NOAA ADVISORY COMMITTEE FOR COMMERCIAL REMOTE SENSING (ACCRES)
OPEN SESSION MEETING SUMMARY
October 7, 2008

Open Session

The open session of the thirteenth meeting of NOAA's Advisory Committee for Commercial Remote Sensing (ACCRES) was convened on October 7, 2008 at 1:10 pm in the Auditorium of the National Association for Homebuilders, Washington, D.C. In accordance with the provisions of Public Law 92-463, the meeting was open to the public.

Committee members present:

Dr. James A. Lewis, Chair, Center for Strategic and International Studies
Dr. David J. Gorney, Vice-Chair, The Aerospace Corporation
Dr. William Gail, Microsoft (representing Dr. John C. Curlander)
Ms. Dawn Sienicki, DigitalGlobe (representing Ms. Jill Smith)
Mr. Matthew O'Connell, GeoEye
Mr. Donnie Self, National Geospatial-Intelligence Agency
Mr. Cary Ludtke, Ball Aerospace & Technologies Corporation (representing Mr. David Taylor)
Mr. Joseph Fuller, Futron Corporation
Dr. Marguerite Madden, The University of Georgia
Mr. William Malzahn, Department of State

Observers:

Dr. Rick Heidner, The Aerospace Corporation
Dr. Brad Doorn, American Society for Photogrammetry and Remote Sensing (speaker)
Mr. Adam Keith, Euroconsult North America, Inc. (speaker)
Mr. J. Christian Kessler, NorthRaven Consulting (speaker)

Presiding Staff of the National Oceanic and Atmospheric Administration (NOAA):

Mr. Charlie Baker, Satellite and Information Service
Ms. Kay Weston, ACCRES Designated Federal Officer
Mr. Glenn Tallia, General Counsel

Opening Statement

Dr James Lewis, Committee Chair, called the thirteenth ACCRES meeting to order, welcoming attendees and introducing Committee members and guests. He summarized the discussions at the closed morning session, when the Committee heard reports from two task groups examining regulatory policies and industry trends. Based on these studies, ACCRES will make recommendations for a more pro-active approach by NOAA, including some recommendations that go beyond NOAA in the areas of education and the International Traffic in Arms Regulations (ITAR). Dr. Lewis added that the Committee also heard several briefings on the growth of foreign capabilities in remote

sensing that highlighted growing foreign SAR capabilities at a time when there have been no U.S. launches of SAR satellites.

NOAA Update

Ms. Weston presented timeline statistics on NOAA's actions processed during FY08 and data on NOAA's licenses. She then reviewed activities since the March 27 ACCRES meeting. These included the updating and renewal through 2010 of the ACCRES charter; the transfer of all paper records to e-records; the development of new procedures to expedite license actions requiring foreign agreements; the development of a proposal for interagency consideration on providing higher resolution imagery (better than .5-meters) during natural disasters; the initiation of a study on commercially available SAR imagery; the creation of a new policy for the Lunar X prize; and the drafting of new guidance to clarify the definitions of "enhanced/unenhanced" and "significant and substantial" data. Looking ahead, Ms. Weston said NOAA would sponsor a SAR panel and a Multi-Spectral panel at the November 16-20 PECORA Conference in Denver. NOAA also hopes to hold a regulatory workshop in the new fiscal year. Finally, Ms. Weston outlined an organizational change that will result in the consolidation of the CRS Licensing Office and the Monitoring/Compliance Office into a single, new Office of CRS Regulatory Affairs headed by Jane D'Aguanno.

Dr. Lewis thanked Ms. Weston for her valuable contributions to the work of ACCRES and said that the Committee would look forward to working with Ms. D'Aguanno.

Remote Sensing User Community Needs and Interests from the ASPRS Perspective

Dr. Brad Doorn, President-Elect of the American Society for Photogrammetry and Remote Sensing (ASPRS), presented a briefing on imagery requirements now and in the future. Starting with an introduction to the ASPRS, Dr. Doorn stated that the organization's mission is "to advance knowledge and improve understanding of mapping sciences and to promote the responsible applications of photogrammetry, remote sensing, geographic information systems (GIS), and supporting technologies." ASPRS has a robust awards and scholarship program that totals over $30,000 each year. It also has a strong series of publications and plays an important role in the development of standards and guidelines for the geospatial community. With a major focus on students, ASPRS has established a student advisory council, has formed new student chapters and has seen a substantial increase in student membership.

ASPRS is conducting a ten-year remote sensing industry forecast and is now publishing Phase 5, which has a more international focus than the previous four phases. Dr. Doorn addressed requirements, pointing out that they go beyond spatial resolution. He showed examples of different operational uses of imagery, including reporting on natural disasters, illustrating a *Washington Post* story on illegal logging in Burma, showing the effects of the draining of Iraqi marshes, illustrating coastal changes, and demonstrating forest loss to soybean agriculture in Brazil. A chart listing a wide range of operational programs that use moderate resolution data included activities such as support of DoD operations, detecting and monitoring volcanic activity, invasive species monitoring, carbon cycle monitoring and numerous other programs. In his final comments, Dr. Doorn

said that remote sensing is not just about spatial measurement but also provides transparency, objectivity, reliability, frequency and timeliness. It is ASPRS's responsibility, he concluded, to be engaged and to affect debates and decisions concerning worldwide food security, environmental management, health management, national security and homeland security.

Ms. Sienicki commented that the presentation fit in well with the work of the ACCRES task groups that emphasized the importance of the move from technical capabilities such as resolution to value-added product.

Dr. Doorn's presentation may be found on the NOAA website (www.licensing.noaa.gov).

Foreign Space Policies

Mr. Chris Kessler briefed on foreign competition in the remote sensing satellite industry, identifying the major competitors operating high resolution satellites and the types of satellites in operation. He also discussed foreign government support for satellite programs and the regulation of commercial distribution of imagery. Going country by country, Mr. Kessler reviewed details of the programs in Canada, France, Germany, Israel, Italy, India, Russia, South Korea, Taiwan, Japan, China, and the UK. In comparing foreign programs, Mr. Kessler identified several key themes:

- Shared national reconnaissance/civil systems vs. separate programs;
- Government-private partnerships vs. separate government and private programs;
- SAR vs. E-O and other spectra; and
- How governments regulate imagery distribution – by operation, different forms of case-by-case.

Mr. Kessler's briefing can be found on the NOAA website (www.licensing.noaa.gov).

Current and Future Remote Sensing Trends

Mr. Adam Keith's presentation, entitled "Earth Observation Remote Sensing Trends," was divided into four parts: an overview of earth observation (EO) investment; the focus of EO programs; the commercial data market; and challenges and conclusions. Comparing 1990 and 2007, Mr. Keith illustrated the rapid expansion of government investment in space programs and the number of nations involved. The U.S. remains the largest investor, followed by Europe and Japan. . 90% investment in Human Spaceflight is from the US. For the rest of the world, EO is the primary area of investment. Between 2007 and 2012, 42% of all civil-government satellites launched will be for EO purposes.

With regard to the focus of EO programs, Mr. Keith pointed to the increasing number of satellites from emergent national programs, predicting that by 2017 about 29 national agencies will launch EO satellites, one-third of EO satellites worldwide. He said there is a preference towards smaller, lighter, faster missions for environmental monitoring, with climate change at the top of the agenda. Emerging nations trying to develop satellite technology tend to launch generic (medium resolution optical sensors) to meet local or

regional requirements. These programs will look to commercialize data, with low-cost or free data likely. Mr. Keith also stated that dual-use is coming to fruition with the crossover between military and commercial high resolution, realized through COSMO-Skymed and Pleiades. He noted that security is the first consumer of commercial data and concluded there is likely to be greater coordination of European military EO, perhaps through Europe's Multinational Space-Based Imaging System (MUSIS).

Mr. Keith predicted strong growth in the commercial data market, with the 2007 market of $735 million reaching $2.5 to $3.4 billion in 2017. In addition, the commercial sector is diversifying with some 29 commercially operated satellites expected to be launched between 2007 and 2016, an increasing number of government satellites looking towards commercialization, and an increase in SAR capacity ("the Golden Age of Radar"). One of the challenges is the slower growth of services, with the same growth seen in the data market not experienced in EO services. In conclusion, Mr. Keith said emerging programs require greater coordination. Global environmental issues require a constant supply of geo-information and increasing high resolution systems from numerous sources are making data restriction unworkable. The future of the EO industry will be characterized by:

- Commercial operators trying to diversify data usage away from security;
- Increased commercial data competition that will help develop downstream services;
- The creation of vertically integrated actors through commercialization; and
- Further consolidation and integration within the value-chain as companies look to tap into the large but fragmented service sector.

Following the briefing, Mr. Fuller commented that the presentation supported the reports of the two task groups at the morning session. In response to a question from Ms. Weston about the future role of the European Space Agency, Mr. Keith said the ESA is not important in dual-use and has no military or defense role. Its role is in areas such as climate change. Mr. Gail asked about the role of aerial remote sensing. Mr. Keith responded that he saw aerial remote sensing as complimenting rather than competing with space based systems.

Mr. Keith's presentation is available at the NOAA website (www.licensing.noaa.gov).

Public Comments

Dr. Lewis asked for public comments or questions. There being none, the Open Session adjourned at 3:00 pm.