CALL FOR PAPERS
IEEE Geoscience and Remote Sensing Magazine

Special issue on
"Big Data from Space"

Big Data from Space refers to Earth and Space observation data collected by space-borne and ground based sensors. Whether for Earth or Space observation, they qualify being called 'big' given the sheer volume of sensed data (archived data reaching the exabytes scale), their high velocity (new data is acquired almost on a continuous basis with an increasing rate), their variety (data is delivered by sensors acting over various frequencies of the electromagnetic spectrum in passive and active modes), as well as their veracity (sensed data is associated with uncertainty and accuracy measurements). Last but not least, the value of big data from space depends on our capacity to extract information and meaning from them. Big Data from Space is an emerging domain given the recent sharp increase in all three main dimensions of big data: volume, velocity, and variety. Fortunately, this increase is paralleled by tremendous amount of new developments related to big data in other fields and enabled by technological breakthroughs and new challenges in hardware and software developments, multi-temporal data analysis, data management and information extraction technologies.

This Special Issue - which follows the 2014 Big Data from Space Conference held on 12-14 November 2014 at ESA, Frascati, Italy - will present a series of papers giving a varied and comprehensive overview on the various Big data related aspects, from mainstream technology and hardware developments to data access and data processing issues. The focus will be on the whole data life cycle, ranging from data acquisition by space borne and ground-based sensors to data management, analysis, visualization and exploitation in the domains of Earth Observation, Space Science, Climate Science, Astronomy, etc. Special emphasis is put on highlighting synergies and cross-fertilization opportunities.

The topics of interest include (but are not limited to):

- Architectures, Infrastructures and Platforms for Big Data
- Data access, storage and processing paradigms
- High performance computing
- Data Mining and Knowledge Discovery
- Data Visualization and Analytics
- Data Assimilation
- Multi-temporal Analysis
- Global Geospatial Information
- Semantics and Linked Data
- Data Quality, Provenance, Trust, Privacy
- Harmonization and Standards
- Crowdsourcing and Cyber-science

Format and preliminary schedule.
Articles submitted to this special issue of the IEEE GRSS Magazine must contain significant relevance to geoscience and remote sensing and big data and should have noteworthy tutorial value. Selection of invited papers will be done on the basis of 4-page white papers, submitted in double-column format. These papers must discuss the foreseen objectives of the paper, the importance of the addressed topic, the impact of the contribution, and the authors' expertize and past activities on the topic. Contributors selected on the basis of the white papers will be invited to submit full manuscripts. Manuscripts should be submitted online at http://mc.manuscriptcentral.com/grsm using the Manuscript Central interface. Prospective authors should consult the site http://ieeexplore.ieee.org/servlet/opac?punumber=6245518 for guidelines and information on paper submission. Submitted articles should not have been published or be under review elsewhere. All submissions will be peer reviewed according to the IEEE and Geoscience and Remote Sensing guidelines.

Schedule

January 15, 2015	White paper submission deadline
February 15, 2015	Invitation notification
April 15, 2015	Full paper submission deadline
June 15, 2015	Review notification
July 31, 2015	Revised manuscript due
September 15, 2015	Final acceptance notification
September 30, 2015	Final manuscript due (strict)
December 2015	Publication date

Guest editors.
Dr. Pierre Soille, Joint Research Centre, Italy (pierre.soille@jrc.ec.europa.eu)
Mr. Pier Giorgio Marchetti, European Space Agency (pier.giorgio.marchetti@esa.int)
Prof. Lorenzo Bruzzone, University of Trento, Italy (lorenzo.bruzzone@ing.unitn.it)