

## **Enabling the transition towards Earth Observation Science 2.0**

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**THEME: Sourcing the crowd – EO in partnership with citizens – under theme “Airborne and innovative remote sensing platforms and techniques”.**

**KEY WORDS:** Science 2.0, citizen science, education, open innovation, e-learning, exploitation platforms, data-intensive research.

### **ABSTRACT:**

Science 2.0 refers to the rapid and systematic changes in doing Research and organising Science driven by the rapid advances in ICT and digital technologies combined with a growing demand to do Science for Society (actionable research) and in Society (co-design of knowledge). Nowadays, teams of researchers around the world can easily access a wide range of open data across disciplines and remotely process them on the Cloud, combining them with their own data to generate knowledge, develop information products for societal applications, and tackle complex integrative complex problems that could not be addressed a few years ago.

Such rapid exchange of digital data is fostering a new world of data-intensive research, characterized by openness, transparency, and scrutiny and traceability of results, access to large volume of complex data, availability of community open tools, unprecedented level of computing power, and new collaboration among researchers and new actors such as citizen scientists.

The EO scientific community is now facing the challenge of responding to this new paradigm in science 2.0 in order to make the most of the large volume of complex and diverse data delivered by the new generation of EO missions, and in particular the Sentinels. In this context, ESA is supporting a variety of activities in partnership with research communities to ease the transition and make the most of the data. These include the generation of new open tools and exploitation platforms, exploring new ways to disseminate data, building new partnership with citizen scientists, and training the new generation of data scientists. The paper will give a brief overview of some of ESA activities aiming to facilitate the exploitation of large amount of data from EO missions in a collaborative, cross-disciplinary, and open way, from science to applications and education.