



USDA Coordination Meeting

Glenn R. Bethel

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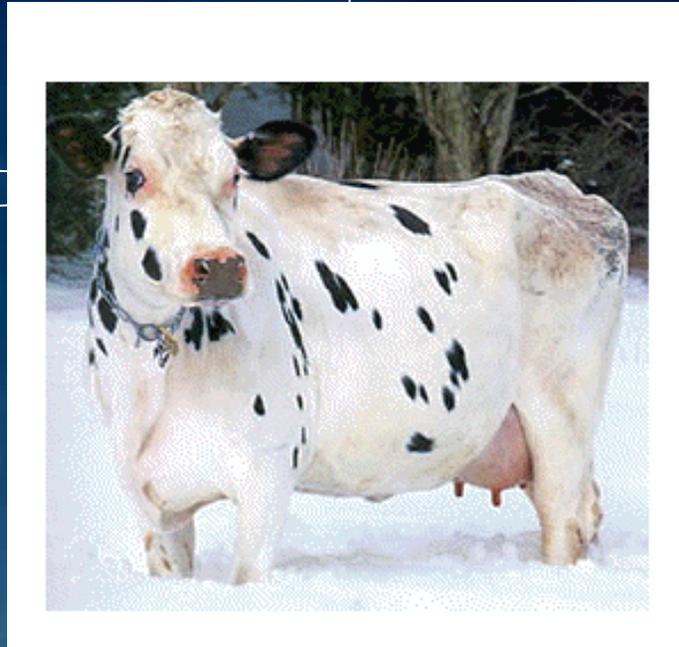
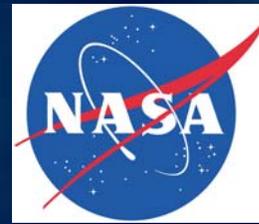
Requirement Wanted!

- Requirements
 - Short Term
 - Long Term
 - Research

- Who is Asking?
 - NASA
 - NOAA
 - NSSA
 - NRO
 - NGA
 - IWGEO
 - USDA Homeland Security Staff



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R&
D

Assets &
R&D

Assets &
Long Term
Requirements

Commercial
Imagery

Assets



Commercial Remote Sensing Policy Civil Agency Implementation

Interagency Working Group
Inaugural Meeting

January 28, 2004

R.J. Thompson
Implementation Plan Working Group

Satellite



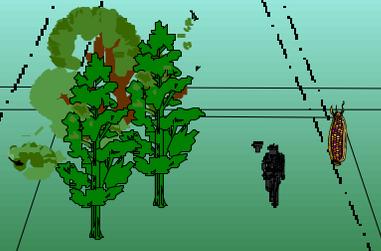
High Altitude Airborne



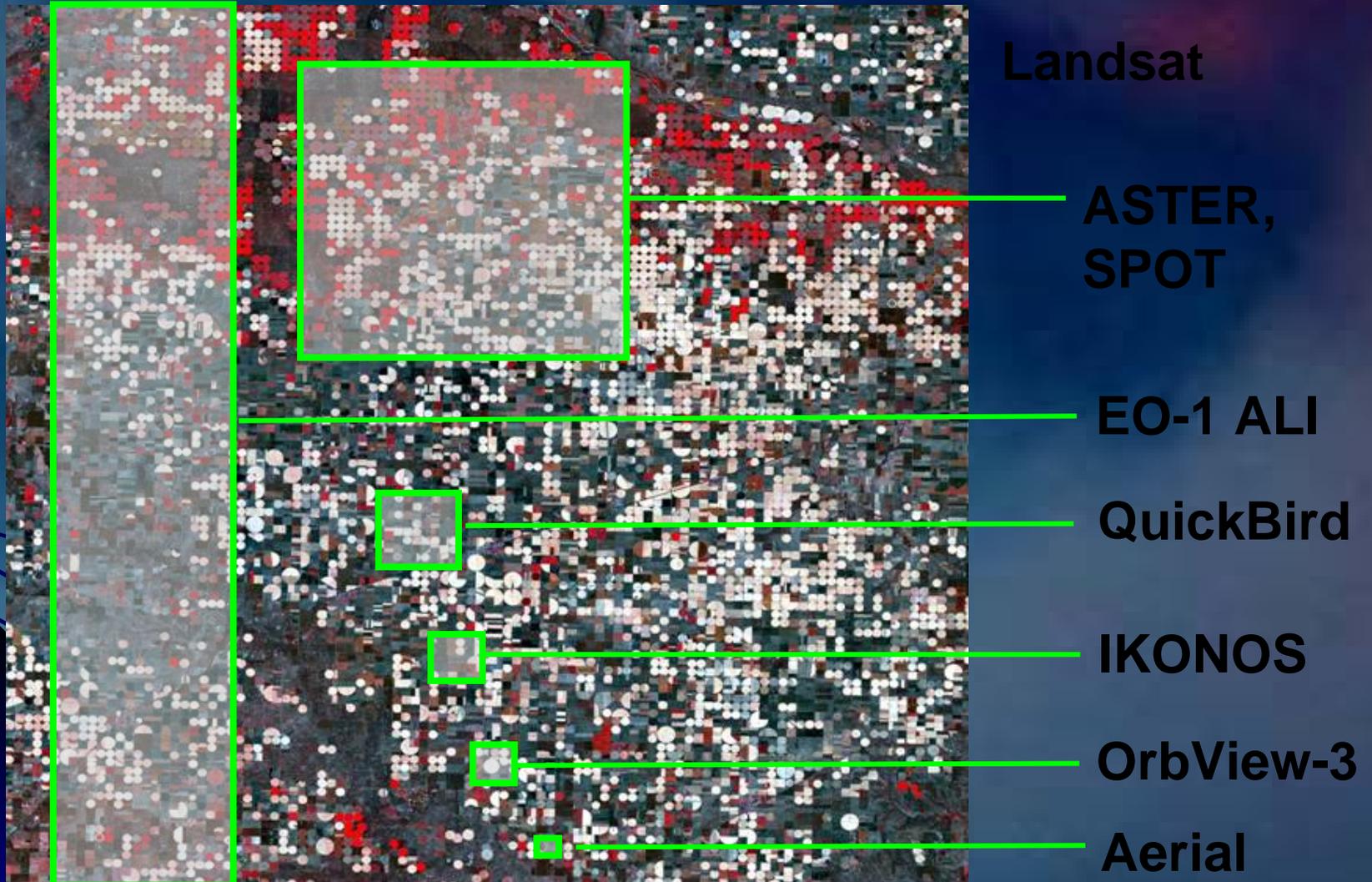
Low Altitude Airborne



Ground Information



Comparative Footprints



Commercial Remote Sensing Policy

- *Secretaries of Commerce and Interior and the Administrator of NASA, in consultation with other United States Government agencies, and with industry, as appropriate, shall:*
 - **Determine which civil needs *can be met by commercial (SPACE) remote sensing space capabilities***
 - **Communicate needs to the commercial space remote sensing industry**
 - **Competitively outsource.... to rely to the maximum extent possible on commercial remote sensing space capabilities...**
 - **Acquire and operate USG systems that collect data only when such data**
 - **Are not offered and will not be available by U.S. commercial systems**
 - **Require collection, production, and/or dissemination...due to unique scientific or technological considerations...**
 - **Coordinate with NIMA (NGA) procurement of ...data and products that are restricted to USG/USG-approved users....**
 - **Acquire ...products and services directly, through cooperative arrangements, or through NIMA (NGA)...**
- *The above was extracted from the CRSP Fact Sheet, accessible through crsp.usgs.gov*

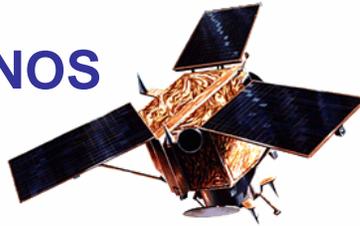
Commercial Remote Sensing Policy

Implementation Action # 8

- Determine *which civil needs can be met by commercial (SPACE) remote sensing space capabilities*
- The Secretaries of Commerce and the Interior and the Administrator of NASA, in consultation with United States Government agencies and with industry, as appropriate, shall submit a plan for establishing an effective long-term partnership between U.S. Civil agencies and U.S. industry that supports the goals of this policy. The plan will consider:
 - Civil agency requirements for *imagery and geospatial information that can be effectively provided* by commercial remote sensing space capabilities
 - *Allocation of resources* to meet civil requirements
 - Mechanisms for *interagency coordination*, including with NIMA
 - Feasibility of designating a *single agency as a civil procurement agent*

Commercial Satellite Systems

IKONOS



QuickBird



OrbView 3



Spin 2



EROS 1A



SPOT 4



Civil Agency Themes

- ◆ *Space-acquired vs aerial*
- ◆ *Data continuity*
- ◆ *Timeliness of product access*
- ◆ *Funding requirements*
- ◆ *One-stop shopping*
- ◆ *Data sharing for multiple uses and users*
- ◆ *Legal/liability issues associated with commercial data*
- ◆ *Relationship to government-funded systems*
- ◆ *Procurement mechanisms and associated licensing*

Required Civil Agency Functionality

- Interagency coordination
- Requirements assessment
- Budget for products and infrastructure
- Procurement processes/contracts
- Requirements allocation/prioritization
- Quality control processes (JACIE, etc.)
- Library services/data management
- Financial management
- Track, monitor and report performance metrics



Short-Term Product Requirements

- ◆ *Implement product and services requirements processes where agencies will:*
 - **Develop internal processes for requirements assessment**
 - **Collect and document requirements**
- ◆ *As lead agency, USGS will:*
 - **Provide guidance, call for product requirements**
 - **Aggregate and summarize requirements**
- ◆ *Translate civil agency needs to an “annual forecast” for future requirements*
- ◆ [..\..\..\USDA Remote coord 2 2004\Short-Term Regs Collection template.xls](#)

Long-term Observation Requirements

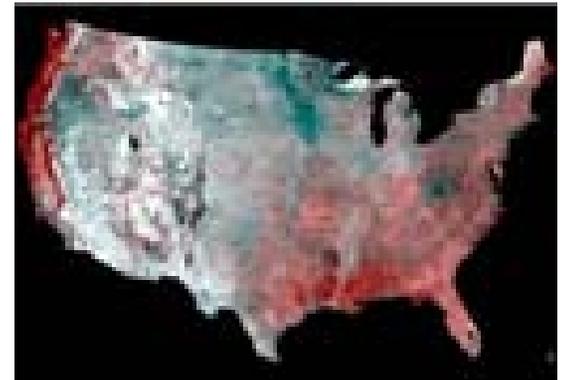
- ◆ *Implement requirements processes to assess need for future observations*
- ◆ *NOAA will collect and communicate requirements*
- ◆ *NSSA¹ Environmental Remote Sensing Architecture development in CY-04 (2020-2025)*
 - **Focuses on environmental parameter requirements**
 - **Includes potential commercial solutions**
- ◆ *Earth Observation Summit*
 - **Ten-year plan under development, 30 participating nations**

1. *National Security Space Architect*



Snapshot of America

- *One-time coverage*
- *Commercial high-resolution satellite data*
- *Multi-year acquisition*
- *Priority driven*
- *U.S.-wide, multi-year acquisition*
- *GIS-ready*
- *To support exploration and stimulation of practical applications*



Interagency Governance

- Focus on civil agency needs, with lead agency for coordination
- Primary agencies share execution activities
- Requires budget augmentation to increase product availability
- Leverages and augments existing agency infrastructure
- Consolidates performance metrics reporting
- Provides single interface with industry
- Utilize existing contract mechanisms where possible

Governance Model

- ◆ *Shared execution*
 - **Lead Agency**
 - **Senior Steering Committee**
 - **Interagency Working Group**
- ◆ *Recommended responsibilities*
 - **USGS-Lead Agency, coordination, procurement oversight, short-term requirements assessment, data management, etc.**
 - **NOAA-Long-term requirements assessment**
 - **USDA-Data management support, quality control processes**
 - **NIMA-Procurement support, infrastructure**

Coordination with NGA

- *Access to NGA contracts*
- *Lessons learned from ClearView and NextView*
- *Synergy/prioritization of requirements* 
- *Licensing issues*
- *Shared, duplicate and/or backup libraries*
- *Long-term public-private relationship development*
- *Liabilities and policies associated with use of products*

Key Issues

- *Budget planning and justification*
 - *Data Issues*
 - **Licensing**
 - **Tiered data access and control**
 - *Archive Preservation*
 - *Government-private sector long-term relationship framework*
- 

Actions Required

- ◆ *Requirements assessment processes-short-term and long-term*
- ◆ *Identify requirements for and budget to support expanded data acquisition*
- ◆ *Prioritization management practices*
- ◆ *schema for allocation of funding resources*
- ◆ *Governance processes/structures*
 - **Senior Steering Committee**
 - **Interagency Working Group**
- ◆ *New initiatives-i.e., Snapshot of America*
- ◆ *Transitioning requirements into systems*
- ◆ *Data procurement options and data*

USDA Representatives

Implementation Working Group

Glenn Bethel
USDA Remote Sensing Advisor

Brad Smith
Science Policy, Plan, Inventory, and Info (SPPI)

Paul Greenfield
National Remote Sensing Program Manager

George Rohaley
Resources Inventory Division

Senior Steering Committee

Rich Guldin
Science Policy, Plan, Inventory, and Info (SPPI)

Wayne Maresch
Director, Resources Inventory Division

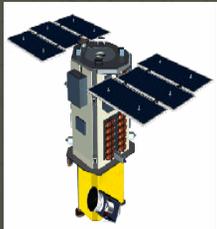
What's Next

- ◆ *Distribute final plan (civil agencies, industry, professional associations, etc.)*
- ◆ *Formulate civil Interagency Working Group*
- ◆ *Establish interagency Senior Steering Committee*
- ◆ *Establish interagency governance agreements/guidelines*
- ◆ *Establish civil agency/industry working relationship*

Participation Is Critical!



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Infrastructure Planning

CRSSP IWG Briefing

January 28, 2004

Jenn Willems

605.594.2505

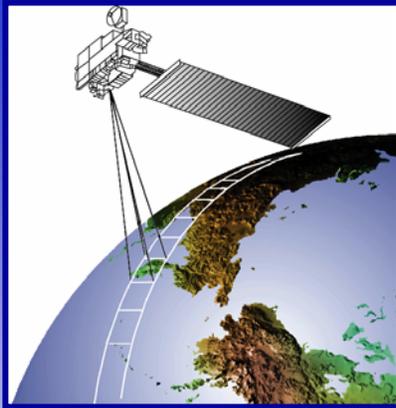
willems@usgs.gov

USGS Capabilities

- Home of:
 - National Satellite Land Remote Sensing Data Archive (NSLRSDA)
 - Land Processes Distributed Active Archive Center (LP DAAC)
 - World Data Center-A for Remotely Sensed Land Data
 - USGS Sales Data Base
 - United Nations Environment Programme / Global Resource Information Data Base (UNEP/GRID)
- Expertise
 - Customer services
 - Information systems development and technologies
 - Remote sensing and its applications
 - Software development and systems engineering
 - Data and archival management
 - Image processing

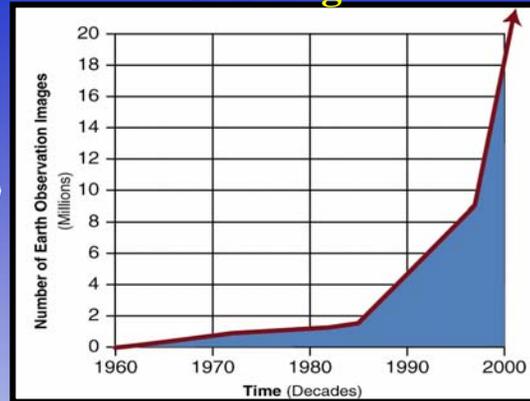
Land Remote Sensing from Space: Acquisition to Applications

Earth Observation Satellites



- Declassified Systems
- Landsat 1-5
- NOAA - POES
- Shuttle Radar
- Landsat 7 (1999)
- NASA-EOS (1999)
- High Resolution Systems

USGS National Archive Challenge



- Preserve
- Provide Access
- Process
- Reproduce
- Distribute
- Hold in Trust

Data Applications



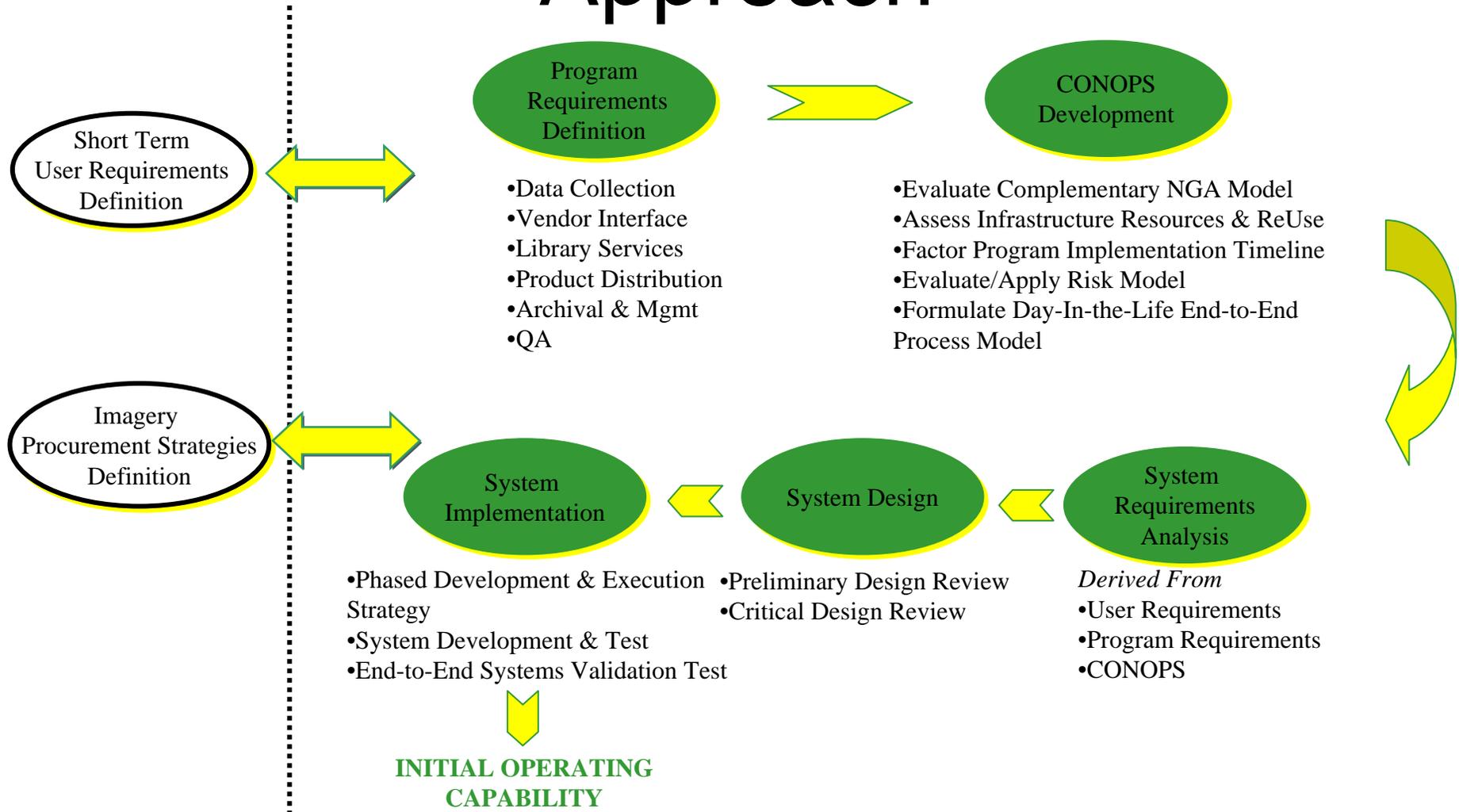
- Land Cover
- Fire Danger Rating
- DOI Land Management
- Natural Hazards
- Coastal Zones
- Environmental Monitoring
- Emergency Response

Expanding to over 18 million images of the earth!

USGS Product Access

- *The National Map* - nationalmap.usgs.gov
- Earth Explorer - earthexplorer.usgs.gov
- EOS Data Gateway –
edcimswww.cr.usgs.gov/pub/imswelcome/
- Global Visualization Viewer - glovis.usgs.gov
- Seamless Data - seamless.usgs.gov

Infrastructure Development Approach



Timeline

● FY04

- Requirements Definition
- CONOPS
- System Requirements
- System Design
- Prototype utilizing existing infrastructure

● FY05

- System Implementation
- Initial Operating Capability

Summary

- USGS EROS Data Center has had extensive experience with data archival, retrieval, and distribution.
- Pending finalization of Requirements and Budget
 - We are planning on completing the initial stages of the infrastructure development, including a prototype for proof of concept.
 - We are planning to begin implementation at the start of FY05, with operational capabilities available soon thereafter.
- Look forward to working with the IWG throughout the Infrastructure Development process, and would like the opportunity to host the next IWG meeting at the USGS EROS Data Center.

Requirements Funding Strategies: Some Things to Think About

CRSSP Interagency Working Group
Kickoff Meeting
January 28, 2004
Ray Byrnes, USGS



Policy Implications

“The fundamental goal of this policy is to advance and protect U.S. national security and foreign policy interests by maintaining the nation’s leadership in remote sensing space activities, and by sustaining and enhancing the U.S. remote sensing industry.”

- Agencies must consider using CRSS products and services to the “maximum practical extent”
- Agencies will need to coordinate procurements and share CRSS data holdings (via civil agency library, etc.)

Policy Implications, continued

- Agencies need to document buying power
 - Requires knowledge of what agencies have spent; industry report underway for FY01-03
 - Requires knowledge of projected agency purchases (via requirements-gathering process)
 - Promotes a focus on national needs (land-use mapping, transportation infrastructure, etc.)
- Agencies may need to seek budget increases
 - Based on unfunded requirements
 - Industry supports budget enhancements
 - Potential unfunded earmarks can damage other programs

Agency Procurement Options

- Order individually from commercial providers
- Order individually through NGA Clearview contract
- Band together for multi-agency procurement
 - Potential for lower prices
 - Potential for less restrictive licenses
 - Respond to unsolicited proposals
- Procurement team to be formed

Agency Funding Options

- Continue to fund procurements within specific agency programs (FY05 and beyond)
- Roll unfunded requirements into collective civil-agency funding initiatives (FY06 and beyond)
 - Common project sites
 - Snapshot of America, etc.
- Budget team to be formed



Overview of Activities And Issues

Glenn R. Bethel

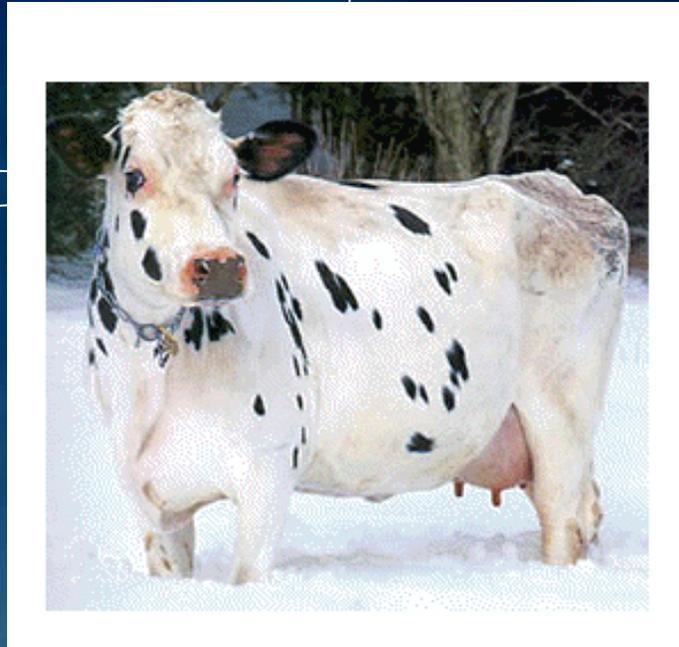
USDA Remote Sensing Advisor



From <http://svs.gsfc.nasa.gov/search/AnimationSeries/GreatZooms.html>



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R&
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Assets &
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Imagery

Assets &
Long Term
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Assets

NASA

- NASA/USDA Interagency Working Group for Earth Science Applications (IWGESA)
 - Carbon Management
 - Biological Invasive Species
 - Water Management and Conservation
 - Agriculture Efficiency
 - Air Quality Management
 - Resource Inventory and Monitoring
 - Disaster Management ←
 - **Homeland Security** ←



NASA/USDA Homeland Security

- **Preparation, mitigation, response, and recovery regarding man-made threats to food, water, and other essential support systems that are the mandated responsibility of USDA.**
- **Looking for projects that match NASA assets to USDA Homeland Security Requirements.**



Current Homeland Security IWGESA Members

- **Chair:** Glenn Bethel
- **NASA:**
 - Steve Ambrose, Kathryn (Kitty) Havens
- **USDA:**
 - Diane DiPietro
- **Animal and Plant Health inspection Service (APHIS):**
 - Alan Smith, Jessica Fantinato
- **Forest Service:**
 - Paul Greenfield
- **Farm Service Agency (FSA):**
 - Leona C. Dittus, Jerry Alanko, Steve Gill



National Geospatial-Intelligence Agency (NGA)

- **National Technical Means (NTM)**
- Data
- Processing
- Analysis

- **Tasking:** Civil Applications Committee



NGA

- Requirements Collection:
 - Survey
 - ..\..\..\NGA\NIMA\Commerci FS.doc
 - Consolidation
 - ..\..\..\NGA\NGA Consolidated USDA v3.xls



USDA Civil Applications Committee Contacts

USDA CAC Executive Steering Representative:

Mark Rey, Under Secretary for natural Resources and Environment

USDA Committee Representatives:

Chuck Dull, Forest Service

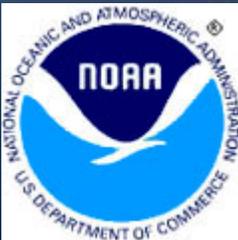
Glenn Bethel, USDA Remote Sensing Advisor

U.S. Geological Survey

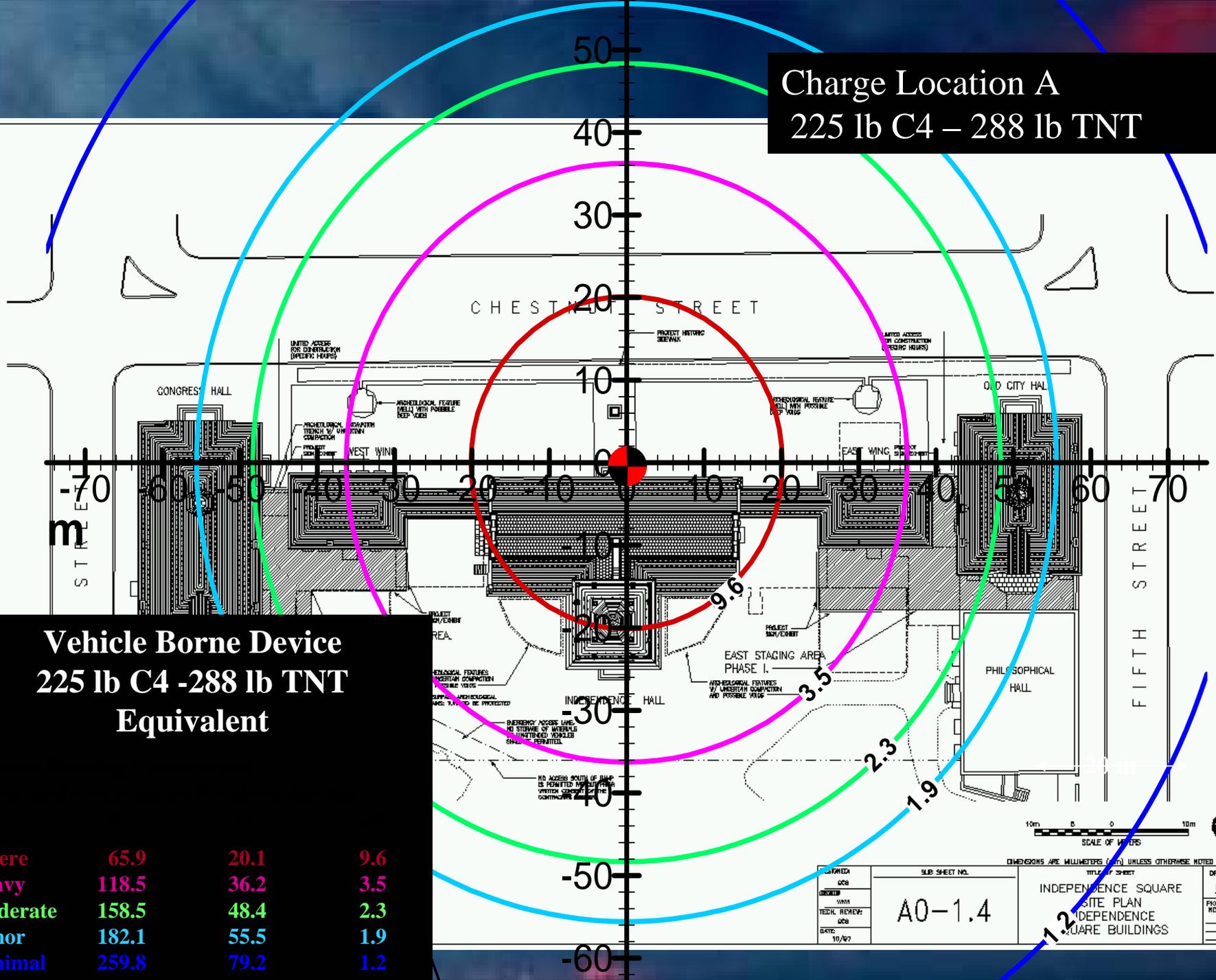
- Lead Agency for the Implementation of National Security Presidential Directive for Commercial Remote Sensing, April 25, 2003
- Will be collecting short term requirements from all Civil Agencies for commercial space based remote sensing products.
- Shares library responsibilities with USDA/FAS.
- Unofficial goal of **\$25-30** million per year in additional funds.
- Issues: Senior USDA representation
 - Rich Guldin: Forest Service
 - Wayne Maresch: NRCS

NOAA

- NESDIS provides timely access to global environmental data from **satellites** and other sources to promote, protect, & enhance the Nation's economy, security, environment, & quality of life.
- NOAA currently operates 17 meteorological satellites in 3 separate constellations.
- Lead Agency for **long term** sensing requirements.
- Issues:
 - Better relationship needed!
 - Resources to back up relationship. ←
- USDA Contract: Glenn Bethel
- Next Meeting: ~ 2/20/2004



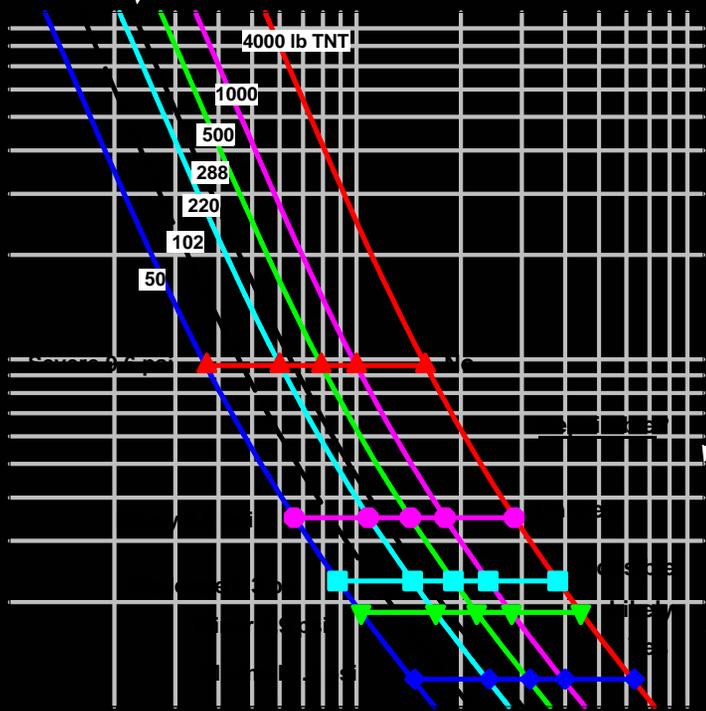
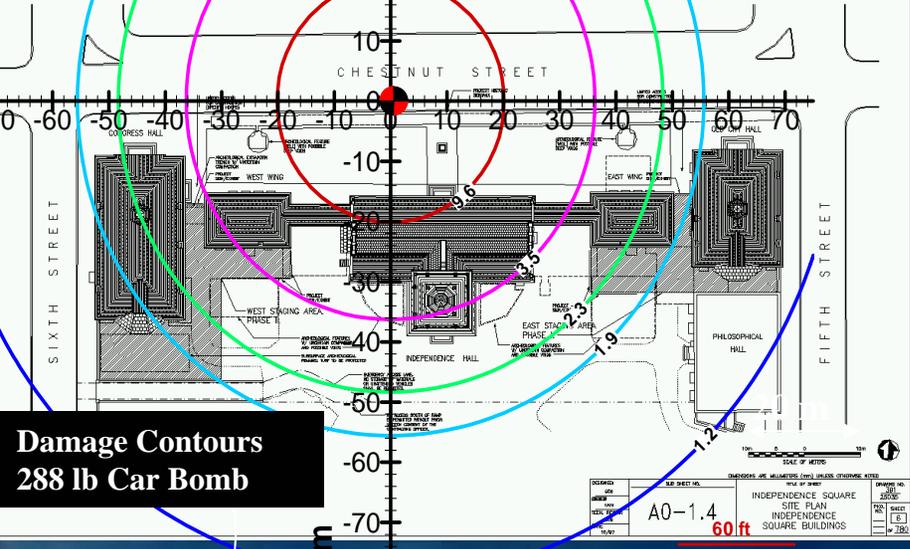
Charge Location A
225 lb C4 – 288 lb TNT



Vehicle Borne Device
225 lb C4 -288 lb TNT
Equivalent

Severe	65.9	20.1	9.6
Heavy	118.5	36.2	3.5
Moderate	158.5	48.4	2.3
Minor	182.1	55.5	1.9
Minimal	259.8	79.2	1.2

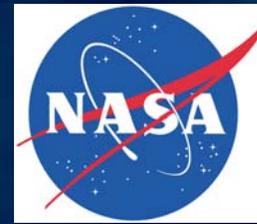
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Research



Assets &
R&D



Commercial
Imagery
/ Library



Assets &
Long Term
Requirements



Assets



