Invitation to:

The International Workshop on Innovative Data Mining Techniques in Support of Global Earth Observations Systems of Systems (GEOSS)

Location – Sinaia, Romania
Date – 31 August – 2 September 2009

Convener – Romanian Space Agency & Mississippi State University

- Prof. Roger King (Mississippi State University MSU, USA)
- Prof. Marius-Ioan Piso (Romanian Space Agency ROSA, Romania)
- Prof. Mihai Datcu (German Aerospace Center DLR, Germany)

Scientific Committee

Mr Sergio D'Elia, European Space Agency ESA, Italy
Prof. Tuomas Häme, Technical Research Centre of Finland VTT
Dr Martino Pesaresi, European Commission, Joint Research Centre JRC, Ispra, Italy
Mr Michael Tanner, Scientific and Technical Officer, GEO Secretariat
Dr Gunter Schreier, German Aerospace Center DLR
Dr Klaus Seidel, Swiss Federal Institute of Technology, ETH Zürich
Prof. Toshinori Watanabe, University of Electro-Communications, Tokyo, Japan

The volume and diversity of data is a major challenge to the existing data exploitation and dissemination approaches used by the various agencies (e.g., ESA, NASA, NOAA, and other agencies) charged with extracting information from these data. With plans for more observing systems (e.g., N-POESS, GMES and commercial systems) and applications (e.g., tsunami warning) the challenge is increasingly going to be how to enlarge the usability of the millions of images being stored in archives and being collected in real-time for a larger and larger group of end-user applications (e.g., climate change, security, land use, weather).

To help support knowledge discovery from Earth Observation (EO) images and in-situ data, researchers around the world have begun to tackle the formidable challenge of developing concepts, tools, and applications for extracting information from the petabytes of EO data available globally.

Data and Image Information Mining (DM and IIM) are new fields of study that begin to provide tools and solutions to automating the mining (extracting) of information from data that can lead to model and knowledge discovery and the creation of actionable intelligence (exploitation).

Therefore, a progress and a gap analysis are needed to fully describe and understand the current state of the practice in DM and IIM. This will lead to an understanding and an objective assessment of the world's practices in extracting information from Earth Observation data and in developing a strategic plan for advancing the tools, as well as important open issues.

Data mining is an important issue for the Global Earth Observation System of Systems, which will provide data streams and decision-support tools to a wide variety of users and applications. As with the Internet, GEOSS will be a global and flexible network of content providers facilitating decision makers access to an extraordinary range on information products at their desk.

This “system of systems” will proactively link together existing and planned observing systems (orbital, sub-orbital, and in situ) across the world and support the development of new systems where gaps currently exist. It will promote common technical standards so that data from the thousands of different instruments can be combined into coherent data sets. It will have to manage and process, for common integration and easy user understanding, data, imagery and models from analytical software packages that will be relevant to all regions of the globe.

Objectives of the Workshop

- Baseline state-of-the-practice (SOP) data-mining techniques available to support GEOSS mission
- Capture best practices in data mining for various data types supportive of GEOSS mission
- Identify gaps in SOP data mining techniques necessary for the nine GEOSS theme areas
- Prepare report summarizing findings from workshops and recommendations

The Workshop Agenda and Key note speakers will be announced on 15 March 2009.

The Organizing Committee is currently studying the possibility of organizing, jointly with the Workshop, a Summer School on connected topics, during the week from 31 August to 5 September. The School would be targeted to students, younger scientists and users. Participants to the Workshop are kindly invited to inform the conveners of their availability to participate to the Summer School as topics leaders.

For more information

Please contact the Romanian Space Agency at geodmw2009@rosa.ro.