

## Big Data Management for Science and beyond: problems and perspectives

*Thursday, 25 September 2014 15:00 (30 minutes)*

Big Data, or Data Deluge but also “Data Torrent” or “Data Bonanza” are simple evocative concepts that represent the overwhelming availability of digital data in several forms (the four/five Vs) from any discipline or contexts. However this new digital scientific world is still in its infancy: not all the management issues have been fully uncovered and still EU is lagging behind with respect US and the commercial environment in particular.

The boundaries among the Research and Business environments are disappearing. The same data, produced by production environments are used to explore new ideas and services and suddenly promote commercial services or solutions. In the future there will be no distinction among the two, with several challenges for the owner of data and the owner of the underline infrastructures.

Many communities are addressing the various problems for managing, preserving, searching and making sustainable the tools and instruments needed to deal with such data availability.

In Space, for instance, the ESA data coming from the Sentinel, as part of the Copernicus program, will represent a flux of 2TB of data per day, potentially (but not yet demonstrated) useful to any environment, from the Smart Cities till the Environmental studies. Local and mobile sensors claimed as available from the smart revolution will provide MBs per day in each of our smart homes, and several TBs per day in the smart cities. Billion of Smartphone’s data and personal preferences and behaviors over Telco Networks will constitute data sets with uncover possibilities of services and business opportunities.

Big data represents a challenge not only for the core eScience (Physics, Astronomy, Bioinformatics, and Chemistry, Climate and Environmental studies) but for any disciplines. A truly multidisciplinary Data eInfrastructures for eScience, need to expand its perspective and explore all these contexts. E.g. in US, EARTHCUBE, represent an attempt to collect and made available Space and other scientific data to any scientist and researchers, as well as commercial services. Such market place, somewhere referred as Information as-a-Service is an example of new paths that should be explored to exploit such unprecedented availability of digital data. Starting from existing multidisciplinary experiences, such as D4Science (along with its specialization with the Fishery and Marine Communities) and EUDAT or HelixNebula, the workshop will promote the sharing of state of the art, in term of issues, challenges and solutions from the Space, Smart Cities and Telco environments.

Potential Speakers range from Space experts till Smart City’s service providers and Telco representatives, EU technical coordinators and EC policy makers.

The objective is to identify common elements, needs and approaches onto which establish a wider partnership for the reinforcement of the European Research Area and enabling all the scientific disciplines to benefit from this availability of data either for research and (eventually) for business opportunities.

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**Session Classification:** Developing the Open Science Commons