

SPACIOUS: Science PLAtform Cloud Infrastructure for Outsize Usage Scenarios

Description

The SPACIOUS project aims to boost the scientific exploitation of ESA mission data by offering a new computational framework for astrophysical research that requires Big Data and Data Mining technologies to be achieved. SPACIOUS will raise the competitiveness of the EU scientific community by increasing the Big Data and Data Mining expertise and providing easier access to these techniques. To reach this goal SPACIOUS aims to combine existing technologies in a new Data Mining environment to enable the analysis of ESA missions data up to a level which is not possible without a dedicated infrastructure.

The ambition of SPACIOUS is to open this platform to the community, while at the same time exploiting the data by developing astrophysical research, in collaboration with external scientific teams. The main idea is to facilitate and open the analysis of ESA archives to the scientific community in new ways.

SPACIOUS will make the difference by providing access to the data and, at the same time, providing the infrastructure, tools and methods to analyse these data. SPACIOUS will be the tool enabling Big Data analysis of ESA data products.

Furthermore, we expect SPACIOUS to make a change by influencing the future way to treat data in space science. A key part of the project is to produce scientific value (publications, enhanced data products and knowledge). We will face major scientific research data problems (challenges) whose analysis will be, per se, a key result of SPACIOUS. Four of these challenges will be defined internally (based on the exploitation of the massive Gaia and Euclid datasets) and used to drive the design requirements of the system, serving as test cases and technology demonstrators of the BDAF framework. In a second phase we will open the system to the community through an Open Call for proposals and will select the most relevant (both scientifically and technically) challenges submitted for their implementation.

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