**Big Data and Geomatics : towards a new paradigm in spatial information management**

During the last decade, the technological advances allowed a massive acquisition of digital data whose volume grows exponentially. Going from location-based social networks to smartphones, users produce huge amounts of data that are located in space and time. The various exploitations of these large and heterogeneous datasets have created a new field called “Big Data”. As most of these data are characterized by spatial and temporal components, it has become the next challenge to handle for geomatics researchers within the next incoming year.

In this presentation, we provide an overview of the main domains in geomatics that are impacted by big data. Related fields are among other things: terrestrial spatial data acquisition where the rise of powerful laser scanners, that can acquire millions of points per second in order to precisely represent built heritage in 3D, revolutionized topography; Global Navigation Satellite Systems (GNSS), powered by the European constellation Galileo, imply original researches able to increase the position accuracy of a simple smartphone user; remote sensing is now enriched by a wide open access capability thanks to Copernicus satellites which provide timely information for the management of the environment. In order to effectively manage and analyse information related to each of these revolutions, Geographical Information System (GIS) research uses innovative data storage strategies based on CityGML for 3D data, semantic web linked-data and non-structured databases (NoSQL) for the integration of heterogeneous information, data warehouses and OnLine Analytical Processing (OLAP) for decision support. The presentation is based on concrete applications about smart cities, remote sensing, firefighting…