

DigitalGlobe Incorporated

Civil Commercial Imagery Evaluation Workshop

Corporate and System Update

March 20, 2007





Overview

- DigitalGlobe Today
- Recent News / Updates
- DigitalGlobe Combined Product Offerings
- DG Content Library
- QuickBird Satellite / Product Specifications
- Applications
- WorldView Satellite Program Summary



DigitalGlobe - Today

DigitalGlobe is the world leader in geospatial content, products and related services for defense and intelligence, civil govt., and commercial communities

- **Leader in geospatial content with world's highest resolution satellite, a growing constellation of satellites, and new aerial imagery capabilities**
 - Building 2 next-generation WorldView satellites
 - WorldView-1 to be operational mid-2007, WorldView-2 early 2009
 - New capabilities recently added to include archived and new collection aerial imagery
- **Accurate, complete content libraries**
 - Imagery archive of over 200 million sq km at 60 cm (PAN) resolution or better
- **Focused on providing targeted content and products** to our customers that are complete and easy to access and integrate



Recent News: DigitalGlobe Acquires GlobeXplorer

- DigitalGlobe announced acquisition of GlobeXplorer on January 8, 2007
- GlobeXplorer is a privately-held company
 - Leading geographic data integration and publishing company
 - Offers access to the one of the world's largest commercial library of satellite images, aerial photos, software/web-based tools, geographic maps and real property information
 - Based in Walnut Creek, CA ; Employs approximately 71 people
- New Acquisition Combines:
 - DigitalGlobe's industry-leading high-resolution, high-capacity satellite constellation and archive
 - GlobeXplorer's effective Web-based search and delivery application tools
 - Creates the commercial remote sensing industry's first end-to-end solution for acquiring, integrating and distributing range of high-quality digital Earth imagery and data



Rationale

- **Combination of DigitalGlobe and GlobeXplorer defines new level of leadership in the industry:**
 - A strong expertise in the field of Earth imagery
 - A group of seasoned engineers and personnel combining geospatial and IT knowledge
- **Customers:**
 - Provides access to on- and off-line services to full range of customers from domestic and international Defense and Intelligence, State and Local Government and enterprise, supporting trained, professional users as well as non-GIS professionals and end users
- **Content:**
 - Instant Internet access to the world's largest aerial, satellite and map image databases
 - Customizable subscription/bundled imagery and software tool packages
 - Proven capability of fast integration in enterprise systems
- **Technology:**
 - Extends our technology and product roadmap, specifically with very strong Web 2.0 functionality
 - Brings comprehensive suite of cutting edge Web-based earth imagery products and tools designed for customers who need local professional imagery:
 - ImageAtlas
 - ImageBuilder
 - ImageConnect

DG New Combined Product Offerings

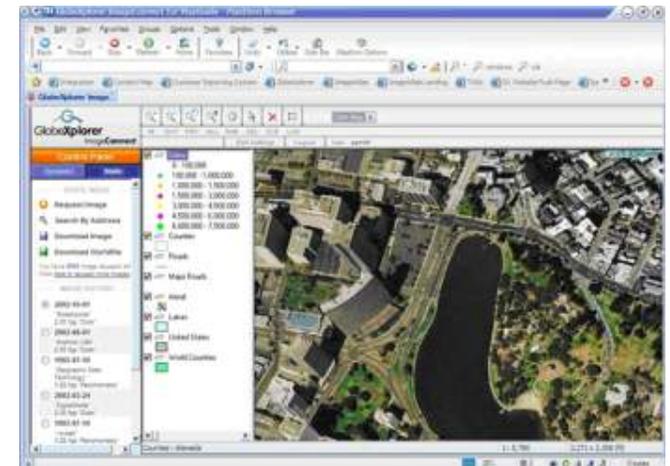
Off-Line Geospatial Imagery

- **High resolution geospatial imagery available in a variety of file formats and delivery options**
 - 60 cm color satellite imagery of any location on earth
 - Available from 2,000,000+ km2 archive or tasked from satellite
 - 15-60 cm (6 in – 2 ft) color aerial imagery of select American and European Markets
 - Complete, highly accurate USA base-map at 1 m resolution or better (major markets 60cm or better)



Desktop Software

- **ImageConnect™**: Dynamic image viewing plug-ins for major mapping software applications that allow users to tap vast image library on an as-needed basis (subscription model).
- **PhotoMapper™**: Simple yet powerful aerial photography viewing and annotating software that provides instant shared access to complete seamless imagery projects of any size.



DG Combined Product Offerings (Cont'd)

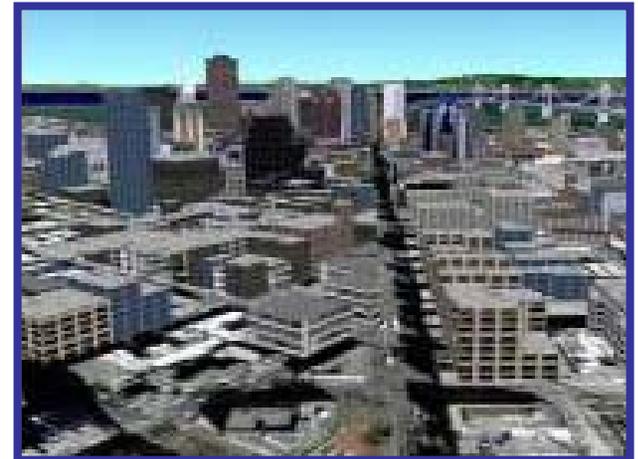
Web Services & Applications

ImageBuilder™: Comprehensive developer toolkits and API's that let users build custom aerial, satellite, and map viewing capabilities into any internet-aware device or application.



ImageAtlas™: Flexible image/map viewing e-commerce site. Users can customize look and feel, link it to address searches, property listings, etc. Complete with a secure shopping cart.

ImageAtlas 3D™: Powerful desktop application that provides full 3D streaming of imagery, maps, and more. Generate movies, prints, downloads, and custom map data.



CitySphere Overview

- **CitySphere™**
 - Current off-the-shelf orthomosaics of high resolution QuickBird imagery for over 200 pre-selected cities worldwide



**CitySphere
Madrid**

What is CitySphere™ ?

- Pre-selected 200 Worldwide Cities
 - ~50 US and ~150 International
- GIS-ready imagery
 - High Resolution QuickBird data – 60 cm (2 foot) resolution
 - Accurate – 1:4800 orthomosaics
- Two Product Options
 - **Basemap GIS** - Color (RGB), 8 bit
 - **Basemap Advanced** – 4 band (NRGB), 16 bit
- Repeatable, Consistent Coverage
 - Each city will be updated every year
 - Imagery no older than 24 months

Available CitySphere™ Cities

International

City Name	Country
Amman	Jordan
Athens	Greece
Baghdad	Iraq
Barcelona	Spain
Basra	Iraq
Belgrade	Serbia and Montenegro
Belo Horizonte	Brazil
Brasilia	Brazil
Brisbane	Australia
Canberra	Australia
Cape Town	South Africa
Casablanca	Morocco
Durban	South Africa
Fortaleza	Brazil
Guadalajara	Mexico
Istanbul	Turkey
Karachi	Pakistan
Lima	Peru
Lisbon	Portugal
Madrid	Spain
Naples	Italy
Perth	Australia
Reval	Estonia
Rio de Janeiro	Brazil
Rome	Italy
San Salvador	El Salvador
Santiago	Chile
Santo Domingo	Dominican Republic
Skopje	Macedonia
Tunis	Tunisia
Windhoek	Nambia

North America

City Name	Country
Aguas Calientes	Mexico
Albuquerque	USA
Anchorage	USA
Atlanta	USA
Austin	USA
Boise	USA
Charlotte	USA
Colorado Springs	USA
Fairbanks	USA
Guadalajara	Mexico
Halifax	Canada
Helena	USA
Honolulu	USA
Las Vegas	USA
Los Angeles	USA
Oakland	USA
Oklahoma City	USA
Orlando	USA
Portland	USA
Quebec	Canada
Regina	Canada
San Antonio	USA
San Francisco	USA
San Jose, California	USA
Saskatoon	Canada
Spokane	USA
Tucson	USA
Vancouver	Canada
Winnipeg	Canada

- 200 cities currently available
- New cities will be released every month
- See www.digitalglobe.com for updates

CitySphere Product Example



Downtown San Francisco

DG Combined Content Library

- **Global archive of high-resolution imagery, covering:**

- Combined libraries of DigitalGlobe, GlobeXplorer, and AirPhotoUSA create the world's largest library of high resolution imagery
- 220,000,000 km² of imagery that is less than 2 years old
- Coverage of 94% of the world's 200 largest cities
- Coverage of key features, including
 - Over 2,000 airports worldwide
 - Approximately 1,000,000 km² of major oil and gas basins
 - 75% of the world's crude oil refineries



Surabaya, Indonesia

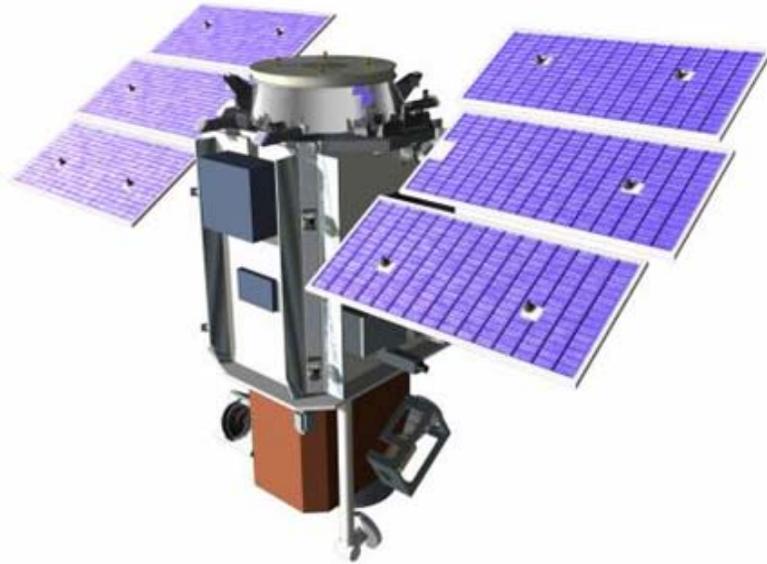
- **US Coverage**

- Complete, highly accurate USA base-map at 1 m resolution or better
- Coverage of 187 markets at 60 cm (2 ft) resolution or better
- Recently (Q4) captured over 100,000 km² of Northeast imagery at 30 cm (1 ft) resolution

- **International Coverage**

- 90% of Europe's 50 largest cities
- 86% of Asia's 50 largest cities
- 52% of South America's 50 largest cities
- 87% of the Middle East's 30 largest cities
- 87% of Africa's 30 largest cities

DigitalGlobe currently operates
the world's highest resolution
commercial imaging satellite



QuickBird !

QuickBird Specifications

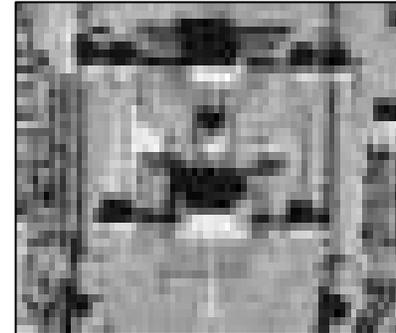
- Launched Oct. 2001; Fully Operational Jan. 2002
- 60cm (2-foot) panchromatic resolution (at nadir)
450-900 nm (grayscale)
- 2.44 meter multispectral resolution (at nadir)
 - 450-520 nm (blue)
 - 520-600 nm (green)
 - 630-690 nm (red)
 - 760-900 nm (near IR)
- 60cm (2-foot) digital color (natural or near-IR)
 - Image Detail Comparable to 1- 1 ½ foot film
- Collection capacity: 15 orbits/day; ~57 scenes/orbit;
= ~27 million mi² (70 million km²) per year
- Large 10.3 x 10.3 mi (16.5 x 16.5 km) scene/footprint
- 11 bit dynamic range



QuickBird Imagery Types

- **Panchromatic**

- 60 Centimeter Resolution
- 11-bit Dynamic Range
- 450-900 nm Spectral Range



**Forbidden City,
Beijing, China**

- **Multispectral**

- 2.4 Meter Resolution
- 11-bit Dynamic Range
- 4 Spectral Bands
 - Blue: 450-520 nm
 - Green: 520-600 nm
 - Red: 630-690 nm
 - Near Infrared: 760-900 nm



Port-au-Prince, Haiti

- **Pan-Sharpened**

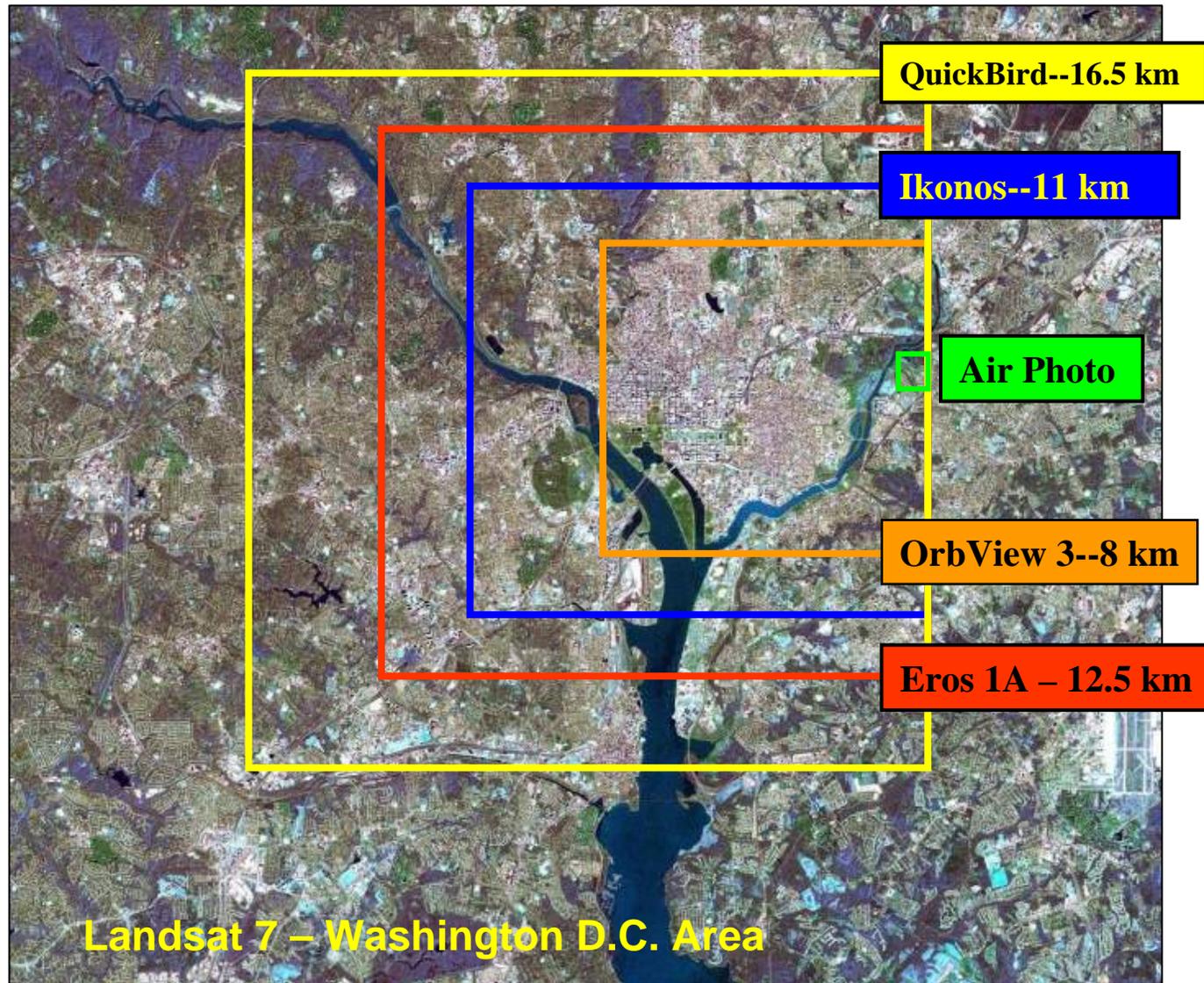
- 11-bit or 8-bit dynamic range
- Natural Color (3 Bands)
- Color Infrared (3 Bands)
- 4 Band Pan-Sharpened



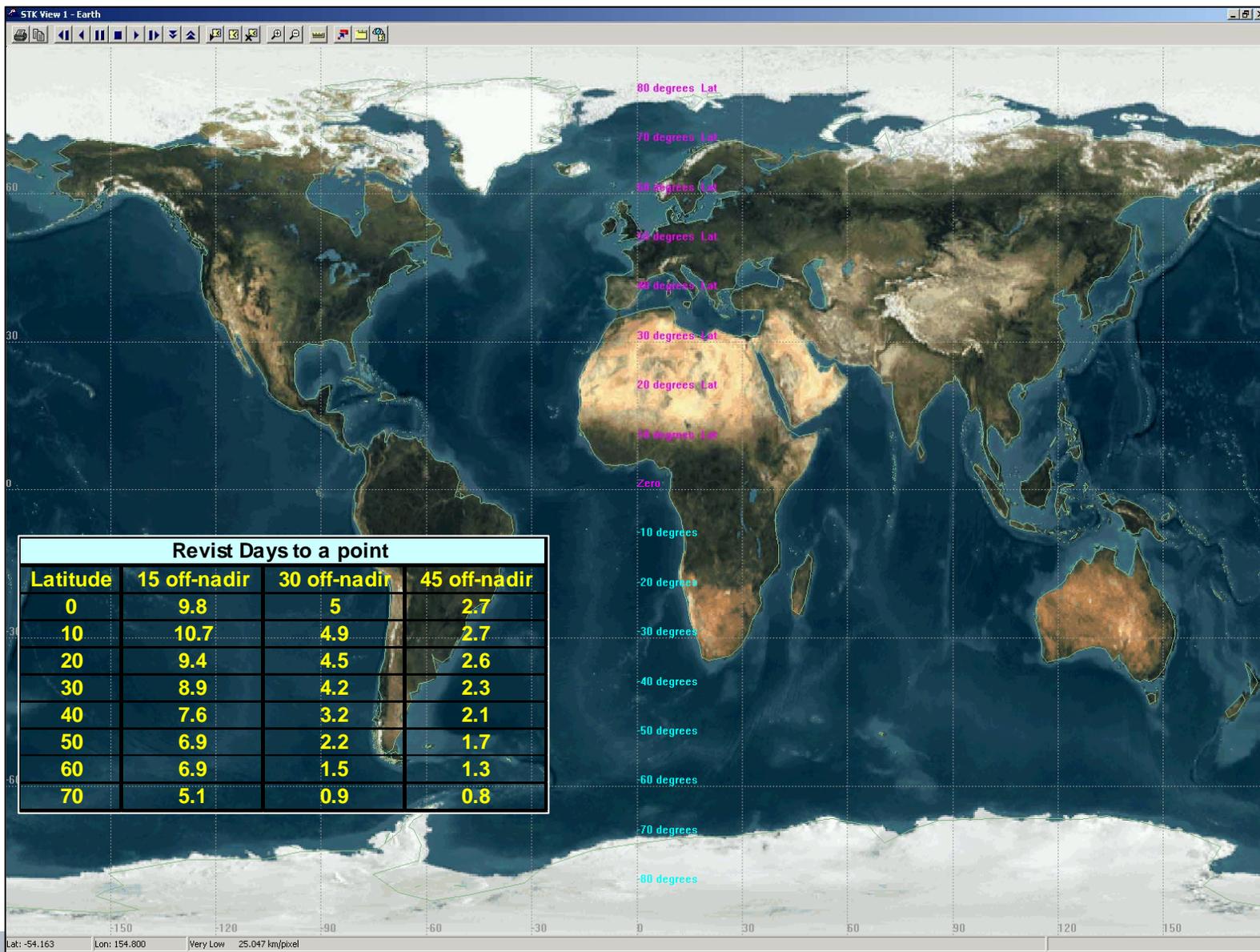
Abu Dhabi, UAE

QB Large Image Footprint

- More targets of interest per scene
- Builds Image Library faster
- Easier Image Mosaicking
- Fewer GCPs
- Faster large area collection



QuickBird Satellite Revisit Frequency



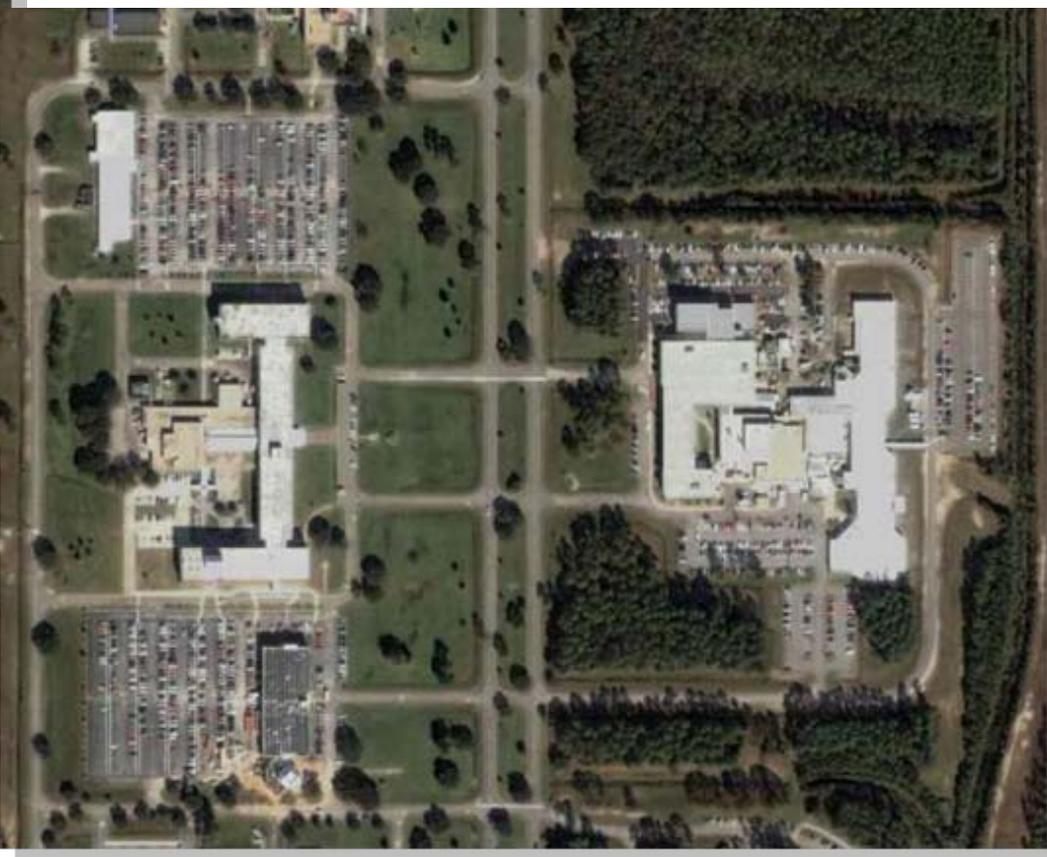


Stennis Space Center, MS



2-foot Resolution Natural Color
QuickBird Imagery
1:20,000

2-foot Resolution Natural Color
QuickBird Imagery
1:2,000





Aftermath of Hurricane Katrina: New Orleans, LA September 3, 2005



**A Plea for Help: Downtown
New Orleans**

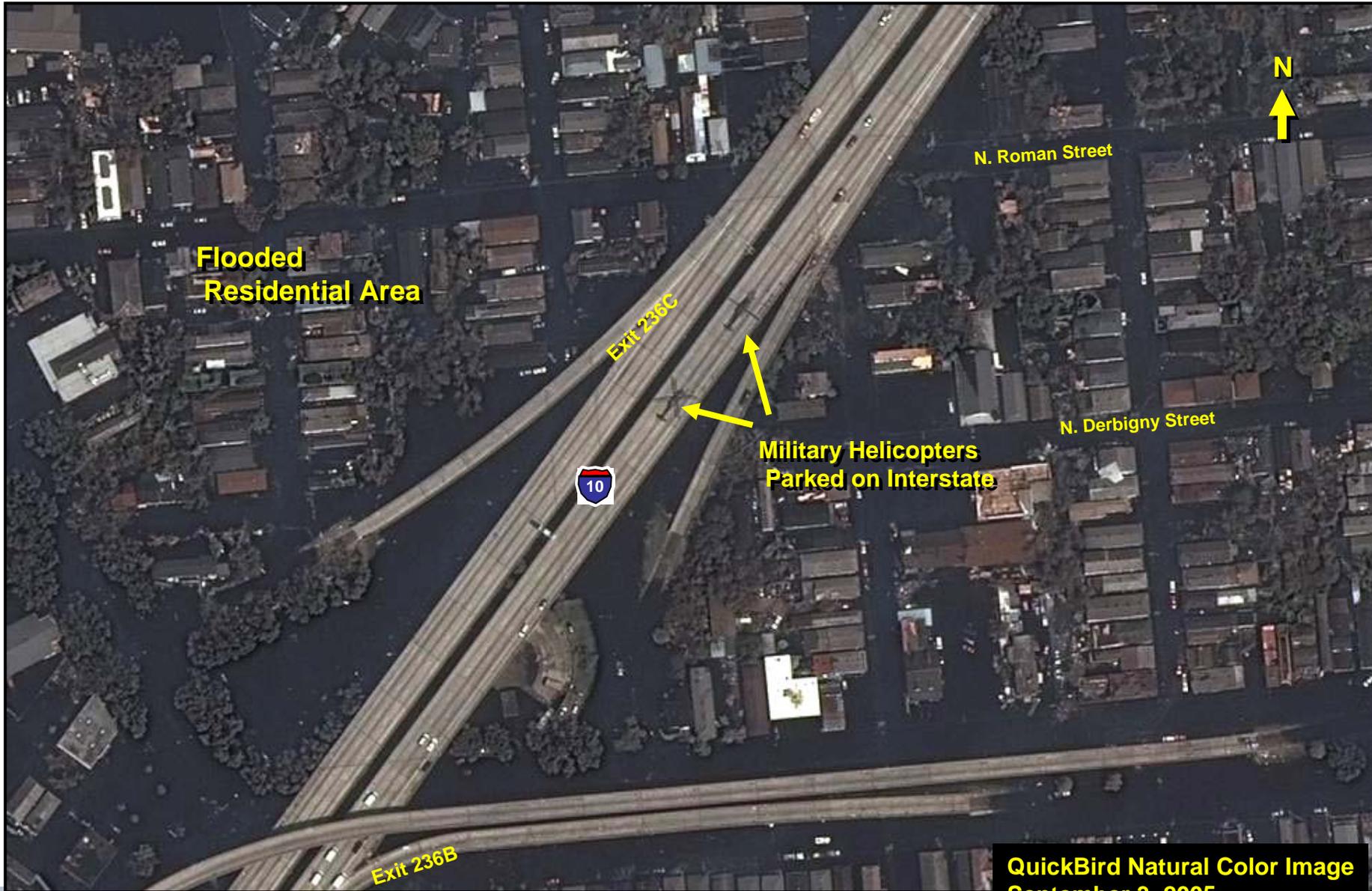


Louisiana Superdome



**Metairie, LA: Rescue
Staging Base at Zephyr Field**

Rescue Operations Underway



QuickBird Natural Color Image
September 3, 2005

17th Street Canal: Levee Repairs



QuickBird Natural Color Image
September 3, 2005



DigitalGlobe Imagery & Information Content: Suitable for Many Civil Govt. Applications

- **Base Mapping**
 - **For virtually ALL applications, rapid response and long term planning**
- **Environmental Assessment**
 - **Landcover, Wetlands, Land Classification and Management, and Sensitive Areas**
- **Disaster and Emergency Response, Planning & Mitigation**
- **Water and Waste Water Management**
- **Watershed Master Planning and Management**
- **DOQQ Updating**
- **Environmental Monitoring**
- **Tax Assessment**
- **Parcel Mapping**
- **Transportation (Corridor Planning and Mapping, etc.)**
- **Natural Resource (Forestry, Agriculture, Mining, etc.)**



A View Into DigitalGlobe's Next Generation System

- Better Resolution
- Better Collection Capacity
- Better Revisit

Teaming with:

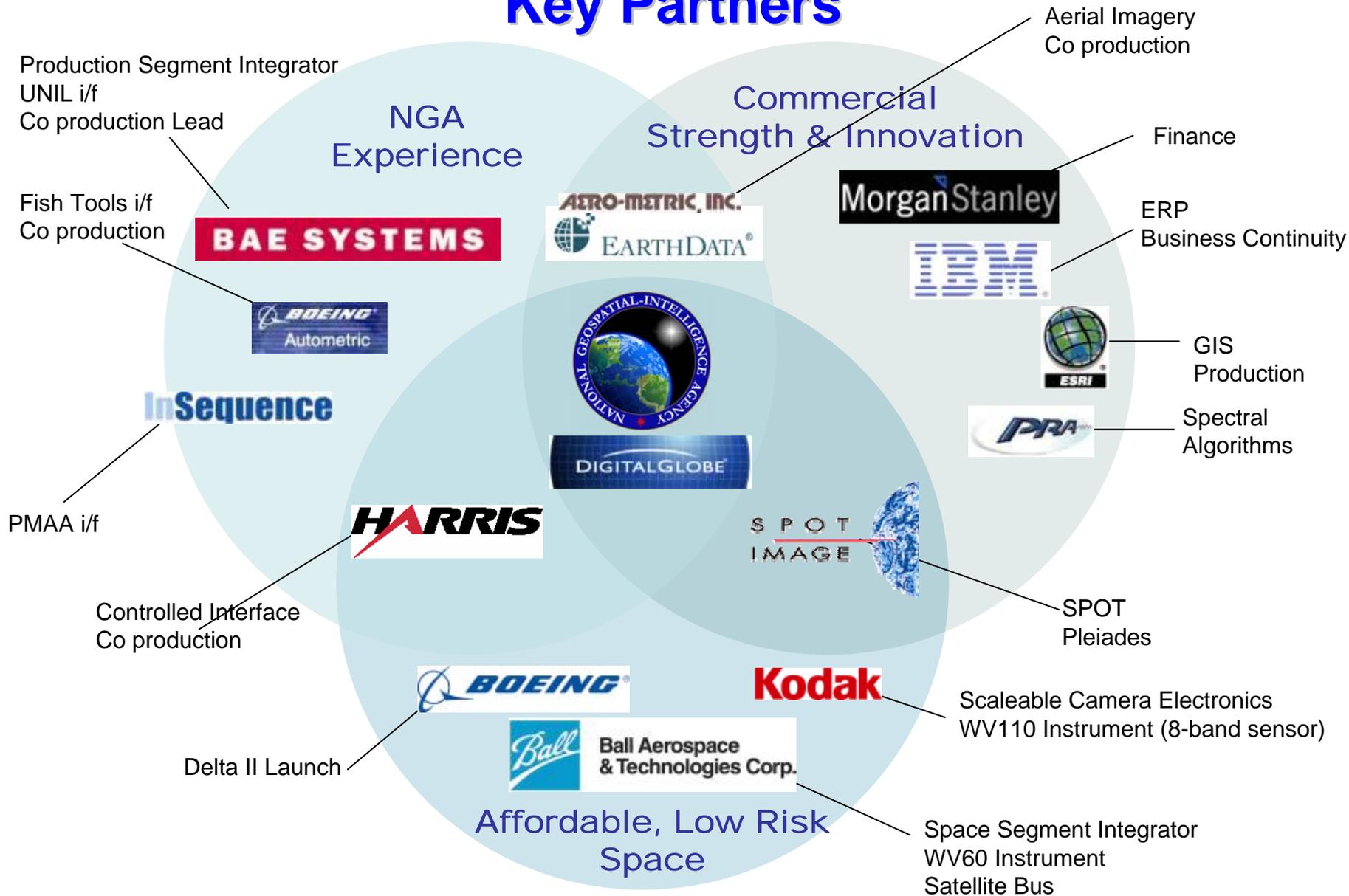
- BAE SYSTEMS
- AERO-METRIC
- Ball Aerospace
- Boeing
- EarthData
- ESRI
- Harris
- IBM
- InSequence
- Kodak
- SPOT

DIGITALGLOBE
CLEARLY THE BEST

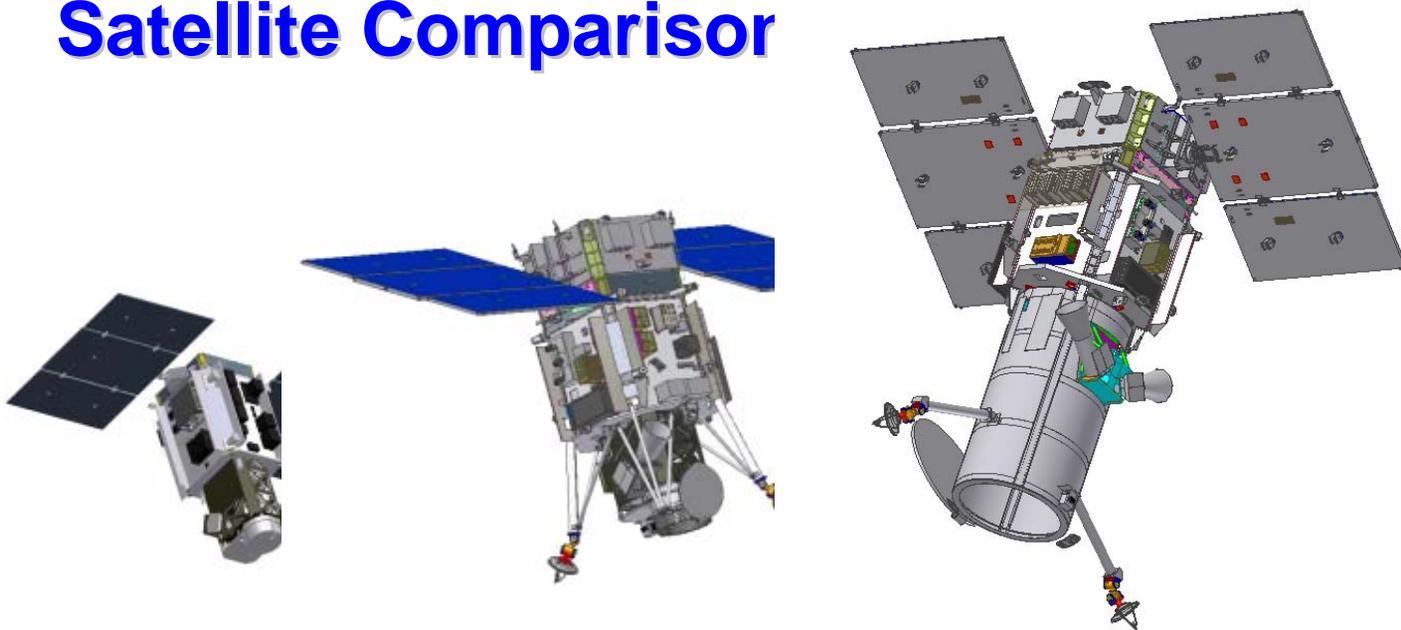
WorldView

DigitalGlobe's Next Generation Satellite Systems

Key Partners



Satellite Comparisor



QuickBird

WorldView 1

WorldView 2

Operational Altitude	450 km	450 km	770 km
Weight Class	2000 lbs	5700 lbs	5700 lbs
Pan / MS GSD (nadir)	0.6 / 2.4 m	0.5 / 2.0 m	0.5 / 2.0 m
Standalone CE90 (avg / max)	13 m / 23 m	7 m / 9 m	11 m / 14 m
Avg revisit at 1m resolution (40 deg latitude target)	2.5 days	1.7 days	1 day
Swath width	16.5 km	16 km	16 km
Monoscopic area capacity	1 X	> 3.5 X	
Single-Pass Mono Area Coverage (scenes)	1 x 10 (< 30 deg off nadir)	4 x 4 (< 40 deg off nadir) 1 x 10 (< 40 deg off nadir)	
Single-Pass Stereo Area Coverage (scenes)	1 x 1 (< 10 deg off nadir)	2 x 2 (< 30 deg off nadir) 1 x 10 (< 30 deg off nadir)	
Attitude Control	Reaction Wheels	Control Moment Gyros	
Onboard Storage	128 Gbits	1600 Gbits	
Wideband Link Rate	320 Mbps	800 Mbps	



What Do WorldView (WV) Satellite Enhancements Mean?

- **Accuracy**
 - Standalone max CE90 roughly twice as good as QuickBird
 - Accuracy Transfer improves standalone accuracy significantly (demonstrated better than 6 meter CE90 in testing with QuickBird; WorldView will be better given higher quality gyros)
- **Revisit**
 - Daily revisit (WV2) at 1 meter resolution or better
 - Much better chance of collection in high cloud regions
- **Area collection capacity + storage + downlink data rate**
 - Over 3.5x the total capacity of QuickBird, so faster collection
- **Agility (10x QuickBird) + altitude (1.7x QuickBird)**
 - MUCH greater local collection capacity
 - MUCH greater capacity to collect competing orders within the same region
 - MUCH faster collection of orders in high competition areas

WorldView Program Summary

- **WorldView will offer dramatic improvements over current commercial satellite capability in:**
 - Timeliness
 - Capacity
 - Agility
 - Accuracy
 - Multisourcing
 - Product Diversity
 - Integration with multiple systems
 - Cost-effectiveness: a better product for a dramatically lower price
- **The program is on schedule to support launches by:**
 - WorldView-60 full operational capacity (FOC) by 10/06
 - WorldView-110 FOC by 2009



For Additional Information:


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