

## **EARSC input to ESA EO Strategy**

### **Introduction**

EARSC welcomes ESA's invitation to review the paper on "Elements of an ESA Earth Observation (EO) Strategy", reference ESA/PB-EO(2015)8 dated 5 February 2015, and the opportunity to provide feedback from a EO services sector perspective. This paper summarises our feedback.

Overall, we appreciate that ESA with Member States, develop a strategy and long term vision for the EO activities, projects and programmes in Europe. It is well-recognised that ESA should work in partnerships with organisations as the EC, Eumetsat and others and indeed with industry in what is a rather complex landscape. We suggest that the paper can be sharpened (based on the version we have seen from mid-March) to more clearly define a strategy, but anticipate that others will already have made similar comments. As an example, we consider that developing International co-operation (8.5 in the version we have seen) should be driven by the strategy and not be an objective in itself. There are other examples and maybe some of the programmatic elements could be taken into an annex or another document.

We support and are encouraged by many elements of the paper, such as the recognition of the need to consult with the EO value-adding industry sector, and recognition of the role of EARSC in representing the views of this sector. We welcome ESA's acknowledgement of the importance of the private sector, and of the need to address export markets. We support the arguments that ESA's Earth observation activities should be driven by user needs and the role of EO in addressing society's grand challenges. We agree that ESA has a central role to play in European EO endeavours and that ESA should take the role to organise and supervise European Earth Observation activities which can meet the data needs of public sector and scientific users whilst maintaining a competitive industrial capability.

We also appreciate the work that ESA has done to date in supporting the development of European EO applications and services, and in helping to develop the European and international markets for these. However, the services market still has a long way to go to reach maturity, and we are keen to ensure that ESA's EO strategy to 2040 supports the EO value-adding services sector as strongly as possible. Given ESA's mandate towards European industry, particularly the need to ensure the capacity of European Industry to deliver world-class technology, we believe that ESA's strategy with respect to the downstream services sector should go much further than it does currently, and should include more concrete elements, as outlined below.

## **Our Major Concerns and Recommendations**

### **1. Include a direct responsibility / mandate to help grow the EO services sector.**

Despite the various efforts made to date to bring about substantial growth in the downstream EO services sector, EARSC's research shows that it remains small and dominated by micro-enterprises. There is much that ESA can address in its strategy that would help our sector to overcome its main barriers to growth. Our major areas of concern in this area include:

- The boundary between European initiatives geared towards public institutions and private industry still remains very unclear. Too often we find private industry having to compete with public sector institutions for EO service development projects. A major proportion of R&D projects are still being undertaken by public institutions and national public funds, channelled through ESA to meet operational requirements, remain in the public sector.
- Too often the focus of investment is on the space sector and particularly the satellites and their operations, and focused more on the scientific merits of the programme, and less on the end-user sectors and their geospatial information needs. In order for our sector to help ESA deliver societal benefits through technological advancement, we need to see this done the other way, i.e. the geospatial information needs of users should drive the focus of technology investment.
- The threat to European EO services from outside Europe continues to increase, as seen from the emergence of Google and PlanetLabs, and the investment in EO from countries like India and China. Equally we see a dominance of North American software tool and geospatial platform providers. European industry needs ESA's help to address these threats.

To help our sector, EARSC would like to see ESA take direct responsibility to help grow the European EO services sector, and see the growth of the sector clearly addressed as an objective in ESA's EO strategy and industrial policy. We would like to see ESA draw clear boundaries between public and private sector initiatives, with significant levels of support dedicated specifically to the private sector; and we would like to see ESA's strategy include initiatives to develop the competitiveness of European industry to succeed on the global stage.

### **2. Fully engage the downstream sector in the definition future EO missions and programmes.**

ESA and Member States increasingly look to the downstream sector to justify investments in the upstream, by showing growth and multiplier effects, and EARSC fully supports the validity of this approach. Our concern is that the downstream industry currently has no voice in the definition of missions and programmes, and therefore we are poorly positioned to deliver the evidence ESA seeks, once the missions are launched and data is flowing to companies in our sector. The Copernicus programme has been developed without substantive input from the private sector services community.

Whilst we appreciate that ESA does seek the views of the EO research and public user communities in defining its missions and programmes, as well as seeking impartial advice from advisory bodies, these can often be dominated by the research and space technology sector viewpoints, biasing programs towards scientific and technological requirements. What has been missing is the EO services sector perspective, to define from the outset how the mission will be exploited and how investments will generate returns. We therefore recommend that engagement with the EO services sector through EARSC for the definition of programmes and missions is made a central pillar of ESA's future strategy.

EARSC is uniquely positioned to ensure that the commercial user exploitation aspects are integrated in the mission concept from the outset, and to ensure that ESA will be able to show multiplied returns on the investments it makes in the upstream programme. Engagement with our sector could be achieved by including industrial representation in the committees that define the programmes, or by ensuring serious representation of the downstream sector in the ESA Industrial Committees, or via a formal EO services advisory group including ESA and representatives from our industry sector.

### **3. Help to create a mature market place with paying customers.**

A key challenge to the EO services sector today is the scarcity of customers willing to pay for geospatial information derived from space. The market will only reach maturity when there is widespread understanding of the benefits that EO services can bring, coupled with an understanding of the value of those benefits which results in a willingness to pay for them. ESA is in a unique position to help bring about this shift in attitude, across diverse end-user sectors both institutional and commercial, and we would like to see this explicit in the EO strategy.

One of the key aims of the Copernicus programme was to help bring about such a shift of attitude and perception amongst potential users and customers, but the process is very slow. The EC does not act as a paying customer of EO services – it could mandate use of EO services to meet a variety of policy needs - but does not. The EC does of course provide R&D funding to help develop offerings for new markets, but this is very limited, is always heavily over-subscribed, and again dominated by academic and institutional players, so is insufficient on its own.

International co-operation is cited as a goal for ESA which can be a useful mechanism to help develop the market for European EO service providers. Some measures have been taken (in partnership with EARSC); for example working with the World Bank, ADB and other IFI's which have strong potential in this respect. With other organisations such as GEO, Future Earth etc, the role of the private sector is less clear and needs to be worked out. A stronger partnership with European industry to engage with these bodies is an example of where we can work together to develop the international market.

EARSC would like ESA to work with us to develop both the public sector market and the commercial market for European EO services, both within and outside Europe. We would also like to see ESA

include the possibility to fund or support innovative industry-led proposals for programmes and missions, for example initiatives similar to Skybox, PlanetLabs or UrtheCast in North America; this may be achieved, for example, by ESA sharing its expertise with industry, or by data-buy schemes for initiatives that also serve scientific needs.

## **Conclusion**

EARSC hopes that ESA will be able to reflect some or all of these elements in its updated EO strategy document, and we would be pleased to engage further to elaborate on any of the points we have raised or provide further views on how they could be addressed in ESA's EO strategy.