Imagery Requirements Now and in the Future

Presented to the National Oceanic and Atmospheric Administration’s Advisory Committee on Commercial Remote Sensing (ACCRES)

October 7, 2008

by

Bradley Doorn
ASPRS President-Elect
AGENDA

- ASPRS Intro
- Users Defined
- Requirements
The mission of the ASPRS 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.
Promote Awards and Scholarships Through the ASPRS Foundation

- We have a very robust Awards and Scholarship Program
- Awards and Scholarships total over $30,000 each year.
- ASPRS Foundation currently has $800,000 in endowment funds
- New scholarships established each year.
Enhance the Strength and Value of ASPRS Publications

- DEM Manual, 2nd edition released last year
- Upcoming significant publications
  - GIS Manual
  - Sensors and Platforms
  - Lidar Manual
PERS delivers the latest information about innovation in geospatial information technologies.
ASPRS’s legacy of establishing community wide standards and guidelines is integral to the Society’s standing in the geospatial community.

Elevating the Standards subcommittee to a standing committee last year has been an important step.
Students – Our Inspiration
Today, Our Strength
Tomorrow

- New student chapter toolkit
- Student Advisory Council
- New student chapters
- Provisional Certification
- Signature, the online ASPRS Student Member website and resource
- Student membership increase substantial
- Marguerite Madden to Chair the new Ad Hoc Committee on Student Assistantships
“an ASPRS provisionally certified professional is worth their weight in gold.”

“we pay a bounty for ASPRS certification”

Certification raises the stature of our profession and the prestige of the Society.
Increase Outreach, Awareness, and Use of Imaging and Geospatial Information

- **10-Year Remote Sensing Industry Forecast, Phases 1-5.**

- **Phase 1 and 2 documents desperately need updating.**

- **ASPRS and Charles Modello will continue to lead this effort.**
ASPRS is financially strong

ASPRS awards and scholarships will soon be completely endowed, and most importantly
As identified by the Board of Directors:

1. **Breadth of membership**
2. Quality publications
3. **ASPRS’s stature in the geospatial community**
4. **Certification Program**
5. **Financial strength**
Users Defined

**ASPRS members**
- Connecting decision makers with remote sensing information
- Defining value of remote sensing

**ASPRS member value recipients**
- Commercial and Public Sector
- Defense and Civilian
- Local and Global
Requirements...beyond spatial resolution

ASPRS/NOAA/NASA Industry Forecast (perspective)
- Spatial resolution dependency on users
- Gov’t value recipients still large driver of imagery use
- Workforce concerns (ASPRS JOB ONE!)
- Future forecasts

Future of Land Imaging/Landsat Survey
- ~$1 billion impact
- ~50% operational
Natural Disaster Reporting

Earthquake: Bhuj, India
Washington Post – Illegal Logging Story

April 1, 2007 page 1 story, used GeoEye and DigitalGlobe imagery in graphic

These satellite images of a mountainside in Burma near the Chinese border are believed to show the impact of recent logging. The image at left, from 2001, shows largely intact forest cover. The 2005 image at right shows multiple clear-cuts of large forest patches. The reasons for the clear-cuts can’t be ascertained without visiting them, which is difficult in authoritarian Burma, but they took place in a region where environmental groups have reported rampant illegal logging.

Draining of the Iraqi Marshes

GeoCover LC data shows over 9,000 km² drained from 1990 to 2000

Location:
47° 07’ 29.12” E
31° 15’ 45.70” N

Case study courtesy of MDA Federal
Coastal Change

Case study courtesy of MDA Federal
Forest Loss to Agriculture: Soybean Expansion in Brazil

Case study courtesy of MDA Federal
Operational programs using moderate resolution data include:

- Inventorying toxic releases
- Monitoring grant performance
- Emergency response
- Coastal change analysis
- Support of DoD operations
- Mineral exploration
- Water rights monitoring
- Land use and land cover change
- Crop estimates
- Forest management
- Space cartography
- Wildlife reintroduction
- Design of defense systems
- Range management
- Invasive species monitoring
- Deforestation monitoring
- Recreation planning
- Soil analysis
- Ecosystem mapping
- Water resource planning and administration
- Snow and ice monitoring
- Detecting and monitoring volcanic activity
- Wetlands rehabilitation
- Weather prediction
- Wildland fire risk assessment
- Irrigation management
- Carbon cycle monitoring
- Mapping groundwater discharge zones

Draft Results
Desired Spatial Resolution

Draft Results
Desired Temporal Resolution

Draft Results
Members Requirements
(look also at the Society that Represents them)

- Standards,
- Application development,
- Trained workforce.
Final Comments

- **Value of information increases directly with the uncertainty of a future event (situation),**
- **Remote Sensing is not just a spatial measurement requirement. It also provides**
  - Transparency,
  - Objectivity,
  - Reliability,
  - Frequency,
  - Timeliness.
It is our responsibility to be engaged and to affect debates and decisions

- Worldwide food security,
- Environmental management,
- Health management,
- National security,
- Homeland security.