Object-Based Image Analysis

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Level: ADVANCED

This half-day webinar is designed to help participants harness the true power of object-based image analysis (OBIA). It is recommended that participants have a strong foundation in remote sensing and GIS, and at least some exposure to OBIA.

This webinar is particularly well suited to individuals who are finding it difficult to extract information from the latest generation of high-resolution imaging and lidar sensors using OBIA techniques. Specific emphasis in this webinar will be paid to moving beyond the standard "segment and classify" approach that is typically employed in most OBIA projects to an iterative workflow that better mimics the type of mapping carried out by human analysts by fully incorporating the spectral, geometric, and contextual information present in an image. Through a series of lectures and demonstrations, participants will be exposed to the methods that will enable them to build effective and efficient OBIA routines.

The webinar will be divided into four parts:

I. Theoretical foundation for the application of OBIA technology, drawing from:
   a. remote sensing
   b. neurobiology
   c. cognitive sciences literature

II. Review of the current approaches to OBIA, with particular attention to some of the pitfalls that often prevent OBIA technology from being applied to its full potential, focused on effective approaches to, and best practices for, object-based feature extraction including a thorough review of segmentation algorithms.

III. Advanced topics, including:
   a. image object fusion
   b. pattern recognition
   c. morphological routines
   d. context-based classification.

IV. Conclusion, with recommendations on how to design and deploy enterprise OBIA systems capable of processing of datasets containing billions of pixels.

Note: Demonstrations will make use of a broad range of remotely sensed (e.g. imagery and lidar) datasets.