



Pixels, Points and Vectors The Fuel for GEOINT



Photo courtesy of photos.com

**GGI/Next View
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NGA**



Purpose

- Present a global review of GEOINT sources
- Discuss emerging trends in GEOINT sources



What is GEOINT?



- **GEOINT ≠ IMINT**
- **GEOINT ≠ Imagery Analysis**
- **GEOINT ≠ Photo Interpretation**
- **GEOINT ≠ Cartography**
- **GEOINT ≠ Geography**

GEOINT is a new discipline that builds on all of the above and much more



Consumer GEOINT

GEOINT used during Hurricane Gustav to determine damage to power lines

Customers Affected: 953
Outage Start Time: Sept. 6, 2008
Estimated Restoration Time: Unknown
Comments: Crew is en route to repair, wire down

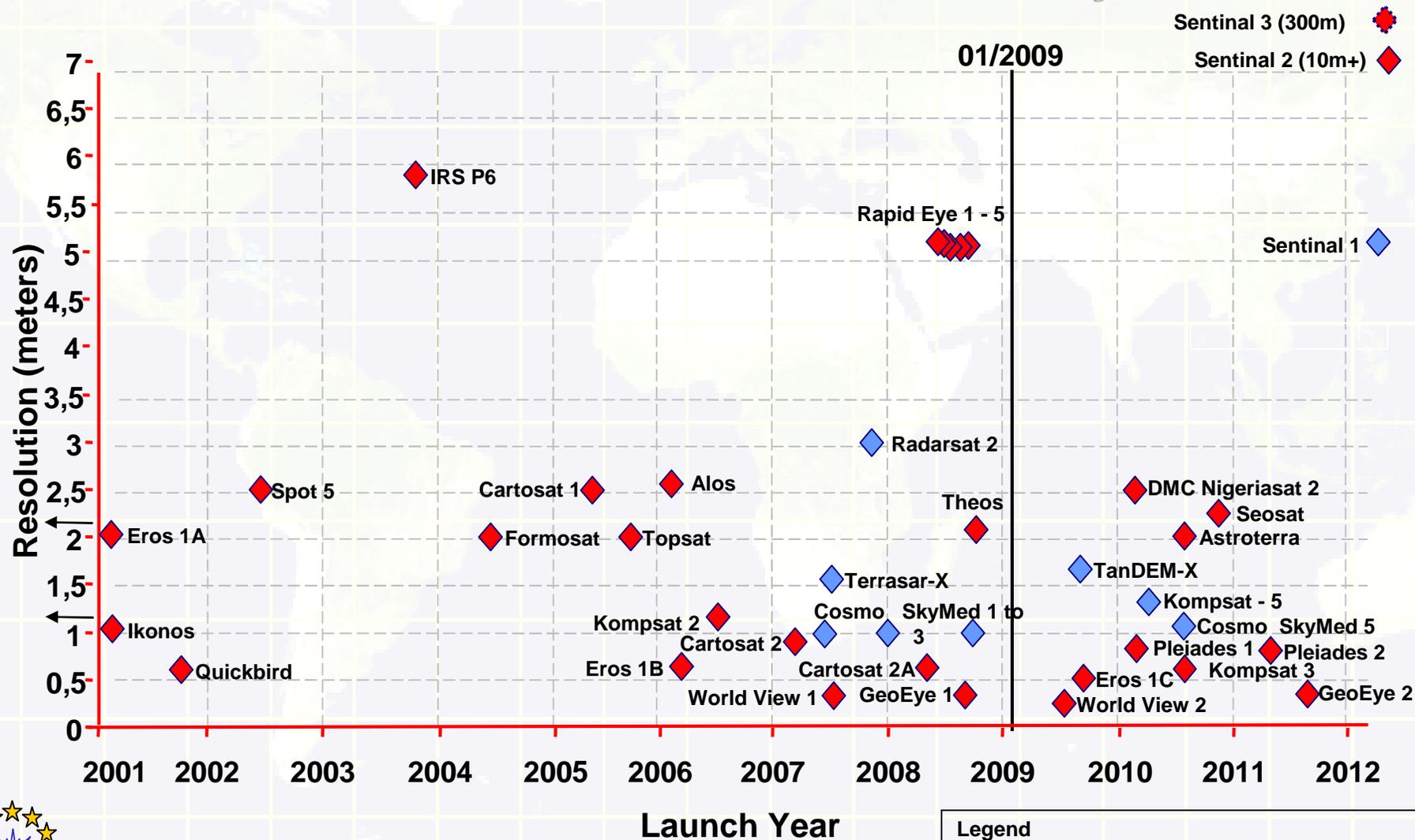
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The Fuel for GEOINT: Pixels

- National Systems
- Commercial Satellites: **37+ worldwide**
- Military Airborne: **1055+ worldwide**
- Non-military Airborne: **114+ U.S.**
- Imaging UAVs: **279+ worldwide**
- Terrestrial Sensors/Services: **millions**
- Underwater Sensors/Services: **thousands**

Satellite Sensors: Resolution and Availability



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Commercial Imagery: U.S. Commercial Collection

By Calendar Year

[Video click](#)

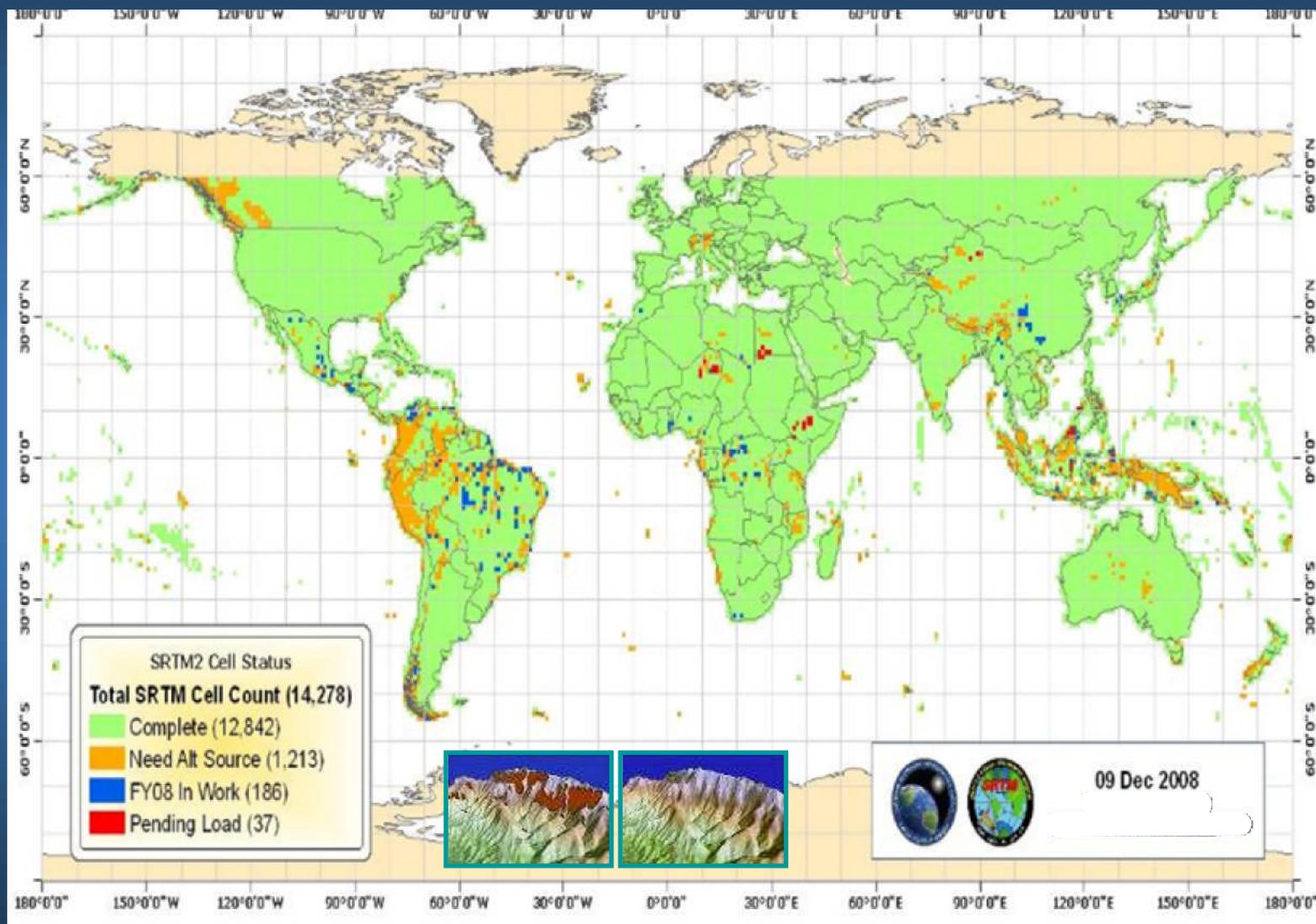


The Fuel for GEOINT: Points

- Elevation Data:
 - SRTM covered 80% of Earth's landmass covered at 3 second intervals
 - NEXTMAP® series of country models
 - RadarSat, Aster, and TerraSar X initiatives
 - LIDAR
- Bathymetric Data: 1 billion records at NGA
- Geodetic Data: 60 million points
- Points of Interest (POIs)

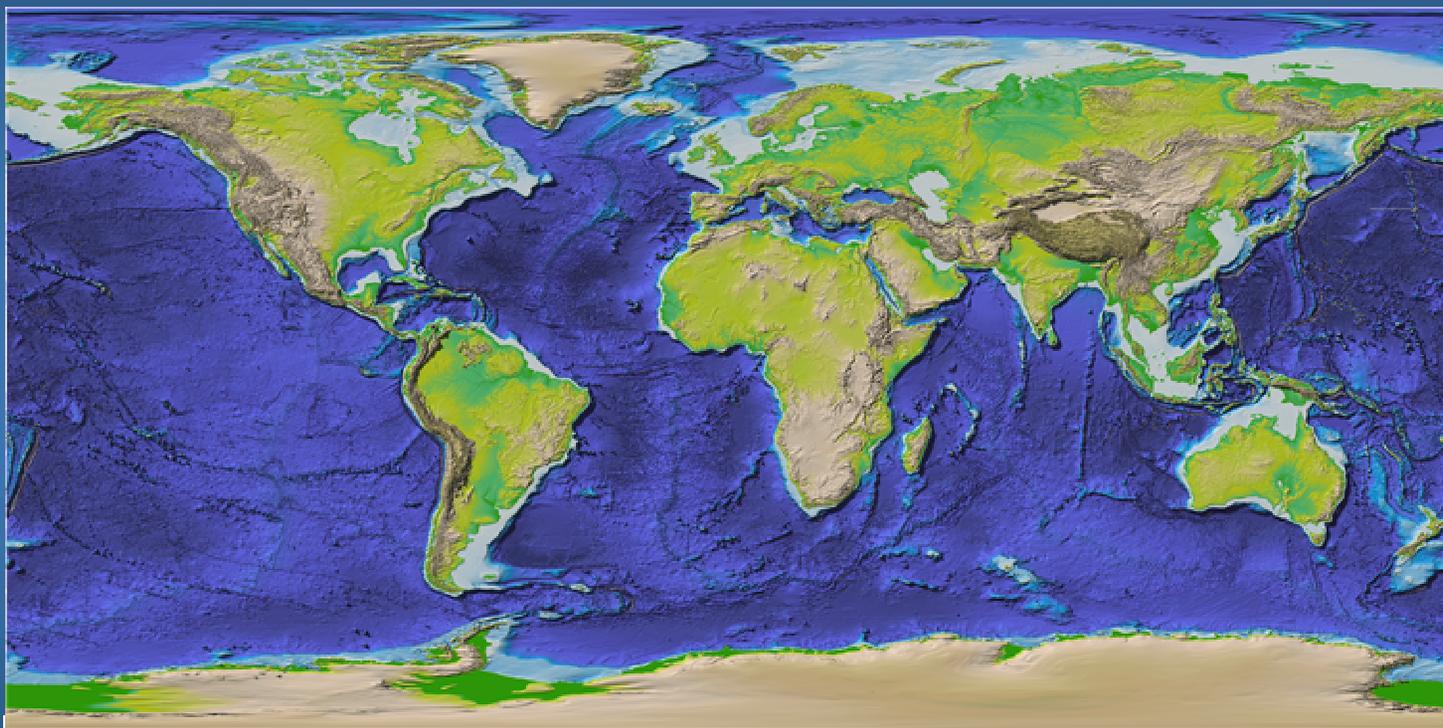


Points: SRTM Elevation Data





Progress with Points: Digital Bathymetry and Elevation Data (DBED)



Global Elevation model @ 30 sec resolution; 64,800 cells

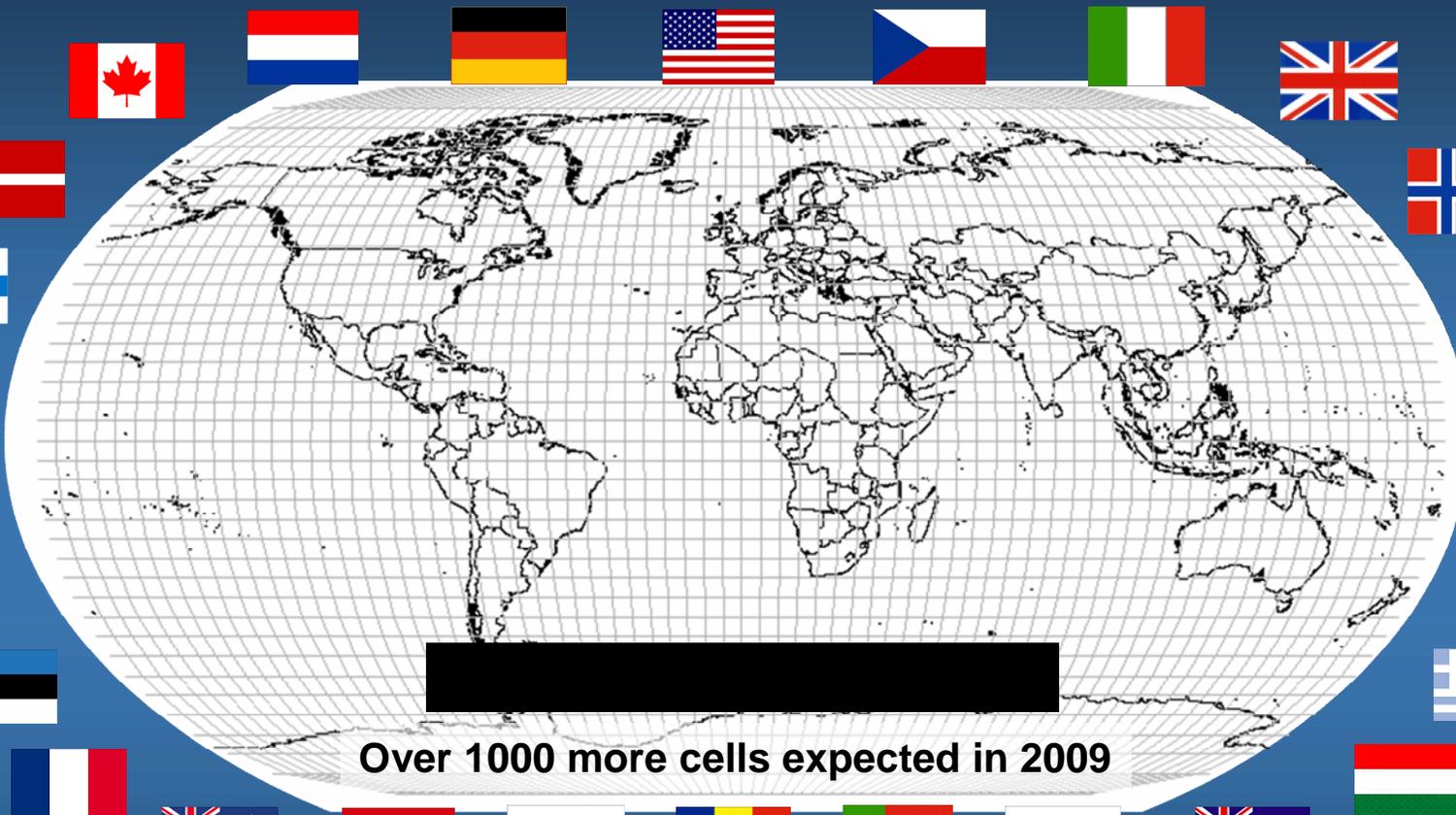


The Fuel for GEOINT: Vectors

- Standard Products
- MGCP: **3238 cells**
- SATNav Data:
 - **26 million packages delivered daily by UPS FedEx, TNT Express, and DPD**
 - **Annual sales of 68 million personal navigation units projected in 2012**
 - **450 million personal navigation enabled handsets projected to be sold in 2015**



Vectors: MGCP Cooperation



Over 1000 more cells expected in 2009

28 Member Coalition

Promotes non-sovereign production

Produces 25% of “available” global coverage

Standard interoperable dataset

Completion scheduled for 2012

Active operational use

Flexible program to accommodate national priorities



Vectors: SatNav Data



- Expanding user base
- Global data collectors
 - NGA will acquire a “best value” global vector database
 - Accuracy
 - Coverage
 - Licensing
- Award expected spring/summer 2009

Photos courtesy Aerospace Corp, Google Earth®



Pixels, Points and Vectors: Emerging Trends

- International cooperation
- Licensing
- Services
- Volunteered geographic information (VGI), collaborative mapping, crowd sourcing



Emerging Trends: VGI and Collaborative Mapping

- Spatial collaboration across almost every discipline and industry
- Accuracy of “base” more important than ever

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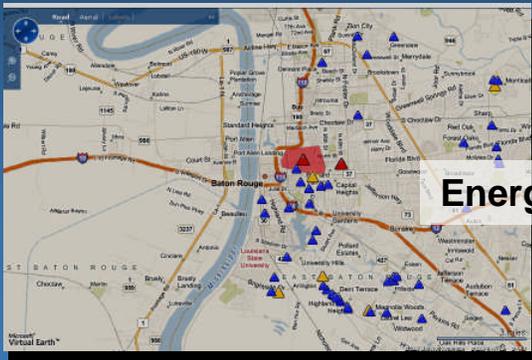
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- Hawaii Emergency Shelters
- Geotagged Flickr photos
- OSM v Google
- Student to Teacher Ratio by State

<http://www.geocommons.com/>



GEOINT – It's Everywhere



Energy

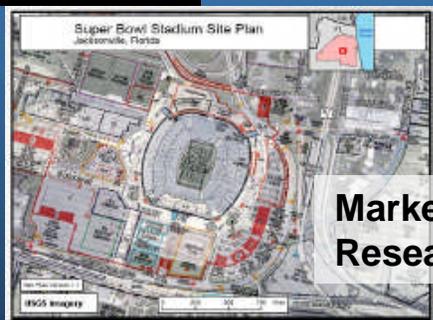
Urban Planning



Agriculture



SatLAV



Marketing Research



Natural Hazard Management



Disaster Management



Closing Thoughts

- Google Earth[®], Microsoft Virtual Earth[®], Wikimapia[®]
- Remote Sensing
- Satellite Navigation Data
- International Partnerships
- Spatial Collaboration



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