i-cubed : information integration & imaging LLC
Geospatial Content Sharing Platform from the USDA FAS using the DataDoors™ Framework
Overview

• Goal of FAS is to share imagery with participating partners – across agencies
• Make discovery easy
  – Web app
  – ArcMap extension
• Make delivery easy
  – Subset
  – Process on Demand
  – Reformat and Reproject
• Improve utilization and thus ROI
DataDoors™

- Authenticated Content Discovery
  - Existing archives
  - New content from commercial vendors

- Delivery as Files
  - GeoTiff, geoPDF, NITF, NUI etc.
  - Optimized processing for user applications

- Delivery as Streams
  - WMS, GE, ESRI etc.

- Integration into enterprise systems
- COTS or Hosted Implementations
Select Customer List

- USFS, USDA...
- U.S. Army TEC, other DOD...
- MapQuest, Yahoo ...
- Tele Atlas, Navico...
- ESRI
- Digital Globe, SPOT, etc...
- Anadarko, Marathon, IHS...
- Nokia, Nextel, Motorola...
- Weather Central, National Geographic...
- OAS, United Nations, …
The i-cubed Approach

- Adopted ‘process engineering’ approach
- Hosting and dissemination of imagery
- Enforces
  - Standardization
  - Change Management Protocols
  - Structured approach to use of data assets
  - Corporate business rules
- Enables
  - Focus on respective core businesses
  - Fast flexible responsiveness
The i-cubed Approach

• Facilitates:
  – Enterprise-wide use (all users have access to data, not just the guy with the CD in his desk)
  – Common operating picture
  – De-duplication of imagery data sets
  – Knowledge of what source material was used for production of what products
  – Traceability
Case Study: US Army

- Purchased DataDoors in 2003
- Asked i-cubed to take care of ingest, hosting and streaming services
- Current ingest of over 23,000 individual pieces of media
  - Tape
  - CD
  - DVD
  - USB Drive
- i-cubed is image hosting and streaming solution for non-classified raster data
Genesis

- Manage i-cubed’s own data assets
- Manage automated processing of standard data products
- Provide portal for customers to discover and extract their in-house and external data sources
- Commercialized as product in 2003
- Evolved to become End-To-End ASP hosting architecture
- COTS for use behind firewall
Only Seconds to Utilize Data

- View immediately in stream
- View immediately in 3-d application
- View data processed on the fly or have file delivered
  - Identify your area of interest
  - Choose a product
  - Select a process (optional)
  - Specify output parameters
  - Get your data!
Architectural Overview

i-cubed

Commercial Vendors
IRS, SPOT, GeoEye, DG,…

i-cubed
Imagery, Topo Maps, DEM’s, etc

Agency Archives

DataDoors
Archive Management, Processing, Dissemination

File Delivery
TIF, JPEG, GeoPDF SID, ECW,…

Instant Processing
Tiling, Re-Projection, Mosaicking, Custom

Visualization
OGC WMS
*ImageServer
DataDoors™ for ArcMap™
Secure Access Control
Select Data Source (Product)
Place Order!

DataDoors - Submit Request Wizard - Submit Data Request

Please review the data request. If there are any modifications that are required step back to the appropriate page to make the changes.

Click Submit to submit data request and complete process.

Request Summary:
Request Summary: 2/24/2005 2:00:37 PM
Requester: Russ Cowart - i-cubed
Total Product and Media Cost: $2.00

End User(s):
Russ Cowart - i-cubed
970-482-4400
201 Linden Street
Fort Collins, CO
80524

Help Cancel Previous Next Submit
Multi-temporal, Multi-source

Selection from Drawing Toolbar
Filtering of Scene Selection by Date Range

Define the criteria you want to apply to narrow the list of available scenes.

- Acquire all available
- Use the specified criteria

Start Date: May 01, 2003
To Date: July 31, 2005
Method: Seasonal

Help | Cancel | Back | Next | Submit
## Metadata List of Available Imagery

![Screen shot of i-cubed software interface](image.png)

### Image Collection Details

<table>
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<tr>
<th>Request</th>
<th>Name</th>
<th>Date</th>
<th>Footprint</th>
<th>Browse</th>
<th>Metadata</th>
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*Note: The dataset includes various images such as those featuring a blue square area with green outlines and a map showing a green area.*
Selection of Value-Added Process

DataDoors - Submit Request Wizard - Product Process

Select one of the processes you wish to apply to the product:

Processes:
- Deliver source data
- Mosaic
- MCOO
- AOGSAM
- Orthorectify and mosaic

Description:
Deliver source data as is

Submit
Flex / Flash GUI
FAS

United States Department of Agriculture
Foreign Agricultural Service

Welcome, FAS User!
User Name: 
Password: 
Log Out  Help

Select Product
- DigitalGlobe
- GeoEye
- L-3/SAIC
- USDA FAS
  - GLCF Landsat ETM Multispectral
  - IRS RESOURCESAT-1 AWIFS Data

Product Details
GLCF Landsat ETM Multispectral
(1) Items in Order

Remove from Order  Add to Order
Zoom To Footprint  Show All Footprints

Path 20 Row 30  Date: 2002-09-09
Name/ID: yes  Browse: (View)
Footprint: Not Available  Metadata: None
Proc. Level: -  Cloud Cover: -
Incidence An: -  Snow Cover: -
Quality: -  License: None

Browse for Path 20 Row 30 2002-09-09 00:00:00
Zoom In  Zoom Out

My Order
Archive: USDA FAS
Product: GLCF Landsat ETM Multispectral
# of Items: 1
Processing: Choose process first
Format: Choose format first
Price: (Remove)

Check Out
Proceed
DataDoors for the Web
Multi-source Browse Preview
DataDoors for the Web
Multi-source Procurement
DataDoors for the Web
Process / Workflow Selection
### Administrative Interface Job Status

**DataDoors**

#### Showing Page 9 of 192 - Jobs For I-cubed

**Job Name, UID, or Owner Name:**

- [Show Jobs For All Companies]
- [Show Jobs For My Archives]
- [First Page]
- [Previous Page]
- [Next Page]
- [Last Page]

<table>
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Administrative Interface

Licensing & Pricing

Pricing Menu

- **Product Pricing**: Configure pricing for products
- **Company Discounts**: Configure product discounts for specific companies
- **Process Pricing**: Configure pricing for processes
- **License Upgrades**: Configure percentage costs for license upgrades
- **Edit Licenses**: Add, edit and delete licenses.
- **Edit Licensing**: Assign Usable and Purchasable license to companies that view your archives
- **Edit Footprint Licenses**: Add and remove licensing from specific footprints
- **Search Footprints**: Search footprints based on name or ID
- **Media Pricing**: Assign costs to different media types
<table>
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<th>Company</th>
<th>Product Discounts</th>
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<tr>
<td>101st Airborne Div AASLT</td>
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<td>1111111.TESTJD</td>
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<td>2nd Stryker Cavalry Regiment</td>
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<td>3D Military Intelligence Center</td>
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<td>4th Infantry Regiment, 1st BN, B Co.</td>
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<td>526th/518th Engineer Detachment</td>
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<td>7th Army Joint Multinational Training Command</td>
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<td>82nd Airborne Division G2, G&amp;I&amp;S Cell</td>
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<td>90th Regional Readiness Cmd, 460th Chemical BDE, 468th Chemical BN</td>
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<td>99th Readiness Command</td>
<td>Edit...</td>
</tr>
<tr>
<td>A</td>
<td>Edit...</td>
</tr>
</tbody>
</table>
DataDoors Implementation Options

- Entire framework can exist in your network
  - No special hardware or network requirements
  - Traditional licensing or metered utilization

- Outsource data warehousing to i-cubed
  - Secure and redundant storage, processing & communication infrastructure
  - Cost-effective archive indexing and fulfillment

- Any combination
  - Modular nature of DataDoors allows processing to occur adjacent to archive hosting
  - Management and administration handled centrally