

GeoEye: Remote Sensing & Production Services



Gene Dial
JACIE
2008-03-26

Big Bear Glacier, Alaska





McMurdo Bay



Cozumel

Year	Event
1960	USG Launch of 1st spy satellite
1972	USG Landsat satellite (90m)
1984	USG Landsat satellite (30 m)
1986	French SPOT satellite (10 m)
1988	Russian satellite (7 m)
1992	Congress passes Landsat Act
1994	Presidential Executive Order
1995	Indian Satellite (5 m)
1997	US commercial OrbView-2 (1km)
1999	USG Landsat7 (15 m)
1999	US commercial IKONOS (0.82 m)
2000	Israeli EROS satellite (1.0 m)
2001	US commercial QuickBird (0.61 m)
2002	CIA memo to use commercial imagery for mapping
2003	Presidential Policy on Commercial Remote Sensing
2004	US Commercial OrbView-3 (1.0 m)
2006	National Space Policy
2007	US Commercial WorldView-1 (0.5 m)
2008	GeoEye-1 (0.41 m)
2011-2012	GeoEye-2 (0.25 m)

The Company

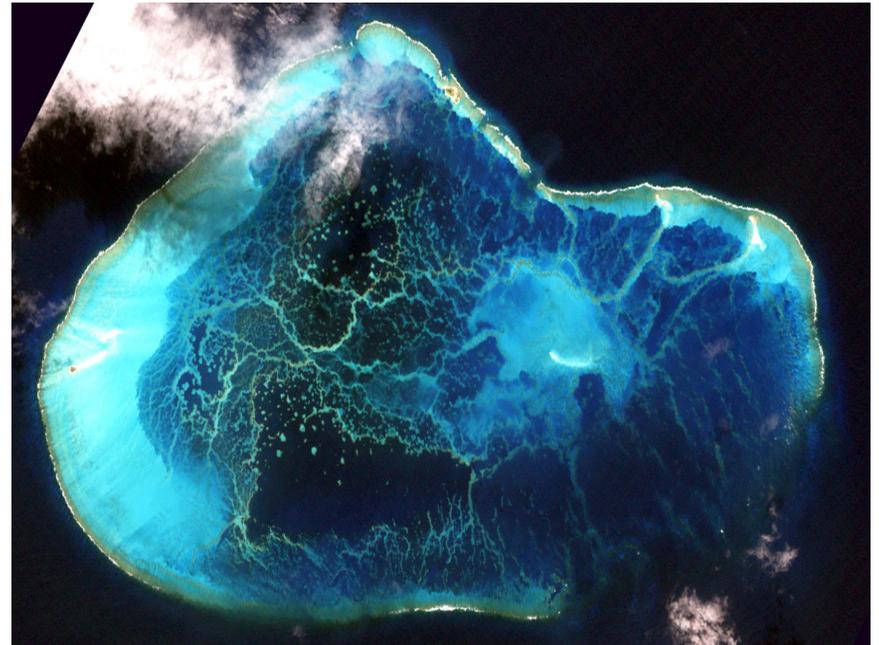
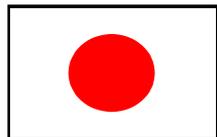
NASDAQ: GEOY

- Headquarters
 - Dulles, Virginia
- Production/Operation Facilities
 - Thornton, Colorado
 - St. Louis, Missouri
 - Norman, Oklahoma
 - Mission, KS
 - 4 Secure Facilities
- Employees: 400+
- Imagery from diverse platforms
 - IKONOS
 - OrbView-2
 - OrbView-3 (archive only)
 - Aerial (2x)
 - GeoEye-1 (coming soon)
- GEOY Stock
 - NASDAQ listing 2006-09-14.
 - Russell-3000 listing 2007-07-03.



Customers

- GeoEye provides commercial satellite and aerial imagery to:
 - U.S. Government (NGA, NOAA,...)
 - Foreign Governments
 - Domestic & International Customers
 - Global Resellers
 - Commercial Customers
 - Online Mapping / Search Engines



Pearl Hermes Atoll



GeoEye Products & Services

- Commercial image products
 - Geo, Ortho, & Stereo Imagery.
 - Aerial photography & LiDAR
- NGA products
 - CIB, DPPDB, DTED, FFD.
- Value-Added products
 - Airfield mapping
 - CI Ortho
 - Road extraction
 - Custom products



Imagery for War & Peace



President Bush,
Vice President Cheney
and SECDEF Rumsfeld,
September 17, 2001



Time Magazine - January 2004



December 29, 2004
IKONOS 1m



January 13, 2006
IKONOS 1m

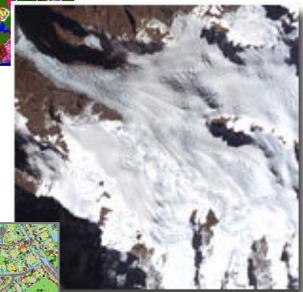
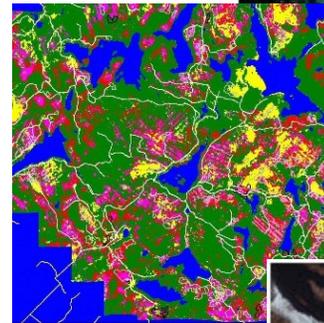
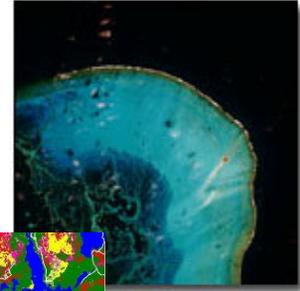


Satellite License Conditions

- Current Operations
 - IKONOS: 0.8-meter panchromatic / 3.2-meter multispectral GSD
 - GeoEye-1 Tiered Resolution Structure
 - 0.41 meter panchromatic / 1.65-meter multispectral only for USG and approved international partners
 - 0.50 meter panchromatic for commercial sale
 - Kyl-Bingham Amendment (Defense Authorization Act, 1997)
 - Imaging of Israel to be “no more detailed” than that generally available
 - Two meter spatial resolution is current operational limit
 - USG may limit imagery image collection and/or distribution during a national security crisis
 - “Shutter control” has not been exercised
- Waivers available on a case by case basis
 - For example, Humanitarian & Emergency Response
- 24-hour Hold
 - NOAA waived requirement for 24-hour hold of imagery better than 0.82 m pan effective 2007-06-29.

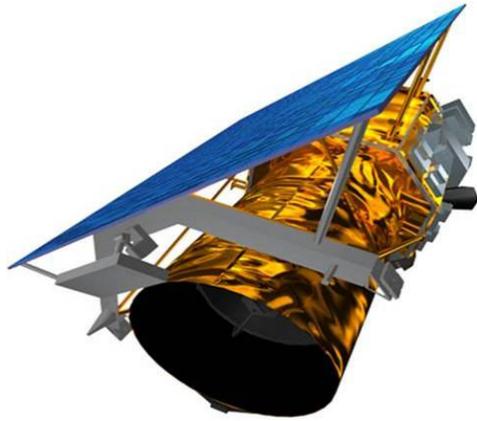
GeoEye Foundation

- **Awards imagery grants from the GeoEye archive to university students and researchers to support select projects**
 - 36 grants have been awarded since the Foundation was established in March 2007
 - Fields of study include climate change, coral reef monitoring, natural resource management, urban planning, forestry and archaeological research.
 - Awards have been made to MIT, Yale, University of Maryland, The George Washington University, The Ohio State University, Texas A&M, and Georgia Tech among many others

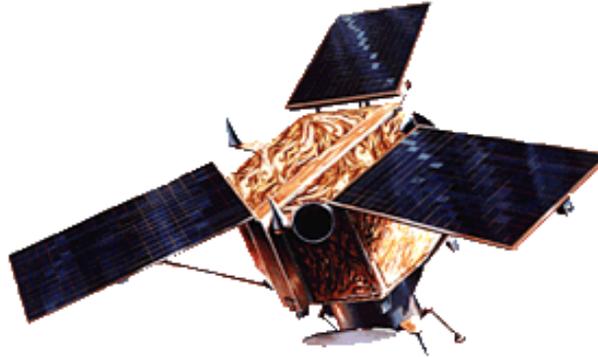


www.geoeye.com/corporate/foundation/foundation.htm

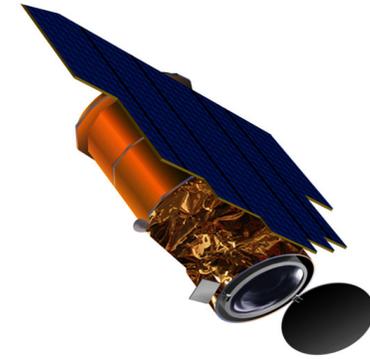
GeoEye Sensors



GeoEye-1
2008



IKONOS
September 1999



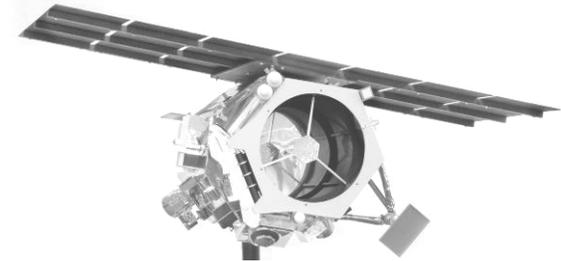
OrbView-3
June 2003 –
March 2007



**MJ Harden Digital Mapping
Camera & LiDAR sensors**
March 2007



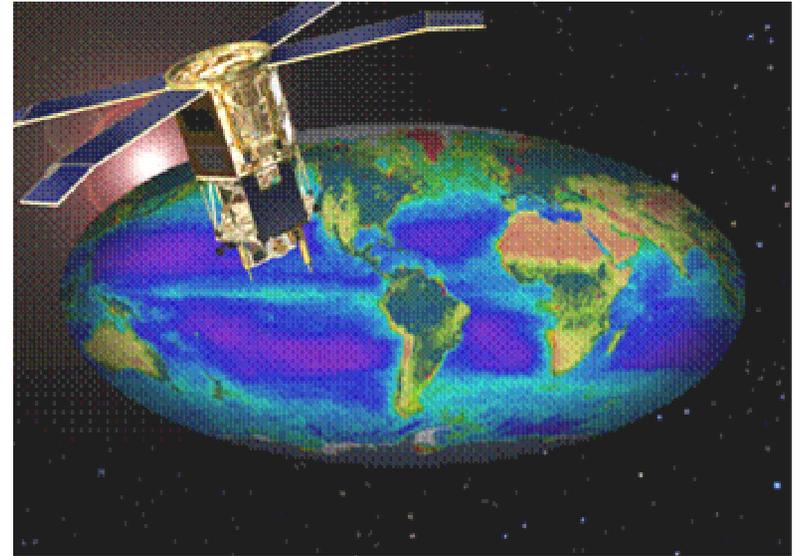
OrbView-2
August 1997



GeoEye-2
2011

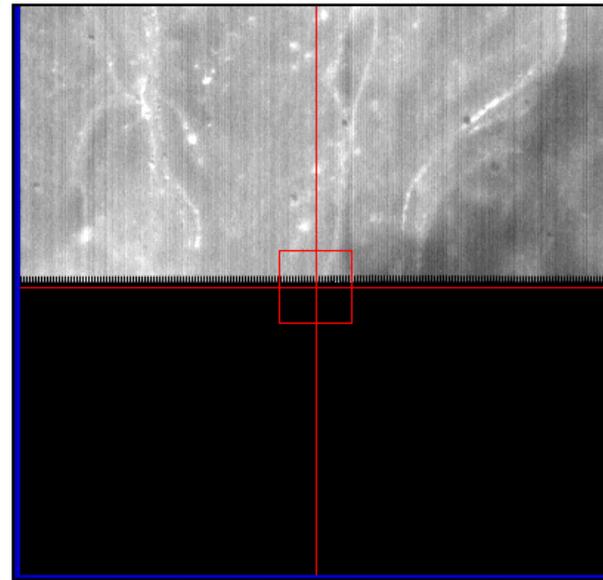
OrbView-2

- Capabilities
 - Multispectral Imaging
 - Color Bands - 8
 - Spatial Resolution - 1 km
 - Swath Width - 2,800 km
 - Revisit Time - 1 day
 - Orbital Altitude - 705 km
- Applications
 - Fishing, Agriculture, Research
Environmental Monitoring &
Naval Operations
 - “Use less gas, catch more fish”



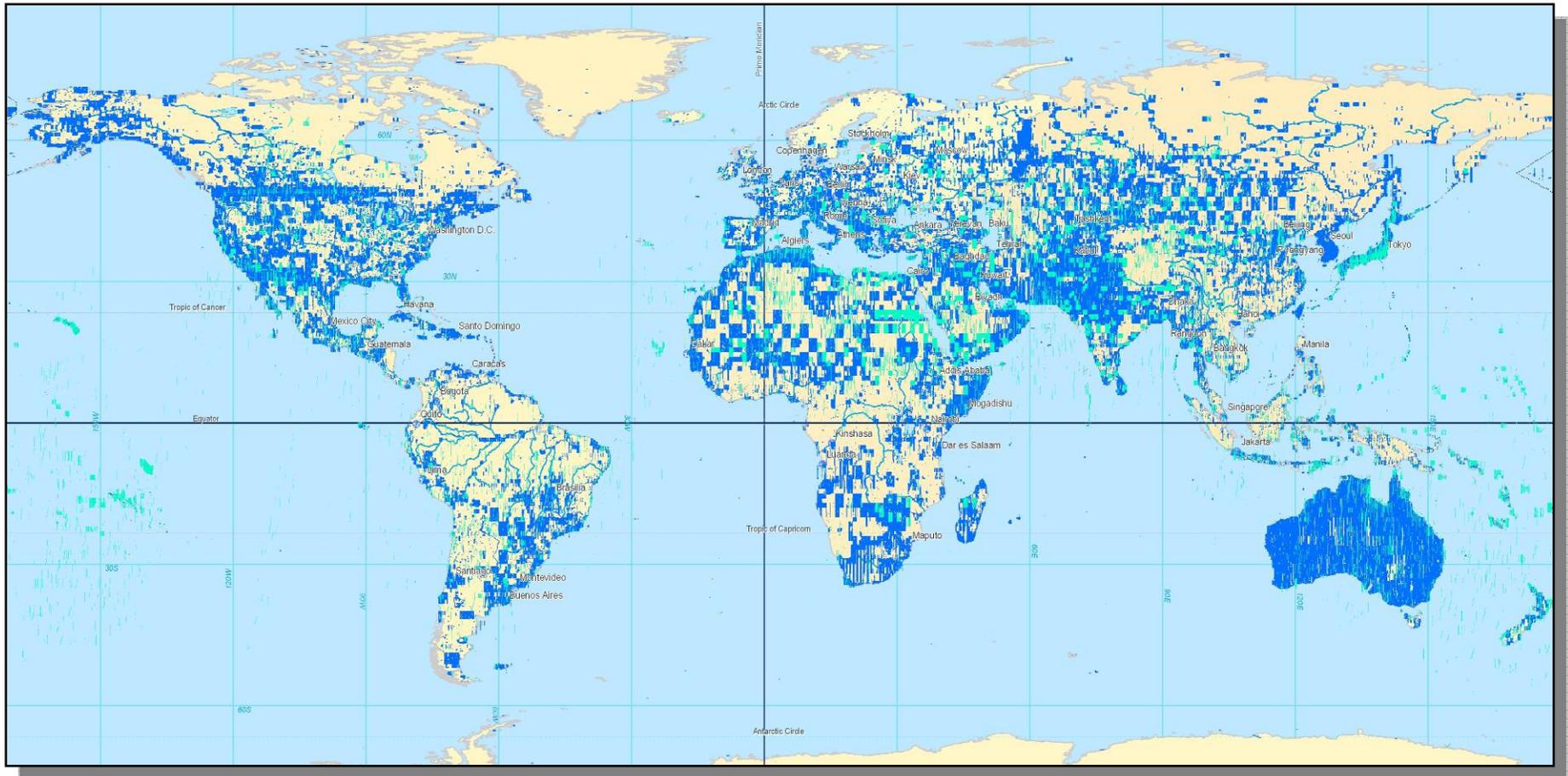
OrbView-3

- Launch
 - June 26, 2003
- Last image
 - March, 2007
- Imaging Sensors
 - 1m Pan or 4m MS imagery
 - Blue, Green, Red, NIR
 - 11-bit radiometry
 - 8 km swath at nadir
- Archive Products
 - Basic, Geo & Ortho



Last OV3 image

Satellite Imagery Archive



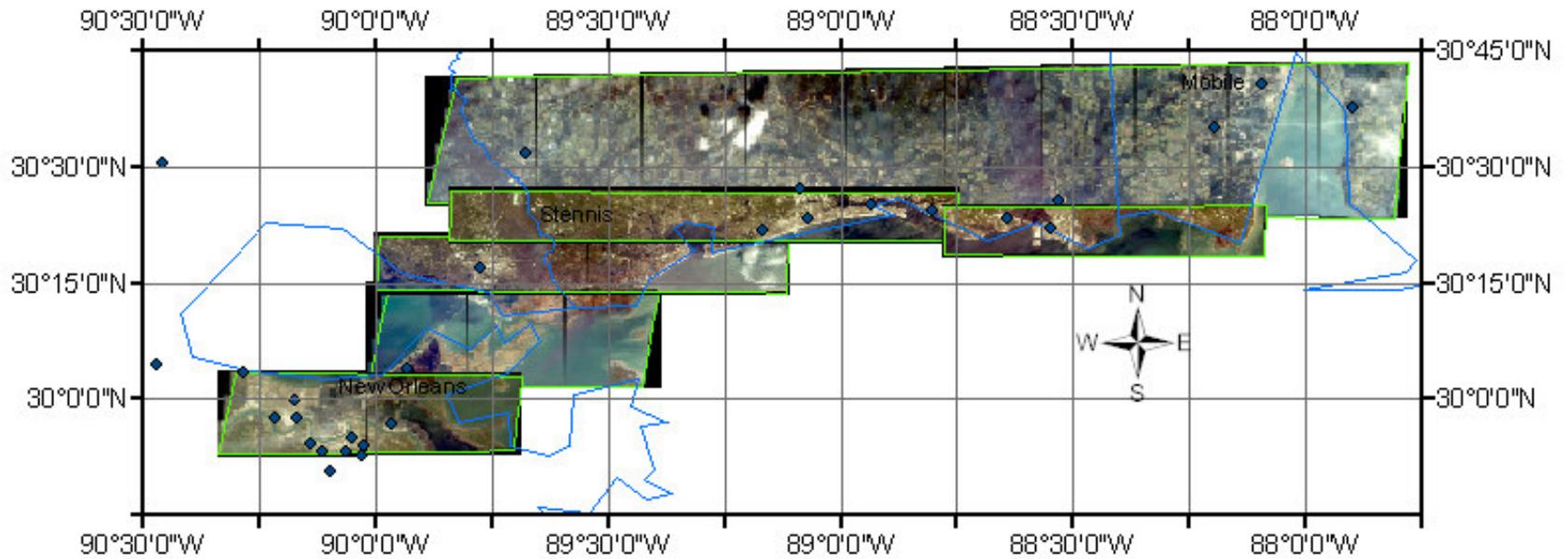
IKONOS and OrbView-3 archive contains over 300 million sq km of imagery as of March 2008

IKONOS

- Launch
 - September 24, 1999
- Orbit
 - 681 km, Sun-synchronous
 - 10:20 equatorial crossing
- Imaging Sensors
 - 82 cm Pan, 3.2 m MS
 - Blue, Green, Red, NIR
 - 11 km swath
 - 11-bit radiometry
- Collection
 - Agile pointing & scanning
 - Bidirectional scanning
 - Mono or Stereo
- Revisit
 - 3 day at 60° elevation
 - 1 day at 45° elevation



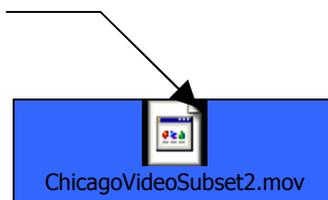
IKONOS Image Collections 2005.09.02



November 16, 2006

Colonel Sanders created with 67,000 one-foot square color tiles

Click for Movie



Mars
March 26 & 27
2003

JACIE 2008



Moon
December 22, 1999

IKONOS Metric Accuracy & Stability

Absolute Accuracy

- How close the points are to zero error.

Relative Accuracy

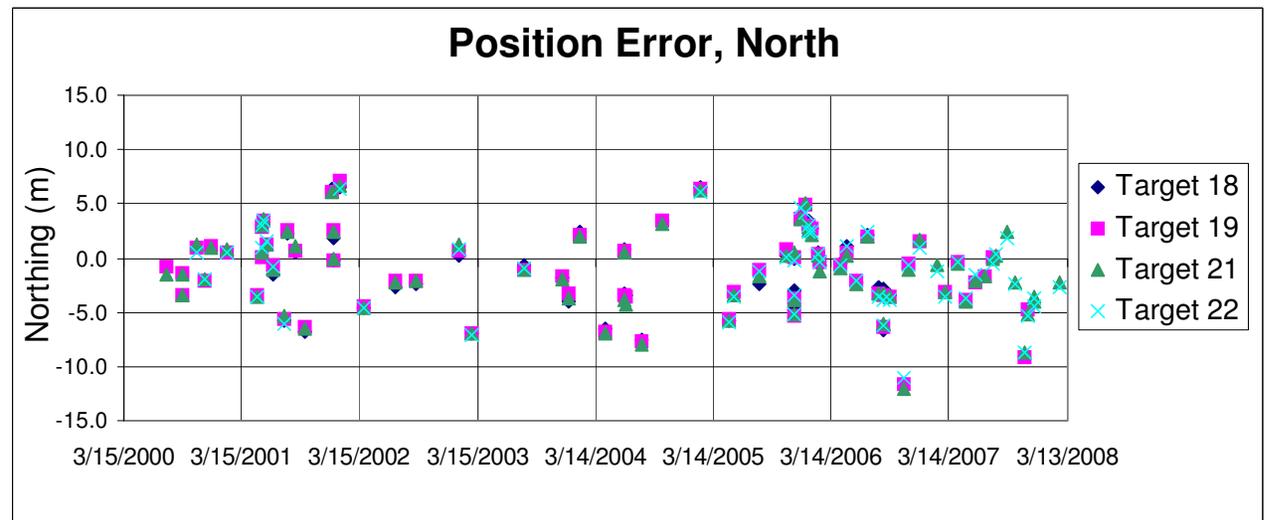
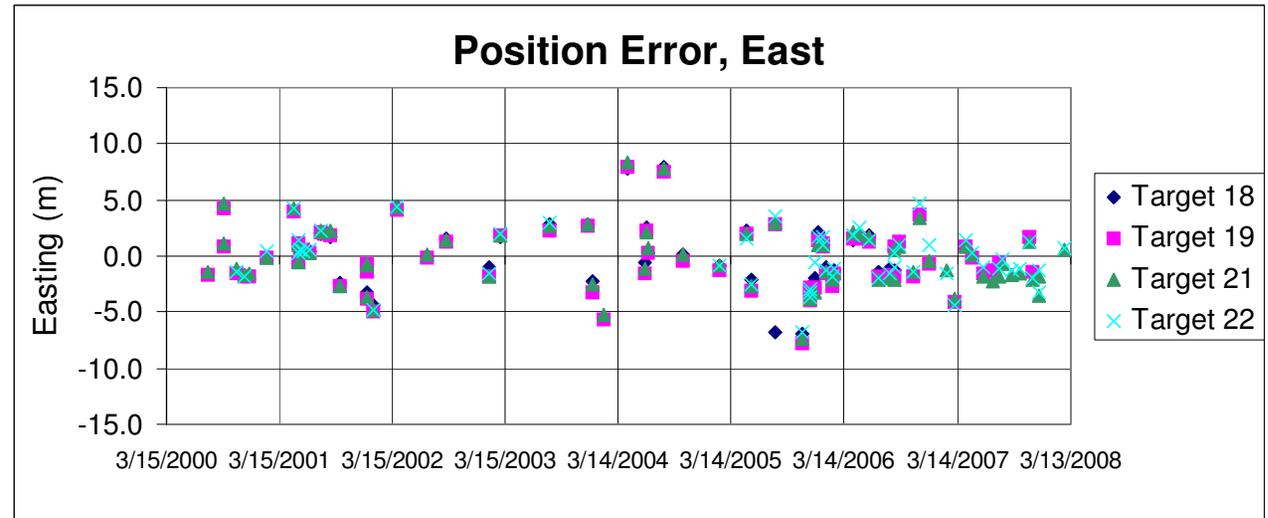
- How close the points on a given day are to each other.

Stability

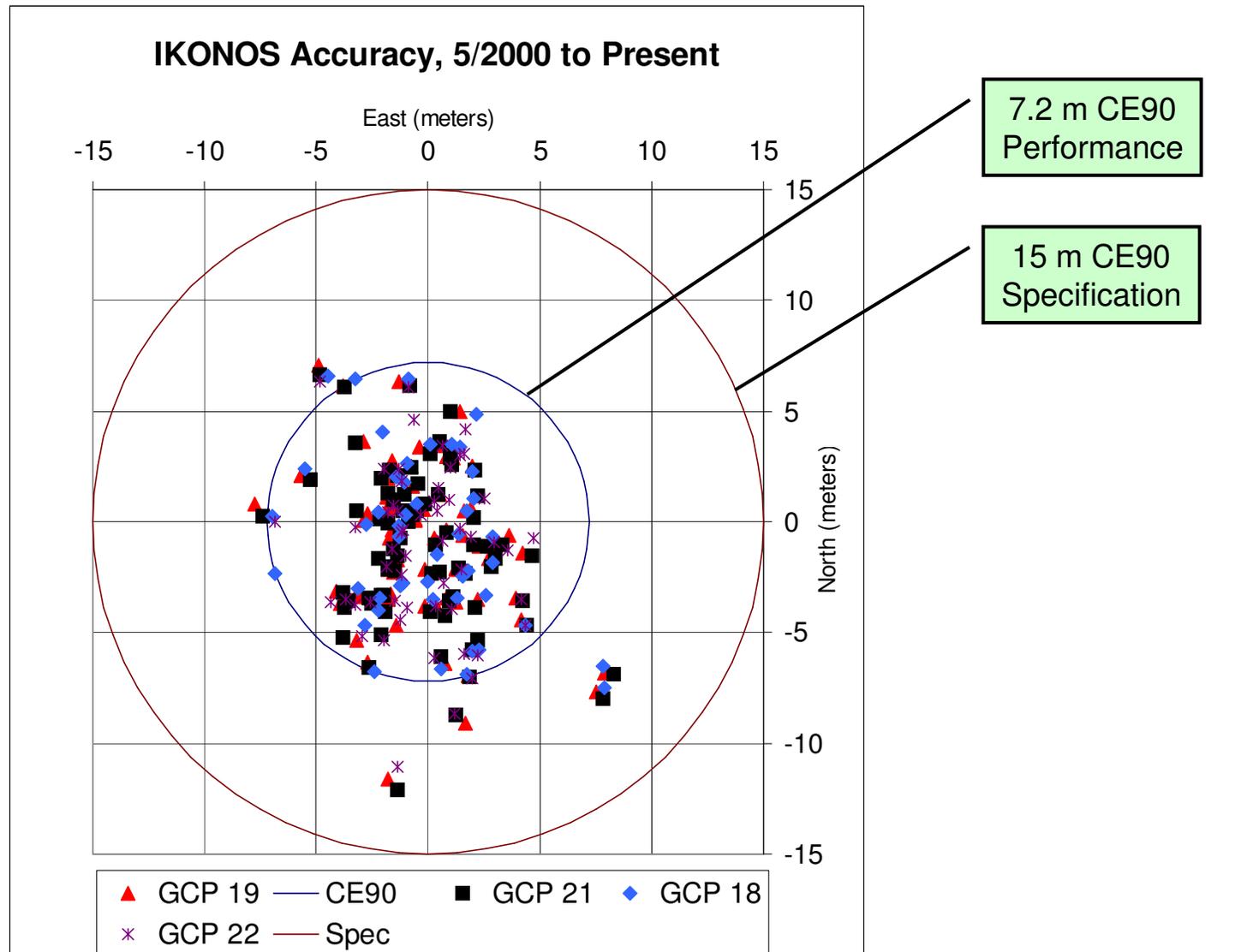
- Consistency from year to year.

Note

- All data processed with current calibrations.



Absolute Accuracy Since Initialization

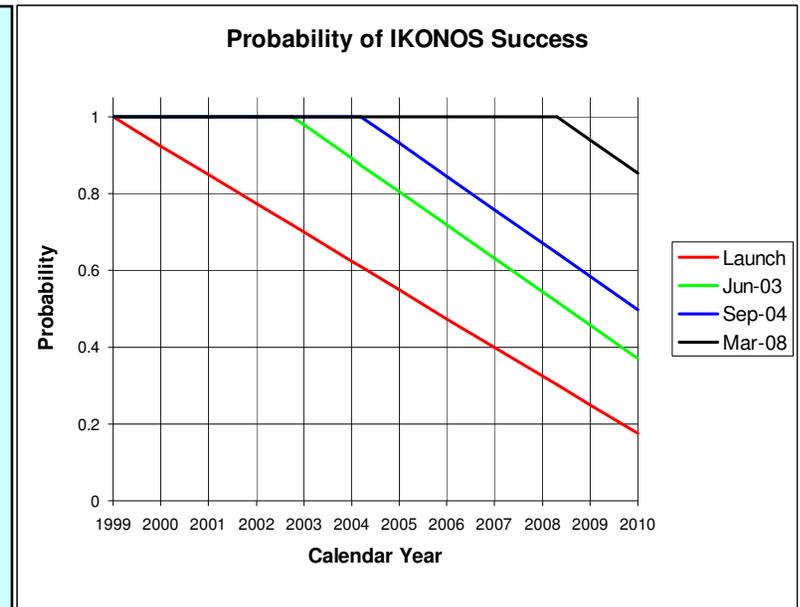


Metric Calibration Summary

Effectivity		Description
Collection Date	Production Date	
1999.09.24	2001.11.19	Interior Orientation (IO) ~ 150 ppm Scale
1999.09.24	2002.01.31	Exterior Orientation (XO) ~ 5 m Offset
1999.09.24	2005.01.17	IO & XO ~ 1 Pixel between arrays
2006.08.23	2006.08.23	Instrument Calibration 9 (IC9)
2005.11.22	2007.04.09	Interlock Adjustment ~ 6 m Offset
2007.04.17	2007.05.01	New Calibration 0 (NC0)

IKONOS Lifetime

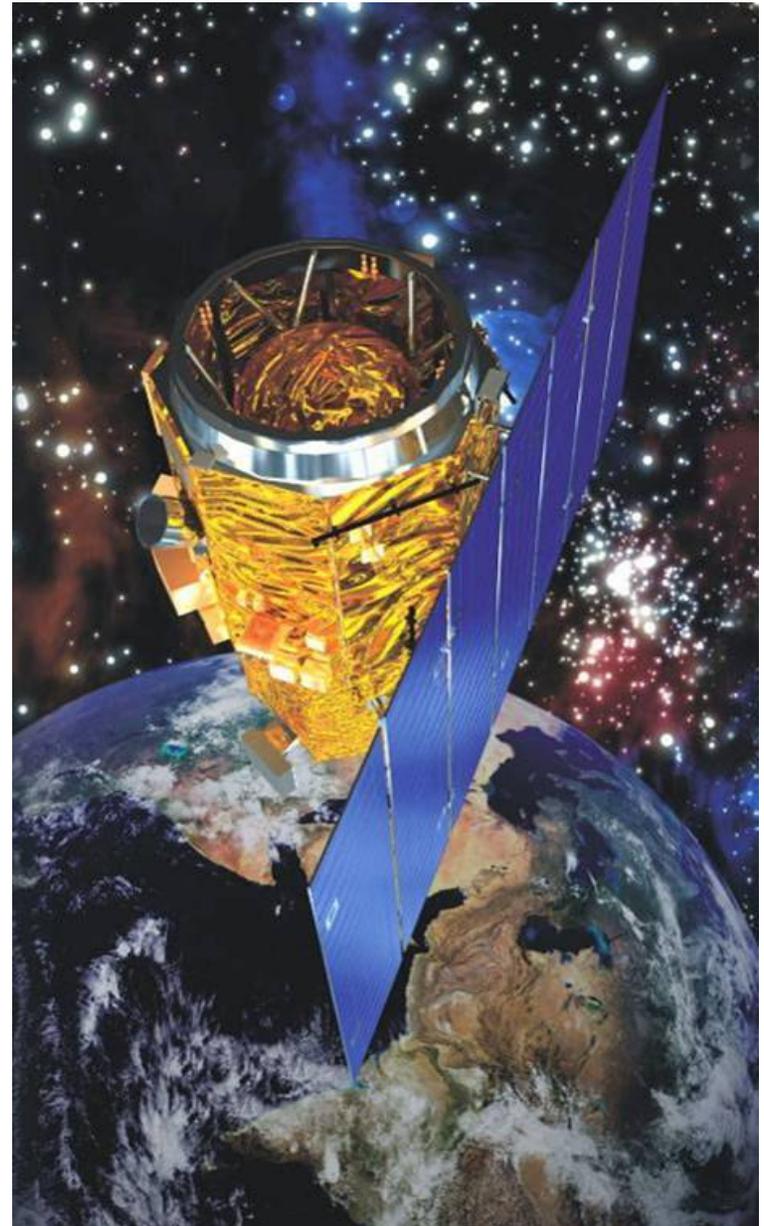
- IKONOS Status
 - More than 8 years fuel on board
 - Solar Cells, Batteries & Sensors are performing well within specification.
- Original lifetime estimate
 - 5 to 7 years
 - Limited by radiation damage.
- Currently
 - 8.5 years from 1999-09-24 launch
- Updated lifetime analysis
 - Performed by Lockheed
 - Concluded radiation is not limiting lifetime
 - \$20MM insurance secured for 2008



Notional lifetime graph. Probability of success decreases by a fixed amount each year. Barring wear-out components or consumable supplies, each successful day of operation moves the lifetime probability curve another day to the right.

GeoEye-1

- Launch
 - As soon as possible.
- Orbit
 - 680 km, Sun Synchronous
 - 10:30 am equatorial crossing
- Imaging Sensors
 - Pan 41cm at nadir
 - MSI 1.64 m,
Blue, Green, Red, & NIR bands
 - 15.2 km swath at nadir
 - 11 Bit dynamic range
- Collection
 - >700,000 km² per day
 - Mono or Stereo
 - < 3 day revisit
- Mission Life:
 - 7 years
 - Fuel >10 Years



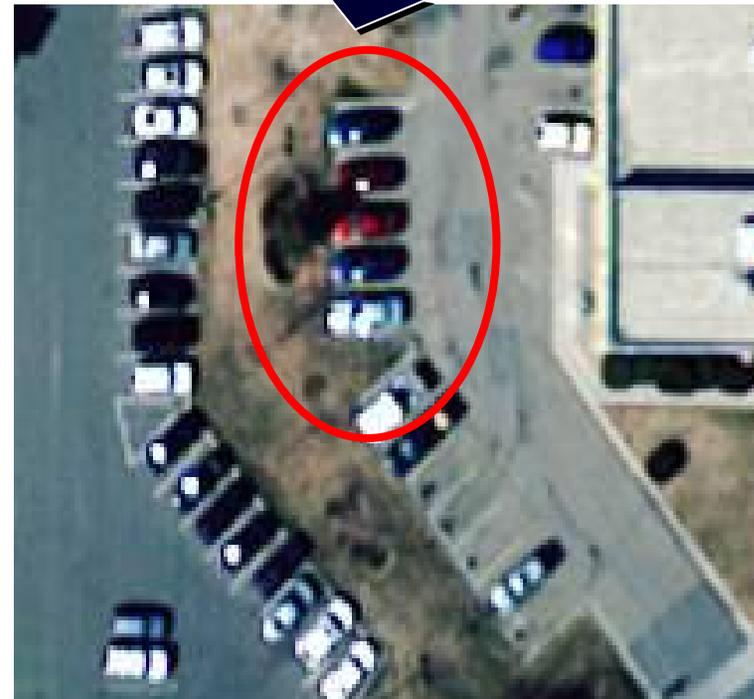
Improved Resolution

Nadir
PAN GSD = 0.8m
MS GSD = 3.2m



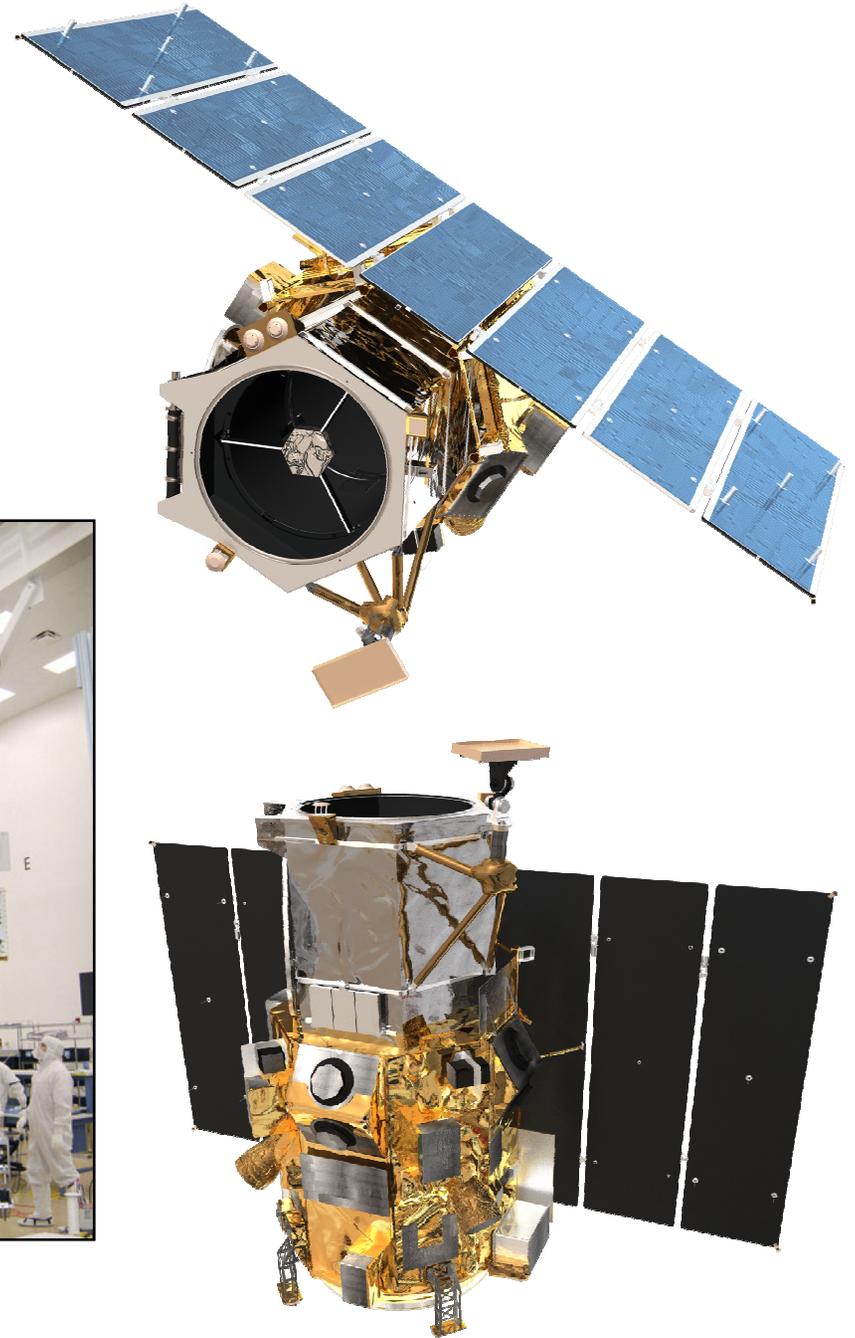
Typical Resolution at Current
Commercial Technology

Nadir
PAN GSD = 0.41m
MS GSD = 1.65m



GeoEye-1 Increased Resolution

- GeoEye-1 Status
 - EMI & Vibe tests complete.
 - Thermal-vac test in progress.
- GeoEye-1 Launch
 - Scheduled: 2008-08-22.
 - Shooting for an earlier ride.



GeoEye-2

- Launch
 - 2011 or 2012
- Orbit
 - Sun Synchronous
- Imaging Sensors
 - Pan, 25 cm at nadir
 - MSI, 1.0 m at nadir
 - 11 Bit dynamic range
- Mission Life:
 - 7 years
 - Fuel >10 Years
- Status:
 - Glass purchased for primary mirror
 - Mirror fabrication has begun
 - Long lead electronics purchased
 - Detailed design studies & regulatory review are in work.



Company Offerings

MJ Harden Services

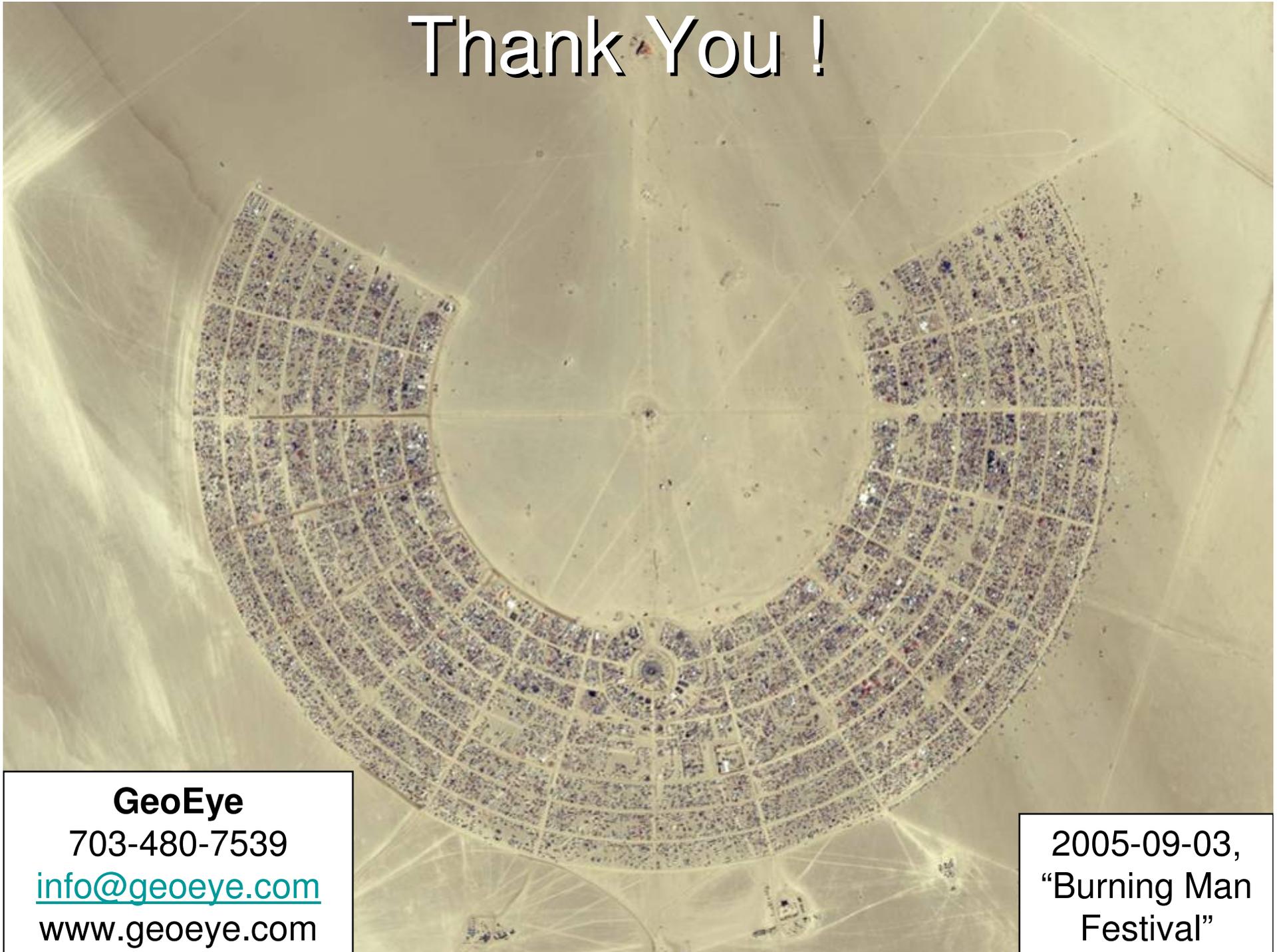


- Aerial Acquisition
 - Digital Imagery
 - LiDAR
- Planimetric and topographic mapping
- Digital orthophotography
- LiDAR data processing
- Remote sensing / image analysis
- GIS implementations



Panchromatic, Natural color, or Color Infrared imagery to 4 cm GSD with LiDAR elevation data in a single collection.

Thank You !



GeoEye

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2005-09-03,
"Burning Man
Festival"