National GeoPlatform Discussion
Thomas Dabolt – DOI GIO

GEOPLATFORM.gov

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

GEOPLATFORM.gov

Present and planned National GeoPlatform capabilities

NGAC INTRODUCTION

What is GeoPlatform.gov?

A concerted effort to share open geospatial data and technology

- Implements key objectives of the National Spatial Data Infrastructure (NSDI) Strategic Plan

- Consistent, reliable portal to nation's vast ecosystem of distributed geospatial data/services

- Means for our stakeholders to publish their content once and have it accessed from anywhere

- A services platform for providing direct access to the nation's online geospatial resources
  - Single point of access for finding data assets, services, layers and maps
  - Provides shared hosting services for our stakeholders (e.g. AGOL and OpenGeo stack)

- Shared core application services for stakeholder collaboration (e.g., building shared map galleries for a community of interest)

GEOPLATFORM.gov

Towards shared geospatial knowledge and services....

Why the GeoPlatform?

Solutions must scale across Organizational and typical data boundaries

2001

2002

HFLDs

2005

2009

2010

2012

ArcGIS Online

GEOPLATFORM.gov

Towards shared geospatial knowledge and services….

Why GeoPlatform.gov?

Taking open architecture and resource sharing to new heights….

- Reduce costs of sharing authoritative open data

- Introduce key new chapter in open data and open services story

- Lower barrier to entry for more users to benefit from nation's extensive geospatial investments

  - On-demand services

- Enhance platform services and facilitate access to nation's geospatial resources for developers
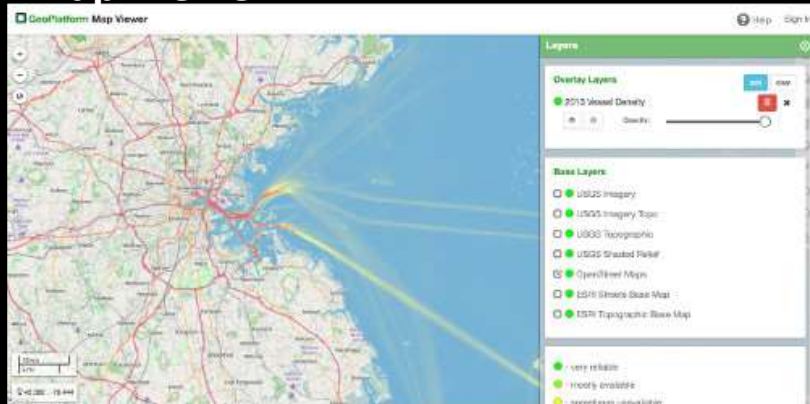
Towards shared geospatial knowledge and services….

National Geospatial Platform Highlights

Market Place

Data Search

Map Viewer

Map Manager

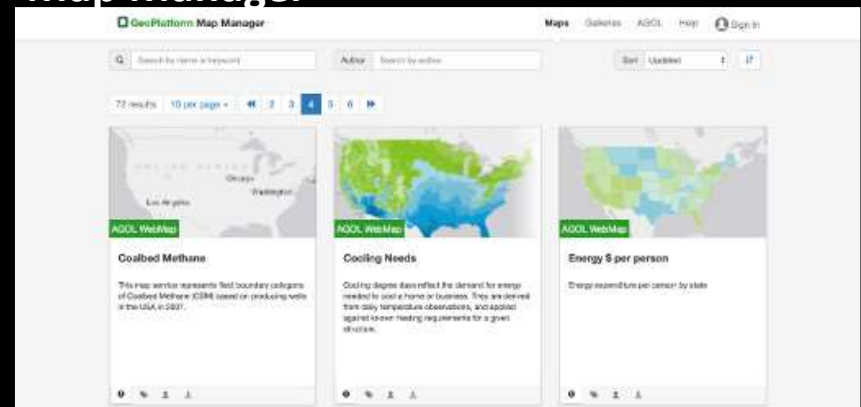**GEOPLATFORM.gov**

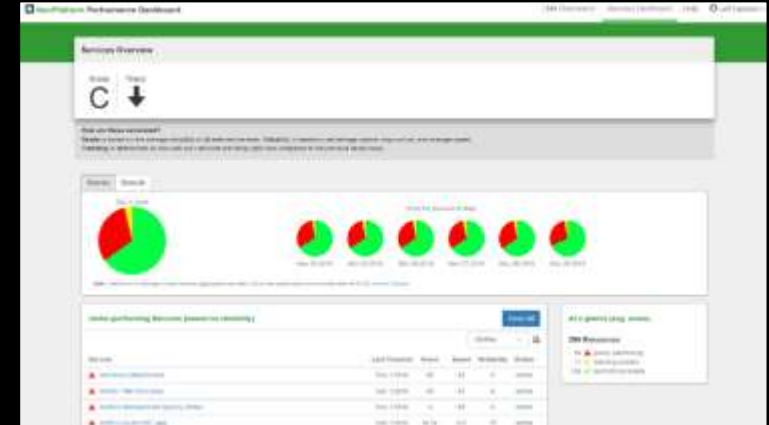Towards shared geospatial knowledge and services….

National Geospatial Platform Highlights (cont'd)

Communities

Service Dashboard
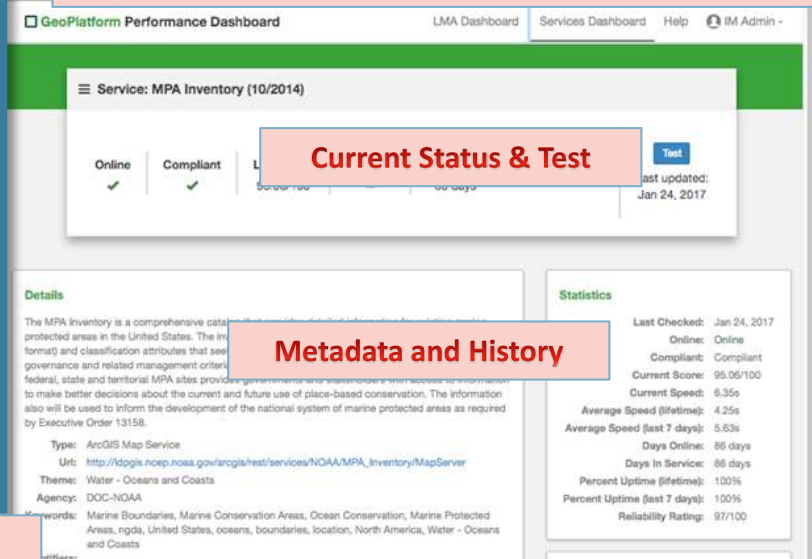

Workflow Manager

Lifecycle Management Dashboard

GEOPLATFORM.gov

Towards shared geospatial knowledge and services....

Performance Dashboards

Dataset Portfolio: Maturity

Service Detail

Current Status & Test
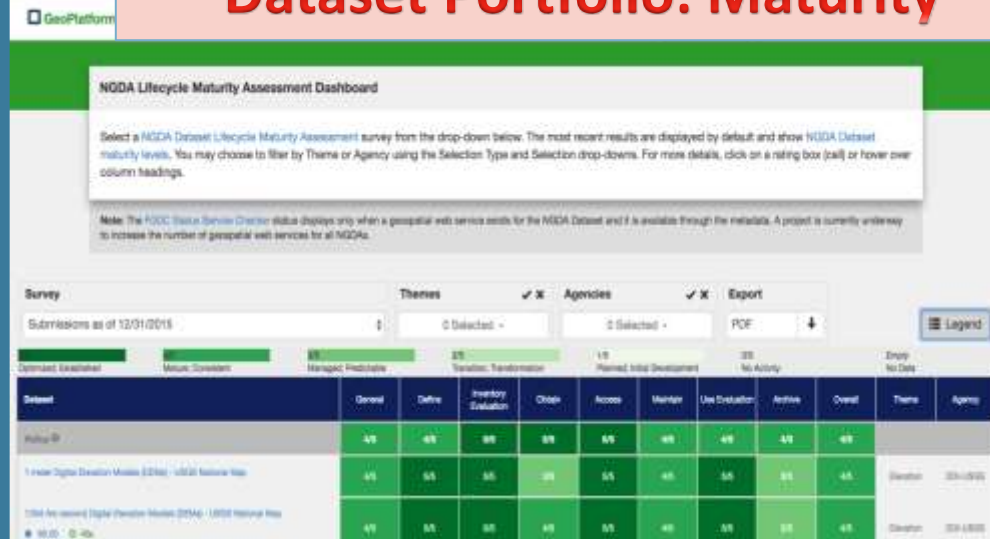
Metadata and History

Service Portfolio: Status & Trends

Linked Resources

7-day Performance Log

GEOPLATFORM.gov

Towards shared geospatial knowledge and services

Service Reliability Monitoring

Key Business Questions

- *How are my Agency services doing?*
- *How is my Theme services doing?*
- *Are my services and layers compliant?*
- *How is my service or layer doing at the moment?*
- *How have my services or layers been doing recently?*
- *Which of my services can users count on?*
- *Which of my services are underperforming and need my attention?*

Measurements & Statistics

Measurement	
Speed	The time taken in seconds to do a test, i.e. the service response time
Score	A score calculated as factor of the Speed performance and the correctness of the response.
httpTest	Tests httpServer status only and determines offline/online status.
complianceTest	Tests whether key operations are functioning. Specific tests vary by service type (Pass or Fail)

NGPI Statistic	
Online	Binary online/offline (used as a usage gate condition)
Compliant	Binary pass/fail for most recent measurement (used as a usage gate condition). Must be compliant and correct.
% Uptime	% online, compliant and correct over total number measurements over service life
% Uptime (over past 7 days)	% online, compliant and correct over past 7 days of measurement
Days Online	Total # of days the service has been online, compliant and correct without failure (an endurance statistic)
Days In Service	Total # of days the service has been online, compliant and correct over service life
Last Score	Last Score (see above)
Last Speed	Last Speed (see above)
Average Speed	Average speed over service life
Average Speed (over past 7 days)	Average speed over last 7 days of measurement
Reliability Rating	A calculated heuristic that approximates service reliability and health as numeric rating determined from several measurements and statistics
Grade	A composite grade for a set of resources based upon multiple measurements or statistics.

GEOPLATFORM.gov

Towards shared geospatial knowledge and services….

Service Utility Monitoring

Key Business Questions

- *Who (by group) is using my services today? This week? This month?*
- *How much (quantity) / how often (frequency) are my services being used today? This week? This month?*
- *What is the utilization of my services… a quick synoptic view? Which are my most heavily used assets?*
- *How is my (particular) asset being used? Who? How much? How Often? Since we've had it in service? How has usage changed over time? (details for a particular asset)*
- *I need to publish and distribute a utilization report for my services (with enough detail so people can quickly assess how the services are being used)*
- *I'd like to register for daily/weekly notification reports containing the utilization of my services, synoptic view*
- *Can you provide me key indicators of change in usage? Can you notify me when my change thresholds are crossed?*

Service Transaction Payload

STP = {User ID, **Anonymization ID***, Community ID (optional; from GeoPlatform community taxonomy), Source Web Tool ID (from GeoPlatform tool taxonomy, e.g. "Web Map Viewer"), Timestamp, Transaction ID, Service Request Payload, Service Response Payload, Target Service Asset Owner ID (agency)}

*The **Anonymization ID** masks user identity, while at the same time providing the basis for a sensible social grouping that is then exploited in reporting. This gives us a ready means of understanding the general social context of our users during reporting exercises.

Towards shared geospatial knowledge and services….

GeoPlatform Demonstration

- Service Dashboard

- Dataset Dashboard

What's under the hood?

Sometimes its what you don't see that ends up being important

- Secure, reliable, scalable, open, adaptive framework and architecture
    - Taking open, platform-independent, and interoperability to new heights

- Means to quantifiably measure, monitor and report performance

- Rapid development and deployment cycle (new release every three months)

- Collaborative government-contractor engineering review process (GeoJam every 10 weeks)… catches problems and issues early, and enhances timely feedback

- Automated DevOps processes… accelerates time to value (promotion to production)

- Open source where possible to reduce cost and barriers to reusability

GEOPLATFORM.gov

Towards shared geospatial knowledge and services….

Planned GFY2017 Capabilities

Improved Portfolio Management and Shared Resources

- **NSDI portfolio asset management**
  - Registry+
    - Register and manage NSDI portfolio: **datasets**, **services**, **layers**, **maps**, and **map galleries**
    - Supports search, navigation and access into PLATFORM's unified view of linked resources
  - Object (Metadata) Curator
    - Supports ingest of ISO 19139 and export of Geospatial Platform Profile, ISO 19115
    - Fixes basic metadata issues so that metadata are both **human and machine understandable**; key to automation

- **Performance measurement, monitoring and reporting (Service Dashboard)**
  - Enhanced service reliability monitoring for tracking and reporting service health and status
  - Service utility monitoring for tracking usage of my assets (new)

GEOPLATFORM.gov

Towards shared geospatial knowledge and services....

Core Exploitation, Collaboration & Sharing Capabilities

- Web Map Viewer – Enhance user experience to build, find and share better maps and map galleries
  - Upgrade to platform-independent **Open Map Service** for enhanced interoperability
  - Upgrade to platform-independent **Open Layer Service** for enhanced interoperability
  - Add Map Knowledge Graph for enhanced semantic search and utility; find just the right map for intended purpose
  - Add Layer Knowledge Graph for enhanced semantic search and utility; find just the right layer for intended purpose
  - Map Recommender service; finds the right fit-for-use map; find maps like this map
  - Layer Recommender service; finds the right fit-for-use layer; find layers like this layer
- Community Bundle
  - Enhanced tools and processes to build custom communities from scratch
  - Community services to enhance sites with community-specific map viewers with Open Layers, as well as embedded Open Maps and Map Galleries

GEOPLATFORM.gov

Towards shared geospatial knowledge and services....

How we do it

- Focus on getting the core PLATFORM services right!

- Work closely with partners to identify opportunities for low-hanging fruit and quick-wins… always innovating on this front.

- Stay focused on priorities and execute till we have an operational capability; Keep distractions to a minimum

- Adaptive, agile processes… Move innovations to production quickly! Continuous integration. Continuous deploy. Automated testing.

- Architecture tenets (Open+)

- Always seeking high-value for the dollar (High ROI)

Towards shared geospatial knowledge and services….

Questions and Discussion

■ The primary focus of the current development effort has been on search, discovery and use of geospatial services and open maps along with a framework for measuring the utility of the both.

■ If the GeoPlatform were to expand it's shared service offerings, what area might offer a solid return on the investment?

■ If we needed to scale back our current efforts which area or areas would you suggest spending little to no effort on and why?

GEOPLATFORM.gov

Towards shared geospatial knowledge and services....

Thank You!

For more information, click here!

Contact Info

GEOPLATFORM.gov

FGDC.GOV
FEDERAL GEOGRAPHIC DATA COMMITTEE

Service Dashboard - For Asset Managers

✓ The overall *Grade* for the services in my portfolio is good!

✓ Gives an assessment summary for my set of datasets, layers and services

✓ It's based on a set of 'measurements' and 'statistics' like how fast my services are responding, or how many days layers have been online reliably

How is my NGDA Theme doing?
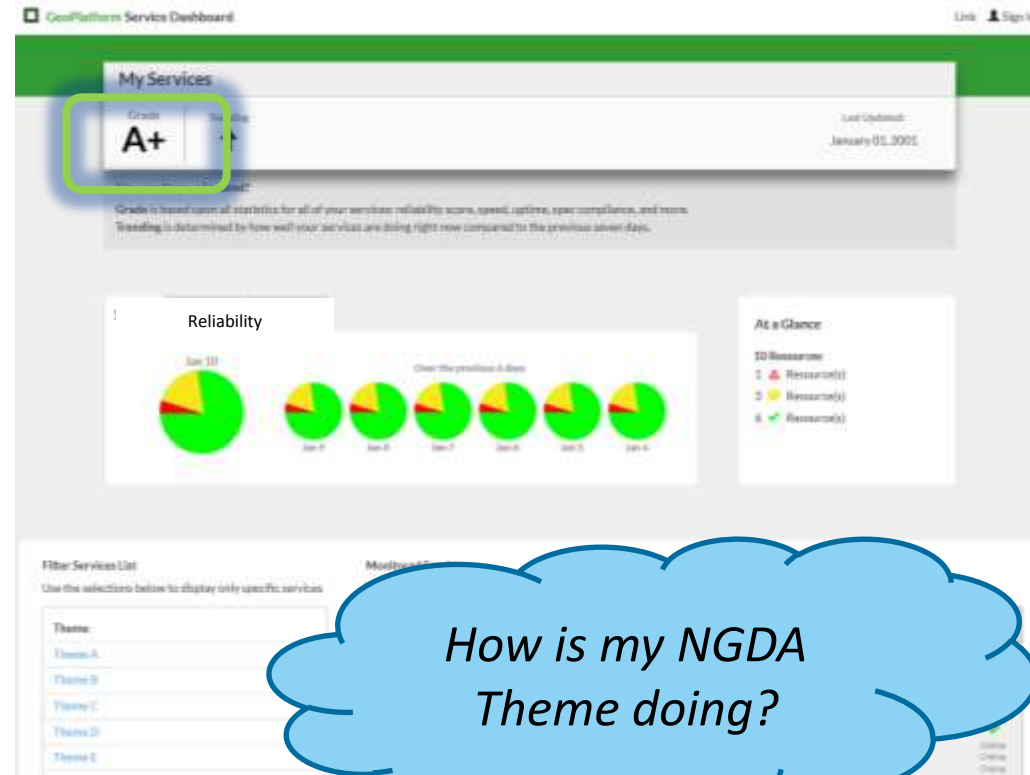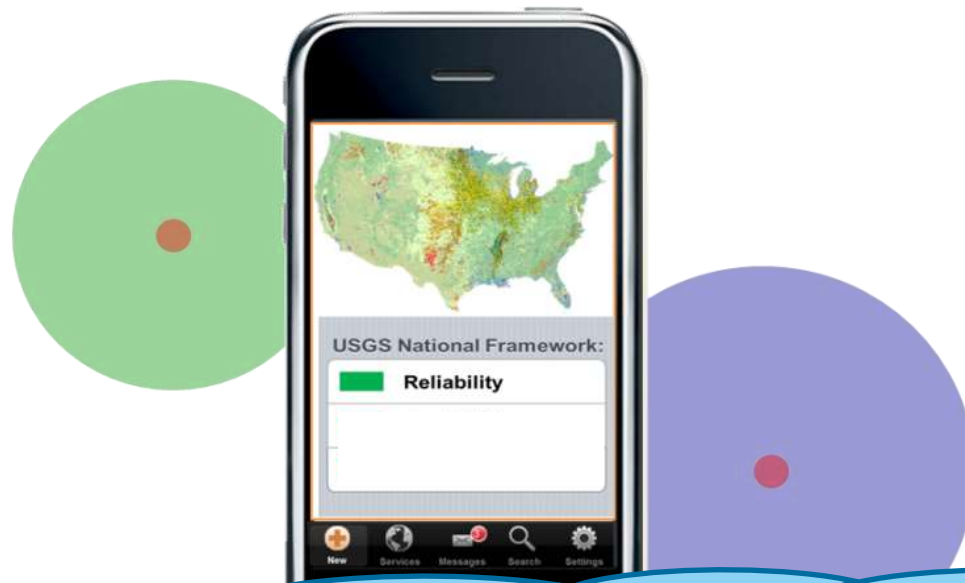
Service Dashboard - For Asset Managers

- ✓ My ***Trending*** statistics are good….
  Things are heading in the right direction

- ✓ This tells me measurements and statistics for performance and reliability have been improving over the last week

- ✓ So there are a few things I need to work on but things are good.
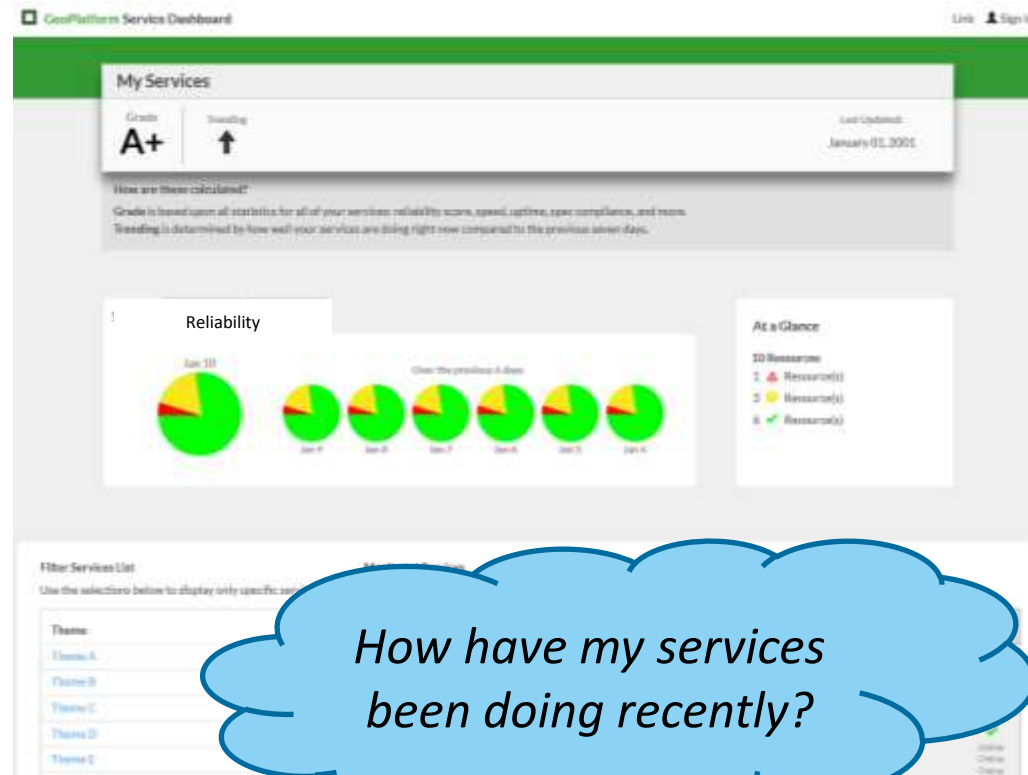
How have my services been doing recently?

GEOPLATFORM.gov

Towards shared geospatial knowledge and services….

Service Dashboard - Helps Users Get Reliable Services
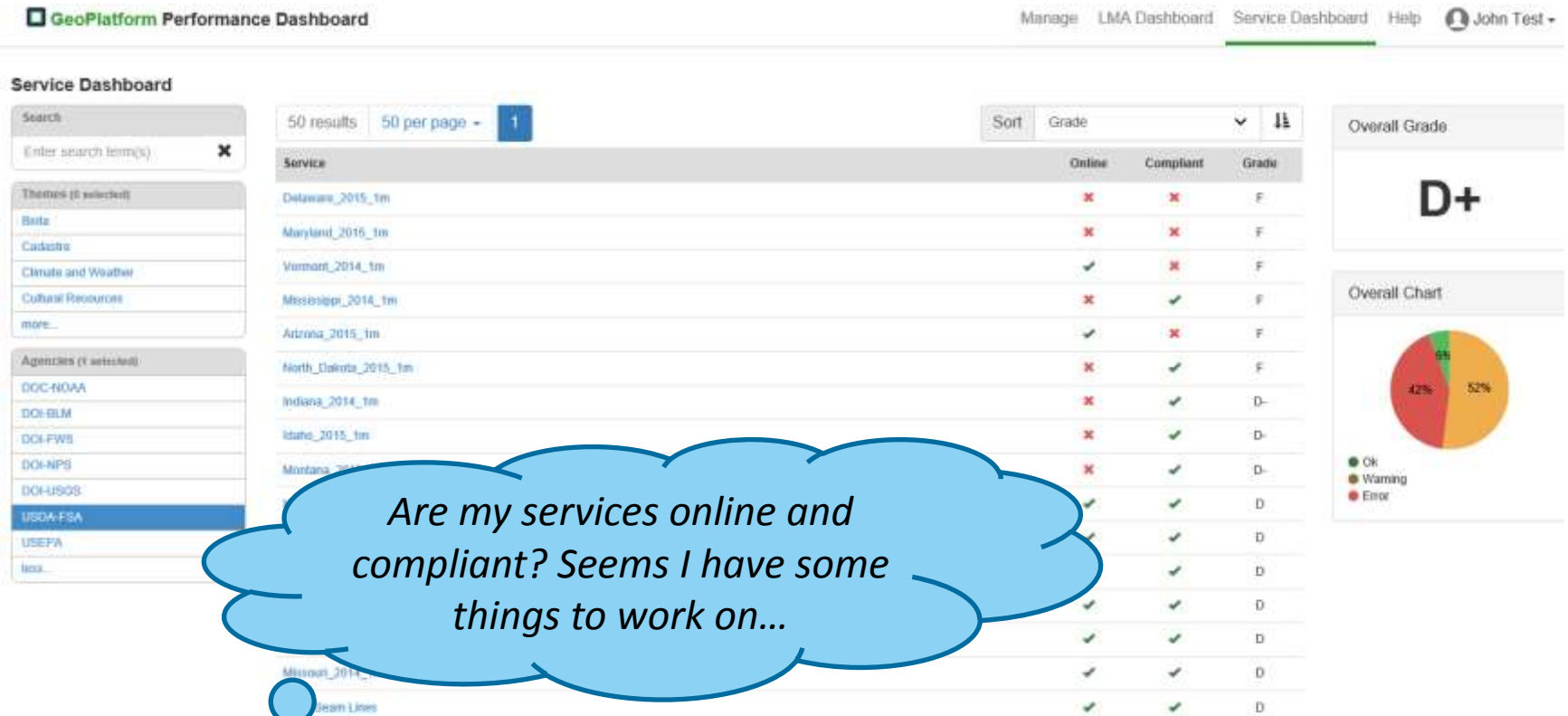

USGS National Framework:
Reliability

We don't need to see the dashboard, just give us reliable services (and indicators of reliability)

High Performance Online NGDA Services

GEOPLATFORM.gov

Towards shared geospatial knowledge and services....

Service Dashboard – for Ops Managers

Above is screen capture from functional Service Dashboard accessing Registry+

Towards shared geospatial knowledge and services....

GEOPLATFORM.gov

GeoPlatform Workshop Presentations

These presentations provide a nice overview of the current state of PLATFORM

- Overview of the FGDC and Role of the US National Spatial Data Infrastructure (NSDI) – Mr. Ivan DeLoatch, Executive Director, Federal Geographic Data Comminttee

- GeoPlatform Background – Mr. Tod Dabolt, Geographic Information Officer, US Department of Interior

- From Open Geospatial Consortium (OGC) Roots to the Present – Mr. Kurt Buehler, President, Image Matters LLC

- GeoPlatform Infrastructure and & Amazon Cloud Services - Mr. Gary Latzke, USGS

- AGOL Role within the GeoPlatform and Future of AGOL – Mr. Jeffery Peters, ESRI

- Market Place, Data search, Map Viewer, Map Manager - Mr. Patrick Neal, Image Matters, LLC.; Service Dashboard, LMA Dashboard – Mr. Jeffrey Harrison, The Carbon Project; Communities, Workflow Manager – Mr. Gate Jantaraweragul, Image Matters, LLC.

- GeoPlatform Futures (Architecture and CONOPS) – Mr. Harry Niedzwiadek, Image Matters, LLC.

- GeoPlatform, What's in Work? – Mr. John Davidson, Image Matters, LLC.

- Importance of Metadata – Ms. Jennifer Carlino, USGS

- Multinational Geospatial Co-Production Program – Mr. Marzio Dellagnello, National Geospatial-Intelligence Agency

GEOPLATFORM.gov

Towards shared geospatial knowledge and services....