Since the first commercial satellite able to deliver Very High Resolution (VHR) images became operational in 1999, many space born sensors with increasing spatial resolutions have been launched. As a consequence, a number of applications earlier inhibited by the high costs of aerial images became feasible. The new possibilities brought at the same time new scientific and technological challenges. The volume of available Earth Observation Data in form of Remote Sensing images grew exponentially from then on, so that visual analysis became impracticable for a number of applications. On the other hand, the conventional automatic classification methods based on pixels and on their spectral attributes were found to be inadequate for the interpretation of VHR images.

Such scene brought about a demand for new image analysis methods able to exploit interpretative elements apparent in VHR images other than the spectral features, e.g., texture, shape and context. This theme was eventually acknowledged as a new investigation field, which has been called Geographic Object Based Image Analysis, or GEOBIA for short. Specifically, GEOBIA aims at developing automated methods to delimit and recognize meaningful objects in remote sensing imagery based on their attributes measured in distinct spatial, spectral and temporal scales, and at delivering geographic information in GIS compliant format. The worldwide interest in this field has been objectively demonstrated by a recent survey, which indicated that the number of scientific papers on GEOBIA published between 2004 and 2009 nearly exceeded the related literature published prior to 2004. This progress has been driven by the potential of GEOBIA to provide viable solutions for problems in many critical areas, such as security, environment, urban planning and management, catastrophe forecast, crop yield estimation, just to name a few. Recently the 4th International Conference on Geographic Object Based Image Analysis – GEOBIA 2012 (see www.inpe.br/geobia2012) took place in Rio de Janeiro, Brazil, where representatives of most major GEOBIA research groups presented their latest findings and results.

The IEEE Geoscience and Remote Sensing Letters (IEEE GRSL) is glad to open a "Special Stream" dedicated to GEOBIA. A "Special Stream", as opposed to a "Special Issue" where all the papers referring to a topic are published at once, is an ongoing stream of papers published on-line as soon as they are accepted, and appearing in multiple printed issues according to their acceptance date, with a common link across the issues. The Table of Contents of each issue of IEEE GRSL will identify the papers on the selected topic by suitably grouping and highlighting them. The last issue will feature an Editorial, summarizing the published results and discussing open paths for future researches. **This Special Stream is primarily devoted to works whose preliminary results have been presented in GEOBIA 2012. The submitted papers must be significantly different and improved from the GEOBIA 2012 proceeding papers. Papers with a high similarity score will be automatically rejected.** A non-exclusive list of issues to be addressed includes:

- GEOBIA theory and concepts (e.g., methodological issues and challenges, geographic object-based classification and modeling, multiscale and multitemporal interpretation strategies and representations, accuracy assessment, integration with GIS),
- GEOBIA methods and algorithms (e.g., classification algorithms, feature extraction, change detection, image segmentation, machine learning, visualization),
- GEOBIA applications (e.g., urban and environmental monitoring, feature detection, disaster management, map updating, applications of new data and sensor systems).

The Special Stream is now open for submission until December 2012. The first issue featuring this Special Stream is expected for March 2013. Prospective authors should submit their manuscripts electronically using the following URL: http://mc.manuscriptcentral.com/grsl. When submitting a paper, please select "GEOBIA Special Stream" from the menu for manuscript type. Submissions must be no longer than 5 pages in IEEE double column format and are evaluated through the IEEE GRSL peer-review procedure (http://www.grss-ieee.org/publications/letters/).

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