

***What should the public sector do to incubate  
the Earth observation value-adding sector?***

**POSITION PAPER ON THE INDUSTRY AGENDA  
SUMMARY**

**Paul Kamoun, AAS  
EARSC Chairman**



# EoVox Open Review Process



- Presentation of the Industry Agenda Draft Position Paper, Frascati, Sept. 14th, 2006
- Feedback on the Position Paper will be collected with two complementary mechanisms
  - 1. At the Sept. 14th Workshop, through the splinter sessions and participants comments
  - 2. Continuous e-mail inputs/discussions from stakeholders until October 31th.
- EoVox will manage the Industry feedback. EARSC will insure tracability of Industry comments.
- Position Paper will be finalised October 31th, 2006
- Endorsement from VAC's will be obtained in a continuous process starting at the Workshop and finalised on November 15th, 2006. An Annex to the Position Paper will list the VAC's which endorse the paper.



- **The Current State of the Industry**
- Emerging sector with a fragmented industry structure and highly diverse and varied product and service supply mechanisms.
- The following external factors are currently preventing the industry from stepping up
  - heterogeneous and fragmented user community
  - insufficient and unreliable access to data for operational applications
  - relatively high cost of the input raw material
  - lack of long term commitment from large institutional customers.

- **The need for proactive support for the industry**

– The EO VA industry and its growth is **strategically important** to governments,



# SETTING THE SCENE

## THE STATE OF THE INDUSTRY



---

### Relevant Problems and Needs of the Public

- monitor & manage Earth & resources efficiently, assess and manage risk, evaluate environmental impact, justify financial investments; damage to the environment is starting to impact the lives of hundreds of millions of people.

### Strategic Importance of the EO VA Industry

- Defence, security, allow government to be a player in negotiations, socio-economic benefits, Lisbon agenda.

### The Political Scene.

- GEO, GMES, GEOSS, Regions themselves getting organized, overall co-ordination and synergy.
- private sector can play role if initiatives accompanied by government commitment (financing, service adoption, legal/reg. tools).

### Size and Health

- Industry employs ~ 2900 people, 285 million € turnover, 60% have less than 30 employees, growth rate 6% per annum.
- Emerging sector, fragmented industry structure, highly diverse and varied product & service supply: majority of production costs are labour costs
- Export: Only 15% turnover from outside Europe. High cost/risks involved; public sector support can be justified. GMES is an opportunity.

### Views from the industry (Based on interviews with small/large EO VACs):

- 1. Drivers of supply/demand 2. Industry Evolution 3. Improved representation 4. Feedback on development financing

### Factors Affecting the Sector's Development

- Current market mainly public (78% of customer base). General awareness of EO capabilities increasing ( "Google Earth effect")
- New technological developments ( LBS, web,...). Price of data. European policy on PSI complicated by conflicting national economic philosophies

### Trends in the Earth Observation Industry

- Industry currently too fragmented to enable it to develop and drive the market. However, recent mergers and acquisitions have been moves towards vertical integration. Some parts of the EO industry are considering horizontal integration with the GI-sector.
- Public support is still required to develop the market.



# OPPORTUNITIES & CHALLENGES FOR THE EO VA INDUSTRY



---

## Opportunities

- Significant growth in the demand for geospatial information. new paradigm introduced by Google Earth
- Increasing importance of climate change.
- GMES offers the biggest opportunity for operational information provision.
- 50% of the market for PSI being comprised of geographical information, this will have a significant impact on the EO VAC sector.

## Risks

- strengthening of business in national markets
- lack of operational data supply
- focused on pre-commercial product and service
- Industry fragmentation
- typical technology push approach
- inadequate financial instruments
- rely too extensively on public funding and fail to diversify

## Challenges

- adopt a customer-based approach and federate customers
- providing operational services.
- formalised, longer term partnerships
- GMES
- alternative funding mechanisms
- Industry must to deliver effectively upon EC requests for EO services of the order €80-100m per year
- grow international customer base
- new approach to data access and especially with respect to pricing.



---

## Options for Investment

- **Go Public**

- EU, ESA, EIB, national government, or government agencies such as EUMETSAT, EEA or national institutions.
- Avoid in-sourcing, which could reduce the accessible budget for industry. **Best hope today is GMES.**

- **Go Public/Private**

- PPP not yet really implemented in EO in Europe; people wary about possible use after difficulties on Galileo and failure of LANDSAT commercialisation programme.
- PPP financing of ground based service delivery infrastructure elements warrants further consideration as a means of smoothing budgetary commitments.

- **Go Private**

- Partial financing through venture capital providers has been used in Europe to set up the Rapid Eye and TERRASAR programs
- In general the culture of business angels and risk investors is much developed in Europe and the evolution will be slow.
- Strong actions to innovate in funding mechanisms must be undertaken in Europe both at the institutional and industry levels.

- **Sustainable Revenue Growth**

- Revenues from data mainly through data sales to institutional entities such as the EU or the US government.. Nevertheless the ROI from data sales would probably not be sufficient to sustain activity if not for the support of the US government anchor tenancy.
- Revenues from services are the main revenues of VACs. Size of revenues explains why personnel in the 10 to 50 people range. A few, subsidiaries of large groups, can be larger. Outside the public sector, the most commercially successful activities are in providing professional services to large companies in sectors such as oil or insurance.



# THE CASE FOR PUBLIC FUNDING



- A few major elements are at the core of the case for public funding of EO VA activities.
  - **First**, the majority of the Earth Observation applications, and the majority of the users identified today, are in the public service realm.
  - **Second**, so far, such services when delivered by small VA companies to the public have generated little profit: specifications are often unclear or evolving so there are often milestone payment delays and with little scope for redress. It is risky for VA companies to invest in public applications, even if they want to be proactive there. The development of new operational applications itself is indeed quite expensive and time consuming and not suitable for VACs alone.
  - **Third**, the development of remote sensing applications is in general quite specific to the user requesting it so that it has little recurring use on private markets.
  - **Fourth**, some fear the EO VA industry might be too small today to cover all the public needs, even though it is tailored to meet the first GMES budget allocations. For the future there are thus two possibilities: either in-sourcing in public institutions or the development of the VA industry sector. Unlike government agencies the VA sector has great freedom to create additional jobs in markets outside the public sector. There are good prospects for development of export capabilities and turnover.
- **Thus, public funding for VA companies is a win-win situation. The public institutions get their applications developed and delivered efficiently in a competitive environment. The VA companies get a stable business base allowing their survival and development on the export front.**
- **For the short to mid-term (2006-2010) public funding is a *sine qua non* condition for the development of public services and for the growth to maturity of the EO VA industry. It must include in this period full public funding of the infrastructures as well as full coverage of public applications development and implementation costs.**



# ROAD MAP FOR THE EO VA INDUSTRY



- The roadmap for the EO VA industry is structured considering first its two identified ends.
- One is the present period, 2006, the second is the horizon beyond which we believe our predictions or expectations are unreliable. This horizon is put at 2015. The speed of technological developments and the social and economic issues do not reasonably allow us to look further at this stage.
- The main focus of an industrial sector is to generate services and profits as well as provide employment. Thus the preliminary strategic objectives for European VA industry in 2020 can be summarised as follows.
  - • **Generated large revenues from services in the order of billions of Euros**
  - • **Have a large and stable workforce.**
  - • **Cover all the out-sourcing needs of European institutions in terms of environmental monitoring**
  - • **Have EO-based information smoothly and transparently integrated in all economic and industrial sectors**
  - • **Have a strong trade association at least on a par with American or Asian equivalents**
  - • **Play a leading role on the export market**



# ROAD MAP FOR THE EO VA INDUSTRY



---

- **Summary of Short Term Objectives: 2006-2010**

- • Lobby large scale public services to be funded and delivered through the private sector
- • Lay the ground work for web service development
- • Develop public applications to the furthest extent and ensure sufficient levels of public investment
- • Setup increased synergies between EO, Navigation and Telecoms
- • Prepare European independence and autonomy in operational environmental monitoring
- • Consolidate and enlarge the existing companies and their trade association EARSC
- • Achieve significant growth in the export market for services
- **Generate revenues of 1 billion euros in 2010 by having the VA getting more involved in developing services using the synergy between EO and other techniques (GPS, GIS, LBS,...) than on EO alone.**

- **Summary of Medium-Term Objectives: 2010-2015**

- • Cover all the needs of European public institutions
- • Large scale development of synergistic geo-information applications based on EO, Navigation and Telecoms
- • Increase involvement in diverse economic and industrial sectors
- • Achieve European independence and autonomy in operational environmental monitoring
- • Start consideration of PPP
- • Develop partnership beyond Europe
- • Achieve significant growth in the export market for services
- • Get involved in all economic and industrial sectors
- • Be a leader in export markets.

- **Generate revenues of 5 billion euros in 2015**



# CONSOLIDATED DEVELOPMENT ACTIONS



---

## Possible Actions to Support General Development of the EO Industry

- Secure continuity, quality and fitness for purpose of medium and high resolution EO data for public sector services.
- The public sector needs to finance the infrastructure for acquisition and delivery.
- e.g. Study, focusing on GMES, to identify what PSI should be made available to European industry at no cost or low cost and under what conditions of access and re-use. To include cost-benefit analysis.
- Encourage commercial delivery of public sector EO services.
- e.g. Study to identify public sector EO services suitable for commercial operation in each member state. Develop model service level agreements which can be used as a template by public sector agencies.
- Action is necessary to counter institutional in-sourcing because institutions have privileged access to information, skills and facilities.
- RTD actions: support the development of new products and services taking into account planned missions for which firm funding commitments have been achieved.
- It is in ESA and EC interests to ensure that products and services reach operational readiness as soon as possible after the start of new EO missions.
- Export actions: support pilot projects to transfer proven applications to non-European/non-ESA countries.
- Make infrastructure for high volume data access and processing available to the private sector.
- Establish service processes and models for quality assurance and certification of EO products and services. Bring about a regulatory and business model for certification activities that allows them to be offered by the private sector.
- Quality is a barrier to development of EO sector, independent quality control is a service which customers will be prepared to pay for in a mature operational market.

## Possible Actions Specifically to Support the Development of an EOTA

- Fund an EOTA secretary general (part time) for a period of 5 years
- A condition of the funding is to follow a plan to grow the association's revenue, so the post becomes self financing.
- Support (e.g. by shared cost financing) the EOTA to promote the industry's strengths at international, regional and national government levels. E.g. events, brochure, showcase.
- It is in ESA/EC interest to ensure that the EO VA industry is able to present its capabilities, advantages and views with maximum coherence and credibility.
- Support the EOTA to create and maintain for three years an on-line trade directory targeted to downstream users.
- Provide funds, administered by the EOTA, to support the involvement of SMEs in trade association working groups (technical and policy development).
- Support the participation of TA representative(s) in communicating ESA/EC policy to members and maintaining TA policy:
- Understanding ESA/EC policy and developing a formal response to it is very time consuming. Industry often does not have mature and credible views on policy because it lacks insufficient resources to develop them.
- Support actions by the EOTA to facilitate VACs in partnering more effectively.
- Helps to overcome fragmentation of the industry.

