation and application of space policy
  - a clearer recognition of the role of the private sector
  - creating a more stable and predictable policy environment for business
  - a clearer allocation of responsibilities



## Phase 4: Improving framework conditions (2)

- Improving space law and regulation
  - Dealing with international space law (*e.g.* public law v. business world, dispute settlement, liability issues, etc.)
  - Implementation of business-friendly national space laws (*e.g.* problem of different legal formulations and interpretations across countries)
  - Implementation of business friendly regulations (*e.g.* privacy, licensing and property rights)

## Phase 4: Improving framework conditions (3)

- Strengthening international co-operation for:
  - Development of space infrastructure
  - Reducing tensions on foreign investment and trade-related issues
  - The formulation of international standards

## Phase 5: Recommendations of the Report

- Promising applications
- Critical factors for their successful implementation
- Government actions for creating a more favourable environment



# Conclusions

- Process
- Final Report and conclusions (first quarter of 2005)



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Thank you.

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