

# AmericaView와 원격탐사의 지평확장: GeorgiaView를 사례로

## AmericaView and Broadening Geospatial Applications Horizon: GeorgiaView Case

Jeong C. Seong, Ph.D.(성정창)\*, Rebecca L. Dodge, Ph. D.  
University of West Georgia and Director, GeorgiaView\*,  
Midwestern State University Ex-Interim Executive Director, AmericaView

---

### Abstract

This paper introduces AmericaView, a consortium for promoting remote sensing education, research and applications. As a case study, GeorgiaView is described in more detail. The AmericaView Consortium and StateView Consortia are good examples of collaboration for broadening the horizon of remote sensing applications in South Korea. Furthermore, the AmericaView example represents an opportunity for building a stepping stone to international collaboration.

---

#### 1. Introduction to AmericaView

In 1996 Richard Beck (Miami University) and Robert Vincent (Bowling Green State University) formed OhioView as a grassroots organization in order to make public domain Landsat imagery more accessible to all users. The organization's effort was recognized by Ralph Regula (Republican House Representative from Ohio with 18 consecutive terms), encouraging him to secure \$3 million annually for the USGS to support OhioView. The funding was used (1) to develop Landsat 7 data processing stream, (2) to develop Glovis - a satellite imagery search and download tool (<http://glovis.usgs.gov>), and (3) to develop outreach services. OhioView worked to break down the barriers to performing remote sensing research and outreach such as the accessibility to data, software, hardware and education.

In 2000, at the request of Representative Regula, OhioView, NASA and USGS created the Gateway to Earth

(G2E) consortium. States belonging to the G2E consortium included Arizona, California, Idaho, Illinois, Minnesota, Mississippi, Ohio, South Dakota, Texas, Washington and Wisconsin. In 2003, based on the Congressional 'add-on' to the USGS budget, AmericaView, Inc. was established as a non-profit 501(c)(3) consortium of StateView consortia (<http://www.americaview.org>). Ten founding StateView members received the first round of annual grants in 2003, Alaska, Arkansas, Georgia, Kansas, Nebraska, Ohio, South Dakota, Texas, West Virginia, and Wyoming. AmericaView has grown very rapidly and successfully since then. As of 2009, AmericaView has 34 StateView members.

#### 2. GeorgiaView Consortium

Under the leadership of Dr. Dodge at the University of West Georgia during 2003-2008, the GeorgiaView consortium has grown to include nine partners. Most of them are the teaching institutions -- University of West Georgia, Kennesaw

State University, Gainesville State College, North Georgia College and State University, Georgia College and State University, and Georgia Southern University. Research-oriented partner institutions are University of Georgia, Georgia State University, and Skidaway Institute of Oceanography in Georgia Southern University. The major activities of GeorgiaView are education, consortium development and outreach, data archive and distribution, and research. The following describes each goal in more detail.

**Education:** GeorgiaView's primary purpose is to make the geospatial data user-community more aware of the usefulness of remotely sensed data. In doing so, GeorgiaView has fostered educational outreach to the public, teachers and educators, students, local and state governments, and environmental agencies and businesses. Education activities include developing remote sensing courses, inviting guest lectures, sharing course material, and developing training programs. The activities have been embodied through multiple workshops, trainings, meetings, and conferences. For example, Dr. Dodge has provided remote sensing workshops for K-12 teachers every year. Dr. Seong has offered geospatial technology training workshops for the Georgia Department of Transportation.

Dr. Seong also developed an on-line remote sensing course (<http://www.avuniv.org>) for AmericaView. The course, Introduction to Remote Sensing, is aimed at community college and undergraduate geography, environmental science, and natural resource management students. It includes 16 modules, each focused on an important aspect of remote sensing, such

as history of the discipline, physics, sensor technology, aerial and satellite image acquisition and processing, image interpretation and terrain analysis, and applications. The course serves as the first element in what is planned to be a much larger suite of on-line educational resources available to the AmericaView Consortium and its partners. The courses themselves are an example of a partnership between CaliforniaView and GeorgiaView, both of whom will support the effort in conjunction with national-level support by AmericaView's Executive Director and Board of Directors.

**Consortium Development and Outreach:** Creating synergy effects by further expanding the boundary of consortium is another important goal of GeorgiaView. Consortium development efforts, for example, include presenting the StateView program and activities at state, regional and national conferences and meetings (e.g., ASPRS, PECORA, State GIS Users conference), identifying opportunities for faculty exchange (between consortium members) or internship possibilities (for undergraduate and graduate students), sharing software licenses (ex. PG-STEAMER from Pixoneer Geomatics, Inc.) among consortia members, promoting collaborative research, leveraging other projects that purchase data to get imagery for the archive, and even collaborating with multi-StateView members for research and education. In the case of GeorgiaView, consortium members have strongly collaborated with various organizations such as Forestry Services, DNR, DOT, and local County governments. In most cases, outreach funds are supported by GeorgiaView, not by partner organizations. In other cases, funding is shared by two or more

partners, allowing each partner to leverage their resources to accomplish a common goal.

**Data Archive and Distribution:** Sharing data for free among consortium members is another important goal for GeorgiaView. Various image datasets have been collected since 2003. Data sources include Landsat, SPOT, ASTER, astronaut photography, high-resolution aerial photos, and MODIS. The archive size is about 200GB in a compressed format. About 60 percent of the data are Landsat scenes which are available for free from USGS since 2008. The archive has grown significantly during the last several years, and a customized GloVis application was implemented for facilitating convenient image data search and download. GeorgiaView also monitors data user information, and download data types and amounts to track the amount of data used annually.

**Research Activities:** GeorgiaView has supported various remote sensing research activities including the development of new applications or uses through pilot research projects, support for students' research and publication, and development of innovative ways and methods to process and deliver data. Consortia member research projects are supported via "mini-grants" from a leading institution to the consortium members. In 2009, GeorgiaView supported three mini-grants to member institutions. Student research projects are also actively supported by GeorgiaView. One example of the research is the analysis of urban sprawl using an interactive remote sensing method that earned the students (Figure 1) the first place honor in UWG's student research competition day in March 2009.



Figure 1. Dr. Jeong C. Seong and students

### 3. Opportunities and challenges

The success of AmericaView can be attributed to various factors. One factor can be found in the rapid increase in the availability of public domain imagery. With the rapid development and availability of various high and mid resolution satellite imagery, the relative importance of mid and low resolution satellite imagery decreased significantly, resulting in image providers such as USGS searching for a solution to promoting the use of imagery archived for a long time and for promoting the importance of mid-resolution imagery for long-term and rapid monitoring of environmental changes. The Landsat datasets are a typical example. From a universities' perspective, the decreasing price of mid- and low-resolution images opened new opportunities for environmental awareness, resources management, sustainable land practices, and workforce development. The International Charter (<http://www.disasterscharter.org/>) and various crop monitoring activities in the United Nations and the U.S. Department of Agriculture are good examples of agencies that extensively use multi-temporal mid-resolution images for fast response and timely decision making.

Along with the opportunities to work together more closely come various

challenges. One challenge is the economic down turn and reduced government funding. Even if the number of StateView member states has increased from the ten founding members to 34 in 2009, the funding level has not been increased since then; rather, it has decreased significantly, resulting in less state funding than before. Another challenging factor is the government's indecision on the future status of mid-resolution satellites. With increasing number of high resolution images and satellite maintenance costs, most of traditional, provider-driven, business models do not work well any more with mid-resolution images, which jeopardizes securing on-going funding for many satellites.

As most environmental and resource issues go beyond the boundary of 'local' community, it is not optional any more to develop various collaborations such as among state members, among multi-states, among countries, and between image providers and consumers. By doing so, the new horizon of consumer-driven remote sensing applications business models would be expanded. The accomplishments of GeorgiaView and AmericaView, as an example, prove it.

#### **4. Summary**

Efforts for broadening the horizon of remote sensing applications, specifically with mid-resolution satellite imagery were briefly reviewed with the case of AmericaView and GeorgiaView. One lesson learned is that collaboration, through a range of partnerships and cooperative projects, results in more effective and efficient use of limited funding, resulting in a cost savings and improved products for everyone involved. The next step will be to expand the AmericaView partnership to all fifty

states, and begin to explore opportunities for international cooperation. ■

**Acknowledgement** – The authors gratefully acknowledge the encouragement, comments and review on this paper by Dr. Rick Landenbergerin West Virginia University, Executive Director of AmericaView.