

**** Remote Sensing News for and About the Private Sector ****

The Quarterly Newsletter of the IEEE Geoscience and Remote Sensing Society (GRSS) Private Sector Liaison Group

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- 1. PRIVATE SECTOR'S ROLE IN 2030 – brief editorial
What role will the private sector play in remote sensing two decades hence? Over the last twenty years, the private sector's traditional role as a contractor for government-led projects has evolved markedly. We have witnessed a rapid growth of purely private-sector offerings, from commercial satellites to internet mapping. How will this play out in the future, and what new trends are emerging? These are key questions for the private sector as well as for the government, business, and public communities that increasingly depend on remotely sensed information from the private sector for everyday functions. If the past is evidence, the private sector will be a critical source of innovation, both in technology and business methods. Innovation will allow us to do more for less, making existing systems work more efficiently and introducing new ways to solve society's toughest problems. This edition of the newsletter is dedicated to exploring the private sector's future.
- 2. IGARSS 2010 IN HONOLULU
First, [IGARSS 2010](#) (the 30th anniversary of the conference) is approaching rapidly. The theme this year is ‘Remote Sensing: Global Vision for Local Action’. For those who have attended previously, you know that [IGARSS](#) is the premier remote sensing conference for bringing together government, academia, and industry. Historic attendance has been running about 1500. A variety of tutorial sessions are planned with interest to the private sector. A highlight for 2010 is the plenary session (keynoted by the White House Office of Science and Technology Policy) and associated year-long participatory project focused on the emerging topic of ‘[community remote sensing](#)’ - this is of particular interest to the private sector with its potential for reaching large consumer groups (for more information on participating, contact Plenary Chair [Bill Gail](#)). For additional information on the conference and opportunities to exhibit, contact [Bryan Stewart](#). Future symposia include [Sendai \(2011\)](#) , [Munich \(2012\)](#), and [Melbourne \(2013\)](#).

- 3. REMOTE SENSING HISTORY 1990-2010 – the evolving private sector role

Two decades ago, remote sensing was largely a government-led activity. The private sector provided most aerial photogrammetry, but otherwise supported government programs mainly by building spacecraft and developing applications under government contracts. The first big change occurred with the emergence of commercial remote sensing satellites (such as [DigitalGlobe](#) and [GeoEye](#)) in the mid 1990's. A second big change was driven by consumer adoption of online mapping (such as [Mapquest](#), [Google Maps](#), [Yahoo Maps](#), and [Bing Maps](#)), its appetite for high-resolution imagery through consumer-centric websites such as [Zillow](#) , and the emergence of personal navigation devices and location-based mobile apps such as [Loopt](#) . During this time, new technologies such as digital aerial cameras/lidars and a trend toward government outsourcing also propelled the private sector. Along the way even traditional government-led space system contracts evolved toward a stronger private sector role ([NPOESS](#)) and then back again ([the recent breakup of NPOESS into the Joint Polar Satellite System](#)). Even the intelligence community has followed this route, with programs such as ClearView, NextView, and [Enhanced View](#). Local government sources of remotely-sensed information have grown (e.g., traffic sensors, including private sector offerings such as [Traffic.com](#)), analytical/GIS tools (e.g., [ESRI](#)) are increasingly available to the casual user, non-government sources have emerged, and internet sharing mechanisms have proliferated (e.g., [WikiMapia](#), [YouTube](#), [Flickr](#)). The number of consumer-focused use cases for remote sensing now probably exceeds those focused on government-driven needs.
- 4. APPLICATIONS IN 2030 – the ‘scale gap’

Technology evolution will have an enormous impact on what we do by 2030, but demand-driven changes are probably even more important. The ability of governments and businesses to improve efficiency and grow productivity requires increasingly sophisticated information about the world they work in – implying greater use of remote sensing. Most interesting over the next twenty years will be demand for filling in what can be called the ‘scale gap’. No longer is moderate spatial resolution with regional coverage at low refresh rates sufficient. Tomorrow’s applications will require us to work at a wide range of scales – global coverage with low refresh, high-resolution hyper-local, and more. We are faced with a seemingly impossible challenge: understanding the Earth simultaneously at scales ranging from hyperfine to global. Moreover, the need to integrate across multiple scales is growing as well. Energy is a great example – accurate knowledge of both long-term climate and near-term weather are needed to optimize power generation, particularly in the rapidly growing renewable energy sector. Much of this will be driven by the needs of individuals and communities (both consumer and business) rather than centralized governments. It all illustrates remote sensing’s fundamental ‘scale gap’: society’s demand for information at diverse space and time scales is growing exponentially, while the ability of our traditional sources to supply the information grows linearly.

- 5. CENTRALIZED REMOTE SENSING IN 2030 – our struggling institutional systems
The centralized satellite and aircraft observing systems we have historically used to understand the environment are struggling to address this ‘scale gap’. Such systems are increasingly limited by their cost and complexity; society’s growing need for knowledge that spans global to local is simply outpacing the ability of centralized observing systems to accomplish this. The needs are clear: climate, energy, food supplies, transportation, nuclear proliferation, and even basic trade. But limited budgets constrain the deployment of new capabilities, so governments’ focus has shifted to making existing capabilities more efficient through international collaborations (such as [GEOSS](#)) and commercial partnerships (such as [Enhanced View](#)). The private sector has stepped up to help fill the scale gap with centralized remote sensing capabilities of its own. For example, [Google Maps Street View](#) and [Bing Maps Streetside](#) are creating rich databases of street-level imagery throughout the world. These trends will continue, but centralized systems alone cannot solve the ‘scale gap’.
- 6. DISTRIBUTED REMOTE SENSING IN 2030 – augmenting the institutional systems
An emerging solution to the ‘scale gap’ is to call on the capabilities of community (citizens and non-professionals) to ‘augment’ centralized remote sensing systems. Centralized systems will remain critical to our knowledge base, but community remote sensing (CRS) may be the only means to bridge our environmental knowledge from global to local scales. Work similar to CRS has been done in the related areas of citizen science, citizen mapping, e-science, and more. But CRS itself is new, with new techniques and skills that differ from those of such related community-based disciplines. It is not just citizens taking pictures – the community can participate through calibration, validation, analysis, and many other means that greatly enhance our centralized systems. Applied in conjunction with centralized systems, CRS can be a powerful tool for addressing environmental issues and responding to events such as natural disasters. IGARSS 2010 builds on the CRS theme, highlighting projects and perspectives in this area – see the CRS section of the [IGARSS 2010 website](#) for more.
- 7. COMPANY NEWS - To advertise at no cost, please submit short requests to the editor <bgail@microsoft.com>

[V1 Magazine](#) promotes spatial design for a sustainable tomorrow. Our aim is to push the advancement of the geospatial toolset through our coverage, with greater analysis and visualization capabilities for increasingly better stewardship of our planet. Sign up for our free weekly V1 Newsletter at <http://www.vector1media.com>.

[Donor2Deed](#) has launched its award winning online geospatial fundraising tool with the Dublin Simon community (www.dubsimon.ie/d2d). The tool is embedded into Dublin Simons website and uses geospatial technologies to connect donors to projects to address their two main questions: ‘Where does my money go?’ and ‘Have I made a difference?’ Donors can browse various Simon projects through the interactive medium of Google Maps/Earth. Staff and volunteers remotely upload project updates to Donor2Deed and can simultaneously push those updates to donors and stakeholders through email, the website (www.donor2deed.com and www.dubsimon.ie) or a range of social media networks including FaceBook, Twitter and

YouTube. “For us it means that we can connect with our donors through a range of internet mediums effortlessly and keep them updated regularly on the impact of their donation. In addition, donors can choose how and when they want to be communicated with in relation to their donations to Dublin Simon projects,” according to Glenda Wright.

- 8. EVENTS

1- 4 Mar	Microrad , Washington, DC
3- 5 Mar	Intl Lidar Mapping Forum , Denver, CO
16-17 Mar	3D Forum Lindau , Lindau, Germany
30- 1 Mar	Where 2.0 , San Jose, CA
5- 9 Apr	SPIE Defense, Security, and Sensing , Orlando, FL
6- 7 Apr	AMS Public-Private Partnership Forum , Washington, DC
12-15 Apr	National Space Symposium , Colorado Springs, CO
25-29 Apr	Geospatial Infrastructure Solutions , Phoenix, AZ
26-30 Apr	ASPRS Annual Conference , San Diego, CA
19-21 May	Integro East , Istanbul, Turkey
12-14 Jun	Digital Earth Summit , Nessebar, Bulgaria
14-16 Jun	WHISPERS (hyperspectral) , Reykjavik, Iceland
25-30 Jul	IGARSS 2010 , Honolulu, HI
26-30 Jul	Geoweb , Vancouver, CA
29- 2 Jul	MAPPS Summer Conference , Incline Village, NV
8-13 Aug	AGU Mtg of the Americas , Foz do Iguacu, Brazil
31- 2 Aug	AIAA Space , Anaheim, CA
15-17 Sep	Intl Conf on Indoor Positioning & Nav , Zurich, Switzerland
20-23 Sep	SPIE Remote Sensing , Toulouse, France
27- 1 Sep	AMS Conf on Satellite Meteorology , Annapolis, MD
10-15 Oct	SPIE Asia Pacific Remote Sensing , Incheon, Korea
25-29 Oct	African Assn Rem Sens Environ , Addis Ababa, Ethiopia
31- 3 Oct	Geological Society of America , Denver, CO

- 9. PROFESSIONAL ORGANIZATIONS – public, private, academia
 - [Institute of Electrical and Electronic Engineers \(IEEE\)](#)
 - [Aerospace Industries Association \(AIA\)](#)
 - [American Astronautical Society \(AAS\)](#)
 - [American Geophysical Union \(AGU\)](#)
 - [American Institute of Aeronautics and Astronautics \(AIAA\)](#)
 - [American Meteorological Society \(AMS\)](#)
 - [American Society for Photogrammetry and Remote Sensing \(ASPRS\)](#)
 - [Geological Society of America \(GSA\)](#)
 - [Geospatial Information and Technology Association \(GITA\)](#)
 - [International Society for Photogrammetry and Remote Sensing \(ISPRS\)](#)
 - [International Union of Radio Science \(URSI\)](#)

[The International Society for Optical Engineering \(SPIE\)](#)
[Management Association for Private Photogrammetric Surveyors \(MAPPS\)](#)
[Space Foundation](#)
[United States Geospatial Intelligence Foundation \(USGIF\)](#)
[Urban and Regional Information Systems Association \(URISA\)](#)
[Women in Aerospace \(WIA\)](#)

The IEEE Geoscience and Remote Sensing Society (GRSS) Private Sector Liaison Group was formed in 2002 to increase collaboration between the private sector, academia, and government in the remote sensing field. The readership of this newsletter now exceeds 2000 people from companies associated with remote sensing, as well as government agencies, international space agencies, professional organizations, non-government organizations, OMB, and Congressional staff. We in the private sector want to help keep our colleagues informed of the activities and capabilities of the private sector – and the role that GRSS plays in supporting and promoting these activities. Should you need further information about the Private Sector Group, require that contact information for you or your organization be updated, or request to be removed from the list, please contact [Bill Gail](#).