

**EARSC Position Paper**

**on**

**GMES / Copernicus Governance**

**(EO Services Industry Perspective on the Governance of GMES / Copernicus)**

*The European Association of Remote Sensing Companies, EARSC represents the Earth Observation geo-information services companies in Europe. Today EARSC about 65 members coming from 20 countries in Europe and including nearly 50% of the total number of European EO service companies. Over 60% of these are small or medium sized enterprises. Our members include both commercial operators of EO satellites and downstream, value-adding companies. The sector plays a key role in providing value-added geo-spatial information to its customers in Europe and the world. In 2010, the revenue of EARSC members is estimated to be around €700m and giving work to around 2600 highly skilled employees. The industry is growing at around 10% per annum.*

## **1.0 Introduction**

*The governance of Copernicus remains an unresolved concern. This paper expresses the views of industry both towards the overall governance and the role that industry should play. In the paper, we look at the EU policy context of Copernicus, then the policies that will define the programme. We give our views on the issues that are key to the governance and then those that are of particular importance for industry. We provide some conclusions and recommendations including that we shall set-up an industry forum based around the EARSC working group.*

### **Background**

In May 2009, EARSC produced a paper giving its views on the governance. In this paper, we proposed to bring the views of the EO services companies to the EC and looked forward to a discussion on this issue. We emphasised the importance of engagement between the EC and industry. Finally, we noted that unfair competition between public and private organisations should be avoided.

Then in 2011, two further papers were produced which contained the following recommendations concerning the governance:

- A fully functioning governance scheme could take some time to implement. Since services are already being started it could be envisaged to develop this in two steps.
  - Firstly, an interim scheme should be established where all stakeholders can exchange views. This would function under preliminary rules that can be reviewed after a relatively short period of time before introducing a more permanent structure.
  - Legislation in place in 2012 should be reviewed in 2014 with the intention to modify and streamline.
- Whilst the ultimate control is envisaged under the EU as the major funder of the operating infrastructure, other stakeholders have key roles to play and a suitable governance scheme must allow for all views to be heard.
- Industry representatives both data providers and information product providers, have key and critical views to provide. A governance structure put in place must reflect this and should cover:
  1. Copernicus data and product list maintenance and modifications
  2. Registration criteria and licence conditions
  3. Future data needs and Sentinel missions.

With the launch of the first Sentinel satellite only a few months away some action is necessary and anticipated in 2013.

## **The Current Situation - Where are we today?**

Today, some measures have been put in place for the development and the initial operations phase of the programme. These include:

- In the political framework, a GMES Partners Board, a Programme Committee dealing with the R&D elements, a Security Board and a User's Forum through which MS are consulted on many of the key aspects of the programme development
- In a technical framework, ESA is in charge of building the Sentinel satellites and the associated ground segment, Eumetsat and ESA for the operations, and EEA, EMSA ECMWF, JRC take the lead on some of the Copernicus Services including the gathering of in-situ data.

However, discussion has been very limited and no moves have been made regarding a formal engagement with industry on the management and evolution of Copernicus. A particular concern is expressed for the governance of the security services and a project – BRIDGES - has been initiated to examine this specific case.

With the BRIDGES project in mind, EARSC is organising a consultation with industry to gather views on the governance. Accordingly, a working group has been established bringing together interested industry representatives from SMEs and large companies to develop the industrial perspective. This position paper is the result of this consultation and reflection and is endorsed by all EARSC members.

## **2.0 EU Policy Context**

*The policy context for Copernicus is rather complex. The main goal and policy of Copernicus is to provide support for environment policy and for security policies but in addition, the products will apply to many other EU policies such as regional, agriculture, fisheries etc. Furthermore, Copernicus will also make a contribution towards growth and competitiveness goals of the EU which will require an appropriate industrial policy.*

### **Information serving EU Policies**

Copernicus is an EU programme designed to ensure European access to geo-spatial information needed by policy makers. Information is structured into 6 key services; land monitoring, marine environment, atmosphere, climate, emergency management, security. As described by the European Commission,

*“The objective of Copernicus is to provide, on a sustained basis, reliable and timely services related to environmental and security issues in support of public policy makers’ needs.”<sup>1</sup>*

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<sup>1</sup> SEC (2005) 1432, Global Monitoring for Environment and Security (GMES); from concept to reality; Communication from the Commission to the Council and European Parliament.

Whilst the emphasis is on serving environment and security policies the geo-information developed can be used equally for many other EU policies including; agriculture, fisheries, regional development, transport etc. Organising this into a coherent system is a major challenge which requires strong management involving many stakeholders.

However, in addition to this core goal ie to serve EU policies with key geo-information, the programme has direct relevance for the EU growth and competitiveness policies and for industrial policy.

### **Supporting Growth and Competitiveness**

A second key goal for Copernicus is to encourage competitiveness and economic growth which shall be fostered in all EU activities and shall be a driver in any possible investment to be performed by EU money. The Lisbon Treaty clearly establishes the basis:

*“The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. It shall promote scientific and technological advance.”*

In addition, the Lisbon treaty also gives the EU competences to set-up an EU space programme putting competitiveness and growth as primary objectives:

*“...To promote scientific and technical progress, industrial competitiveness and the implementation of its policies, the Union shall draw up a European space policy. To this end, it may promote joint initiatives, support research and technological development and coordinate the efforts needed for the exploration and exploitation of space”*

Hence we can see two dimensions to growth and competitiveness to which Copernicus will contribute:

- For the public sector, the information will help decision making and lead to improved growth through many of the EU policies. Improved information availability and quality can impact on agriculture, transport, fisheries policies etc. bringing wide economic benefit.
- For the EO geo-information services sector, the data and information that is available and which will be generated for public use can be exploited into commercial and export markets. In this way, the EO geo-information services industry will develop leading to jobs and economic growth.

The second of these two dimensions leads to consider relevant EU industrial policy.

### **Industrial Policy**

Maximising the contribution to growth and competitiveness will require that a suitable industrial policy is applied. This is likely to be reflected in several policy areas of which the key aspects will be by:

- setting the appropriate mechanism to ensure Copernicus implementation requirements are defined in an open and transparent way with the required EU and National bodies
- ensuring an open selection approach with clear tender evaluation rules and with equal access to available public Copernicus infrastructure and data.

- challenging the industry in terms of technological needs to foster innovation and by establishing the appropriate links with the EU R&D and National funding programs.
- supporting EU industry in international markets (ensuring access to Copernicus data, export licensing, government to government agreements, international treaty negotiations, etc)
- restricting any security conditions to a minimum
- helping to ensure that industry participation is maximised

Copernicus governance should therefore ensure that:

- the implementation process is transparent,
- all suppliers are treated equally and that any directly involved in decision making are not participating in the services,
- all stakeholders have an appropriate voice within the governance structure.

In addition to a suitable industrial policy, other policies determining the manner in which Copernicus operates will also help shape the potential for growth and competitiveness. We discuss these in the next section.

### **3. Policy Issues for Copernicus**

*The way in which Copernicus is implemented in policy terms has a very strong influence on its contribution to the EU policies. In particular the data policy and the governance policy but also procurement will be important. Here we look at the “internal” policies, ie those that will guide the operation of Copernicus.*

#### **Copernicus Data Policy / Access to data**

One of the key aspects of Copernicus, which will determine its long term success, is the data policy that will be applied. EARSC has provided views on data policy and has supported the proposal that access should be “free and open” on the basis that this will give the maximum possibility for the industry to develop and flourish. Earlier position papers have explained this rationale which has now been analysed further through a recent study. The final report “GMES and Data: Geese and Golden Eggs” is available from the EARSC web-site and looks at the economic impacts of a free and open policy.

This concludes that an FODP will offer the best possibility to develop the industry and to reap the economic benefits. It avoids unnecessary cost burdens on the public sector side if a charging policy is applied and it stimulates innovation and creates new business opportunities. The report offers a number of conclusions and recommendations including to ensure that adequate attention is given to addressing problems faced by private satellite operators who have invested in EO systems.

The Copernicus governance bodies shall take the definition and management of the Copernicus data policy as a high priority dealing with:

- Data distribution policy of the Sentinel data.
- Data distribution policy and IPRs of the Copernicus core services provided products.

The data and products delivered under the Copernicus programme shall be accessible by all EU stakeholders on a non-discriminatory basis. This means that the necessary legal and technical facilities must be established. The Copernicus governance bodies shall have a specific responsibility to monitor and analyse the application of the data policy and to review its efficacy for anomalous impacts.

Copernicus governance bodies should have adequate resources and internal structure capable to analyse the issues, legal, competitiveness, growth and to resolve any conflict; for example the introduction of new data products.

### **Procurement Policy**

The procurement policy for Copernicus services can play a strong role in establishing a world-leading EO services industry. The policy should in any case be based on EU principles of fair competition including in terms of data access where an appropriate legal framework and IPR conditions should be introduced.

There needs to be a clear and consistently applied procurement policy that as far as possible under international rules gives a preference to EU suppliers. The process should be transparent and contracts should be renewed on a regular basis. A stable, fair and transparent process will give the assurance to industry to invest in product development and R&D.

Some form of registration or certification scheme could be considered as a means to ensure competent suppliers are selected.

Many of the suppliers of EO services are SME's which makes it so innovative and dynamic. Specific measures to encourage and support SME's should therefore be brought towards Copernicus procurement.

### **Products and Services Policy**

Each Copernicus service will maintain a list of the products and services that are offered. This list must be maintained under the stewardship of the governance bodies. The list will comprise those services which are demanded by the European public sector users.

Technology development and user requests will lead to discussions to change the basic list. Any changes to the list should only be introduced after an impact analysis has been produced showing which is the best way to procure the new product or service. In this way industry can be confident that investments made into new developments are not negated by changes to the core list. Indeed, the supplier concerned may wish that such a change is introduced or they may feel better able to exploit their investment by other means ie direct sales to the user organisation.

Some products can also be exploited into commercial and export markets; in some cases directly and in others with little or minor additional processing. Access to these products should be assured and

under licensing conditions that will allow competitive business. In some cases, the licensing of the GMES Contributing Missions (GCM) data may need to be considered. Industry would be prepared to invest in new products and services if by doing so their access conditions can be assured.

### **Supplier Policy : The role of the Public Sector Bodies (PSB's)**

The governance body should monitor the roles of the players in the supply chain for the GMES services and make recommendations for changes where it is considered appropriate. From an industry perspective this is particularly important regarding the interface between the public and private sector organisations which should be such as to encourage investments in new products and services.

In the supply chain for Copernicus services there are not just private actors but also a number of public sector bodies (PSB's). Clearly an industry goal is to be involved as much as is possible considering that some of the key tools and competences do lie within public sector organisations. Industry investment can only take place when there is a sound business case which is severely undermined where competition is uncertain. Hence there must be a clear understanding of the role that the PSB's should play with a clear understanding on respective responsibilities, a stable situation and transparency in terms of policy.

The precise roles of public and private actors will vary according to the Copernicus service. For example the public responsibility will be higher in the case of security services than it is for land services or even for emergency. Whereas in the US, public sector bodies are legally constrained to not compete with industry, this is not so rigid in Europe. Nevertheless, it is uncertainty that is the biggest difficulty and the governance structure for Copernicus should have the responsibility to monitor the roles of those supplying the services and to act or make recommendations to act where either industry or PSB is acting against the overall interest of the EU.

### **International Policy**

The governance body will need to monitor the international aspects and participation to Copernicus. This will involve maintaining a view on access to data and downloads as well as acting as an instrument for assessing and recommending international co-operation agreements.

Many of the products will be suited for use by politicians negotiating international treaties; for example on climate change. There is therefore an inherent international dimension to Copernicus before we look at global exploitation.

### **Security Policy**

The policy for restricting access to Copernicus data and services should be transparent and should keep restrictions to a minimum. The body responsible for the security policy should fall within the governance structure. Industry would wish to ensure that any security constraints imposed do not unfairly restrict export opportunities.

## **4.0 Governance Structure**

*Since the context of Copernicus is rather complex there are many stakeholders representing different policy areas that need to have a voice. Leaving aside the specific policy areas that will benefit from the use of the information generated, what are the other important considerations from an industry perspective?*

Governance relates to consistent management, cohesive policies guidance, processes and decision rights for a given area of responsibility. It works in such a way that allows the executives to respect the rights and interests of all stakeholders.

Overall management of Copernicus is the responsibility of the European Commission under control of the EU Council. But there are many stakeholders representing key policy areas for Copernicus whose views need to be taken into account when decisions are taken. Organising the structures to gather these views and deliver them to those authorised to take the necessary decisions is what we refer to as the governance structure.

From an industry perspective, the governance model shall ensure a smoothly operating programme and a sustainable, stable long term context making industrial investment attractive. Whilst the precise structure of the governance model for Copernicus is not a major concern for industry it should be constructed in a way which will allow the issues which we do consider important to be addressed; what are the key issues?

- **R&D:** Long term R&D will be a key factor in ensuring that European industry can maintain a leading position in the world market. Copernicus governance bodies shall define a public strategic long term plan with priorities. On that basis industrial bodies will make investment decisions, suited to the defined Copernicus agenda and priorities. This plan will serve industry to plan in advance R&D priorities to target specific areas.
- **CFSP/EDSP:** The security aspects of Copernicus will be of concern to public bodies. Industry is familiar with and well-adapted to working with classified data and information. Nevertheless, very little of the products generated will present security risks and the restrictions should be kept to a minimum. The rules governing this should be as clear as possible, consistently applied and follow the EU ESDP. Oversight should be under the authority of the overall governance structure.
- **Regional policies:** One of the key users of the Copernicus services is expected to be regional bodies. The governance structure will need to find the appropriate way in which to connect with these users. Indeed there will be a relationship between industry and the regional structure which may be considered.
- **Exports:** One of the key markets that EU industry expects to address is exports (outside the EU) and there will be ways in which the Copernicus system and services may be adapted to aid industry in this area. The governance body should have the means to consider requests for specific actions to assist. For example, a government to government agreement may enable services to be provided from Europe.

- **Space:** The Copernicus governance shall be able to define the requirements of the future upstream sector (satellite and missions) based on the needs coming from the Copernicus applications and downstream sector. The Copernicus governance bodies shall drive the process of setting up the requirements and launch using the appropriate EU bodies the evolution or the development of new infrastructure. ESA and Eumetsat are expected to continue to play a key role in this respect.
- **Industry:** Finally, the interaction and engagement with industry will be of primary importance to ensure that the private sector can play its role. As recommended by the EESC:

*The positive spin-off of a sufficiently long-term programme could, in the EESC's view, generate momentum for the direct involvement of public and private enterprises in the sector, enabling them to plan investment in developing technologies to produce sensing systems that are ever more efficient in terms of cost of service quality. The ability to attract private investment and to create a service market will be crucial to the entire operation's success.*

Given the large number of SME's within the EO services sector particular attention should be given to their involvement. The advocated free and open data policy will play an important role here by lowering entry barriers and encouraging innovation. Other measures, for example quality, standards, certification, should be considered in discussion with the industry.

The governance structure will be important for determining and monitoring policy decisions but the day to day management and execution of this policy will clearly also be of almost equal importance. It is to be expected that a number of organisations are involved in this structured similarly to the Copernicus services with one overall executive agency in charge (see table in section 5).

We have believed for a long time that Europe needs a new body that can deal with and co-ordinate the diverse thematic, geographic and institutional needs for spatial geo-information data. This is perhaps more important today than ever but we recognise the political and institutional difficulties in setting such a body up. Hence we accept, reluctantly but pragmatically, that this will become a distributed responsibility. There is nevertheless a need for an executive agency to take charge of the daily administration tasks under the authority of the governance bodies.

Whilst Copernicus and Galileo have very significant differences especially in the policy areas that they serve, they are both EU programmes which exploit European space infrastructure. Copernicus is about spatial geo-information; Galileo is about location and positioning. Many of the programmatic, legal and administrative needs are common even if specialist technical skills differ for each programme. Hence there can be some merit in combining the executive role in the one organisation today represented by the Galileo Supervisory Agency.

## **5.0 Industrial Perspective**

*Why is it important to gather industry views on governance and what does it mean for industry to have some influence over the way Copernicus is managed? How can industry play its appropriate role?*

### **Industry Voice**

Industry has a legitimate concern for the governance of Copernicus and that decisions may be taken against industry interests. Why is it important that the EO services industry has a say in the governance of a public programme?

1. Industry is a key stakeholder to meet the programme objectives to create a world-leading services industry, generating jobs and economic return.
2. Decisions taken on Copernicus services and whether specific products should be included will impact on industry investment.
3. Industry has been asked to invest in the development of Copernicus services.
4. The EO services industry represents all non-public users.

As Copernicus moves towards the operational phase, we have now developed these views further with more detailed recommendations on the involvement of industry as a key stakeholder.

### **Why Industry needs to be concerned.**

Up to the present, the industry role has been as a service provider to some of the Copernicus services. However, industry is not involved in all services which in some cases are strongly dominated by public sector organisations.

One clear industry goal is to be the provider of GMES services to the largest extent possible but this is not just to maximise the industry share of the work (which is a legitimate goal in its own right), of even more importance is the capability for industry to exploit the public, Copernicus investment elsewhere. In particular, to take the competences developed as a service provider into other markets; such as commercial businesses and exports.

There is a clear distinction between the public sector actors which act in the public good and which cannot effectively use the competences to develop new business areas i.e. export markets, and industry which is geared towards this goal. The industry position then is clear, to a maximum extent possible, services should be outsourced to industry. In the area where this is not possible for various reasons e.g. security or specific skills or tools, then the public sector body should ensure a close, stable and transparent working relationship with industry.

Industry seeks to be able to exploit the public investment in Copernicus by making business in commercial sectors and in public sectors outside of Europe (export). New business will generate employment and wealth in line with the goals of the Lisbon Treaty quoted above.

Hence, there are many areas where industry can play a significant role in guiding the way Copernicus is designed and operates and there are a few areas where this is essential.

- Which products and services should be included within Copernicus scope of activities?
- What should be the requirements for future satellites and sensors?
- How should the acquisition and processing of satellite data evolve to provide an optimum system?
- What are the best products and processing chain to address the commercial and export markets?
- Engaging with public actors to ensure maximum efficiency
- Organising new markets and opportunities

Other topics will emerge as the programme evolves.

### **Copernicus Products and Services**

We described this situation in section 3. The concern is to ensure that industry can invest, confident in the knowledge that this will not be undermined by changes in the definition of Copernicus products. Furthermore, the EO services industry represents a whole raft of users that would not otherwise be engaged. The EO services industry are at an intermediate position in the market and in the value chain.

Collaboration between industry, research institutions and public bodies shall be fostered to bring required innovations in the same direction and move to operational capabilities the research efforts performed at the different levels.

New product development shall be encouraged through generic R&D activities funded through Horizon 2020, ESA, national programmes and industry investment. The governance bodies shall liaise with EU research in order to align priorities in the operational context with R&D lines.

An industry group will be formed to provide views and recommendations into Copernicus decision making. A medium – long term strategy should be developed.

### **Commercial users of Information**

Without the EO services industry, a wide range of commercial users views - representing important, large industries - are missing from the governance.

In an ideal situation, some of these large users might be ready to engage with the Copernicus governance to present their views directly. However, today the market is not sufficiently mature. EARSC has been working for the last 2 years with the oil and gas industry and has just succeeded in getting an EO committee established within their trade body. Similar discussions are on-going with the insurance sector. Today it is clear that neither group would be ready to consider Copernicus sufficiently important to their business to invest the time and effort to participate to Copernicus meetings on a regular basis. It is to be hoped that the market stimulus coming from Copernicus could change this in time.

## **Evolution of the System**

To ensure a sustainable Copernicus implementation, the approach must evolve from a technology pull to a final-users push. In such scheme the final-users through the downstream and core services providers and also from the R&D activities shall be able to push for implementing improvements and new capabilities in the Copernicus EU infrastructure. The Copernicus governance bodies shall manage that process shape the different needs provided by the different actors and translate the priorities into the EU Copernicus program for its implementation. Liaison with the European Space Agency shall be also set-up to align the different priorities.

The implementation of the evolutions in the space sector shall be also driven by the competitive approach and using EU and ESA programs for that purpose.

## **International Dimension**

As already described, the growth and the leadership of the EU industry require internationalisation and market expansion. To foster this expansion the Copernicus governance bodies shall link with international organisations, third country national bodies to offer the Copernicus models as basis for the implementation of such services outside Europe. This includes the use of the EU provided satellite data and the Copernicus services. Industry will support in such process by demonstrating existing capabilities and showing the value added such capabilities will bring in each particular geographical market. Collaboration agreements shall be pursued at EU and National level with third countries. The utilisation of the capabilities in existing wider programs such GEOSS shall be fostered.

For this purpose it is suggested that within the Copernicus governance model an international relationship structure is created fostering the implementation of the Copernicus capabilities outside Europe and working with the EO services industry to that goal.

## **Public-private relationships**

The Copernicus implementation model shall avoid as far as possible the public body's insourcing of services. Minimum set of operational services shall be provided by public bodies in the Copernicus context. Public bodies would play a role as independent evaluation and also as independent assessment of the services provided by the industry.

As it has been previously highlighted, competitiveness is the only way to warranty a high quality of services, keep costs under control and also facilitate the expansion of the EU industry to broader markets. Competitiveness shall be fostered in all the Copernicus implementation levels, for this reason it is recommended to ensure that the governance bodies, embracing industry, EU users and national and international bodies, consider the required procedures and mechanisms that are put in place.

## **6.0 Conclusions and Recommendations**

There is no doubt that the European EO services industry has a key role to play in helping to ensure that Copernicus meets goals set for growth and competitiveness. A strong and vibrant industry will both enable the public sector to receive accurate, pertinent and effective information allowing it to deliver efficiencies in many policy areas as well as itself growing through enhanced business.

The industry anticipates that having access to reliable and sustainable satellite Earth Observation data, complementary in-situ data and indeed processed information products will provide new business opportunities in commercial and export markets beyond the public sector that will be the main beneficiary of Copernicus.

In order that Copernicus can be organised and operated in the best way all stakeholders must be formally heard and their opinions given due weight in decision taking. For this reason and linked to a number of issues, some of which are explained in this note, industry must have a place within the governance structure which is to be established.

Industry has identified a number of areas where consultation and formal opinions are required. EARSC will work with the EC and other stakeholders to establish the right industry consultation mechanisms and the manner in which these should be introduced into the governance structure. As a starting point, we shall establish an industry forum bringing together representatives of the key players in order to provide representative views on key issues.

*We should then discuss how this body shall be represented in the appropriate governance bodies which may well require participation in a number of different groups.*