

Around the Center

USGS EROS Center



RCA-EO: A Clearer View of User Requirements and EO Capabilities

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Here at USGS EROS, meeting the needs of the earth observation data user community has been a priority since the Center's inception over 42 years ago. As EROS moves forward in supporting future Landsat missions and developing a Land Change Monitoring Assessment and Projection (LCMAP) system that will provide users with application-ready data and land change

assessments and products, determining what users need has taken on even greater importance.

"EROS is leading an effort called the Requirements Capabilities and Analysis for Earth Observation, or RCA-EO, for USGS," says Greg Stensaas, USGS RCA-EO and Remote Sensing Technologies Project Manager. "The goal of RCA-EO is to determine, in a consistent, unbiased, and system agnostic way, what users need—and want—in terms of earth observation data and how those needs can best be met."

To help realize this goal, USGS is collaborating with the National Atmospheric and Oceanic Administration (NOAA) to develop a state-of-the-art Earth Observation Requirements Evaluation System (EORES). NOAA has more than a decade of experience in assessing user requirements and associated systems solutions. "EORES is the heart of RCA-EO," says Greg Snyder, USGS Land Remote Sensing Program and Project Sponsor for RCA-EO. "It is an open-source, web-based suite of tools and databases populated with information about earth observation user requirements as well as current and planned earth observation capabilities."

“One of the things we’re doing right now is gathering user requirements from federal and civil earth observation agencies,” explains Stensaas. “We’re utilizing a very detailed user elicitation process designed to help us identify user requirements that reflect peoples’ true needs in terms of earth observation data.” Snyder continues: “For example, users may need to observe things like vegetation condition or elevation data at a given resolution, accuracy, and location. These fundamental requirements can be relationally mapped to multiple observation systems rather than being ‘hard coded’ to a specific or limited set of technology solutions. Our approach is geared toward identifying users’ current requirements, and finding out what major and minor enhancements to capabilities would more fully meet their needs.”

Stensaas, Snyder, and others with the RCA-EO effort are also involved with the second Earth Observation Assessment (EOA-2), part of a national strategy supported by the White House Office of Science and Technology Policy to evaluate the nation’s earth observation capabilities every three years—an evaluation that USGS is co-leading through the U.S. Group on Earth Observation (USGEO) Assessment Working Group (AWG). Snyder is a tri-chair of the AWG along with colleagues from NOAA and NASA. EOA-2 was preceded by EOA-1, which took place at the end of FY 2012, with the results published this past July. “Interestingly, Landsat was ranked second among U.S. satellite systems, and third among all U.S. observing systems, in terms of their relative ability to provide socioeconomic benefits. That’s a tremendous endorsement of the importance of Landsat data and evidence of the strong need for Landsat program continuity,” says Stensaas. EOA-2 findings will be incorporated into the EORES database for further analysis, providing an exceptionally comprehensive and consolidated view of the nation’s earth observation needs and capabilities.

When complete, EORES will be a unique resource, a compilation of user requirements and earth observation capabilities with more depth and detail than anything the earth observation community has seen before, one that will enable decision makers and program managers to plot what users need against what is possible, or potentially possible, in terms of gathering earth observation data. “RCA-EO is all about determining what systems and data solutions will meet users’ needs, both in the near term and years from now,” says Stensaas. “It’s definitely a first, and EROS is playing an integral role in making it happen.”