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In conjunction with reading the articles in this special issue on “Service Chaining in Global Earth Observation System of Systems” I encourage IJAGR readers to peruse the Group on Earth Observations’ (GEO) website at http://www.earthobservations.org/ and learn more about their activities. GEO is coordinating a partnership of 58 organizations and 80 governments as of June 8, 2010, to develop a Global Earth Observation System of Systems (GEOSS). I am indebted to Dr. Carlos Granell from the Institute of New Imaging Technologies at Universitat Jaume I (Spain) and Dr. Rob Lemmens from the Department of Geoinformation Processing at ITC of the University of Twente (The Netherlands) for conceiving and implementing this special GEOSS issue. I would further like to single out Dr. Granell for his many efforts to support the International Journal of Applied Geospatial Research since its inception including his contributions as an author, editorial review board member, and of course guest editor. This issue of IJAGR represents a truly international collaboration with editors and authors from six countries including Spain, The Netherlands, Germany, Switzerland, Russia, and the United States.

Donald P. Albert
Editor-in-Chief
IJAGR
The Group on Earth Observations (GEO), a voluntary partnership of governments and international organizations, is developing the Global Earth Observation System of Systems (GEOSS). The purpose of GEOSS is to coordinate existing Earth Observation Systems by supporting their interoperability, sharing information, reaching a common understanding of user requirements, and improving delivery of information derived from observations to users. GEOSS is simultaneously addressing nine societal benefit areas for critical importance to our planet: disasters, health, energy, climate, water, weather, ecosystem, agriculture, and biodiversity.

To achieve the goal of sustainable development, GEOSS requires the integration of a vast amount of disparate and heterogeneous data and resources from local to global levels. Apart from other essential ingredients for the success of GEOSS such as interoperability and the usage of standards, geoprocessing workflow and geospatial service chaining provide flexible means of processing highly distributed and complex data for a wide variety of uses and scenarios across the nine societal areas.

This special issue of the International Journal of Applied Geospatial Research includes three papers on service chaining in GEOSS. The first paper “Sharing environmental data through GEOSS” discusses and exposes the challenges for GEOSS as a promising and powerful framework to share environmental data and build processing capabilities to support the achievement for sustainability development initiatives. As GEOSS is increasingly compiling a great amount of federated, disparate geospatial services and data across domain and community boundaries, the second paper “Formalizing Cross-Parameter Conditions for Geoprocessing Service Chain Validation” deals with the need to perform semantic mediation between the concepts and vocabularies brought into process descriptions for geoprocessing operations, and formalizes cross-parameter conditions based in a rule-based language. The third paper “Target Evaluation and Correlation Method (TECM) as an Assessment Approach to Global Earth Observation System of Systems (GEOSS)” proposes an assessment and correlation approach of GEOSS across the nine societal benefit areas. Building on the Systems of Systems characteristics, the TECM method aims to provide a quantitative method to evaluate the GEOSS Targets, to identify synergies and to advise about future developments of GEOSS.

The three papers represent the ongoing effort in the operationalisation of access to Earth observation data and geospatial content, serving a wide variety of users. They are devising innovative methods for distributed processes that use service-oriented architectures for accessing the huge volume of sensors, satellite imagery and spatial data.

At the same time we should observe that the challenges of GEOSS have just started. We
expect new innovations and efforts in the near future towards a System of Systems which links and integrates environmental, Earth Observations, socio-economic and institutional resources worldwide and will lead to the improvement of societal welfare.

Finally, the editors would like to thank all the contributors and the reviewers for the publication of this special issue.

Carlos Granell
Rob Lemmens
Guest Editors
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