EARSC

European Association of Remote Sensing Companies

An industry-led repository of open source resources for geospatial data exploitation

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Context

These are exciting times for Earth Observation data exploitation:

- The number of Sentinels in orbit continues to grow, as does the number of national and commercial EO missions, generating vast amounts of data
- The 'big data' challenges mean that we are having to find new ways of working with EO – *bringing users to the data* to exploit it collaboratively.
- ESA, EC, and many European member states are investing in tools and technologies to help us exploit EO data in such collaborative ways.
- EARSC is examining the question of how to ensure that the benefits of these investments are made easily accessible to the whole community.

We propose that such tools and components developed in Europe using public funding should be made freely and openly available as Open Source (OS) for others to reuse, with accompanying help and guidance.

Concept Paper

EARSC *Concept Paper* outlines the initiative:

- Short paper – 4 pages – now open for consultation and feedback from the EO services community
- Not just for EARSC members – the initiative would only succeed if it is widely adopted by the whole community
- Please review the paper and send us your feedback and comments!

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Concept Paper: Industry-led Repository of Open Source Resources for Geospatial Data Exploitation

1. Introduction

As Europe's Copernicus programme of Earth Observation satellites and services continues to develop, both the European Space Agency (ESA) and the European Commission (EC) plan to make substantial investments in the area of geospatial "big data" exploitation. European countries are simultaneously investing in national initiatives to exploit geospatial data. In parallel with these, EARSC seeks to establish a European marketplace for geo-information service providers[1], building on the available geospatial data exploitation tools and technologies. The projected vision is one of an eventual *ecosystem* of data exploitation platforms, able to interact and interoperate.

In order to ensure that maximum benefit is derived for the whole community (public and private, institutional and industrial) from the many investments being made, it would be a significant advantage if the suite of software tools and components developed for geospatial data exploitation were to be made freely and openly available as *open source* (OS) for others to download and reuse, and for them to add their own enhancements and publish these back to the community. Such an approach would deliver several benefits to the entire community, including:

- Fostering *collaboration*, helping to build clusters of interest around common themes within the community of stakeholders interested in developing such tools;
- Encouraging *innovation*, by promoting a more agile approach to development of new techniques and capabilities, drawing upon pooled know-how and expertise;
- Moving towards *standardisation* of the interfaces and interactions between such tools and components, and thus helping the development of the *ecosystem* of platforms;
- Ensuring *persistence* of the fruits of today's investments for the long term, such that they continue to be enhanced and built upon well into the future.

To realise the benefits, EARSC considers it highly desirable to establish *a common inventory and repository* of such open source tools and components, with associated governance mechanisms to ensure that the tools are properly curated and continue to evolve.

With this concept paper, we seek to sound out all stakeholders, covering both the scientific/institutional sector and industrial/private sector (including EARSC members and non-members) to determine whether there is interest in EARSC establishing and managing such an open source repository on behalf of the whole community, making it accessible to all stakeholders in a free and open way. We consider two alternative approaches, set out in the sections below.

[1] http://earsc.org/file_download/308/EARSC+PP+-+Creating+a+European+marketplace+for+EO+services.pdf

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Available online: http://earsc.org/news/concept-paper-industry-led-repository-of-open-source-resources-for-geospatial-data-exploitation

Scope

EARSC, or a dedicated body established for the purpose, would provide:

- **Catalogue** – maintaining the master "product tree" of open source technologies available for geospatial data exploitation;
- **Quality** – manage a community feedback system, where users can comment on success integrating combinations of components, and make suggestions for improvements or contribute enhancements;
- **Assistance** – help and guidance to organisations wanting to participate; provide advice to new entrants how to publish their tools, feedback etc.
- **Promotion** – encouraging the community to make relevant tools and components open-source, and publicising the suite of available tools;
- **Legal** – establishing the common legal environment in which this initiative would reside – plus tackling issues such as IPR, liability, etc.
- **Governance** – oversight of the initiative and interactions within it.

Benefits

The initiative would deliver benefits to the whole community, including:

- Fostering **collaboration**, helping to build clusters of interest around common themes in the community of stakeholders interested in developing such tools;
- Encouraging **innovation**, by promoting a more agile approach to development of new techniques and capabilities, drawing on pooled know-how & expertise;
- Moving towards **standardisation** of the interfaces and interactions between such tools and components, thus helping develop the ecosystem of platforms;
- Ensuring **persistence** of the fruits of today's investments for the long term, such that they continue to be enhanced and built upon well into the future.

Above all, such an initiative would help to make it easier for EO services providers to construct service offerings making use of tried-and-tested , open, standardised, innovative, community-supported tools and components

Options

Two possible ways to implement this initiative

- **Option 1: Establish an entity to provide only the required coordination functions, making use of existing and well-established OS Foundations such as Apache, OSGeo and others.** We would include all relevant open source tools and components regardless of where they are hosted and how they are licensed; we provide the coordination and outreach, but leave the choice of OS platform/framework to each tool developer.
- **Option 2: Establish a new European OS Foundation dedicated to geospatial data exploitation tools and technologies, along with the required coordination functions.** Here, EARSC would establish an independent OS foundation based in Europe, providing the source code repository and community collaboration tools offered by other such foundations, as well as the required coordination and outreach functions.

Conclusion

The way forward

- EARSC seeks feedback from the community on the attractiveness and feasibility of this initiative.
- If sufficient support, EARSC will map out an implementation plan, identifying the associated costs of establishing and operating the open source repository.
- EARSC will then seek to engage with ESA, EC, member states and other relevant stakeholders to investigate means of sponsoring the initiative.

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Thank You