Let’s Talk Digital
An Approach to Managing, Storing, and Preserving Time-Based Media Art Works

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Smithsonian Institution, OCIO
Love and Marriage

- Digital Asset Management??
  - Digital Diamonds
  - To have and to hold
  - To cherish and respect
  - To care and protect
  - To grow
  - For all eternity
Digital Asset Management System (DAMS)

Functionality Provided by SI DAMS

- Automated Hot Folder Ingest (Load) of Digital Assets
- Provides Secure, Robust, Reliable Storage
- Provide Controls for User Roles and Asset Security
- Preservation, Integrity, and Sustainability of Digital Assets
- Thumbnails, Preview/Proxy Assets, Master Asset
- Functionality for identification and tagging of assets (Metadata)
- Ability to find assets (Search)
- Tracking and Notification (Projects, Workflows)
- Transformation (image transformers, audio/video transcoding)
- Distribution (Export/Packaging/Delivery)
Current DAMS Production Environment

Supporting over 40 SI Units, 500+ users (Museums, Cultural Centers, Research Centers, Archives, Library, and the Zoo)
Built on OpenText Media Manager (OTMM - Formerly Artesia)

High Availability Configuration & Load Balancing

Artesia DAMS Main Application Server
Version 6.8, SP4
Server - Sun M4000, Solaris 10
Dual-Core
2 CPU - 64GB Total

Artesia DAMS Secondary Application Server
Version 6.8, SP4
Server Sun T5220, Solaris 10
8 Core T2 Processor – Solaris 10
• Asset Ingest (Hot Folder & EMu)
• IDS Export

DAMS Database (Asset Metadata)
Oracle 11G

Asset Repository
Isilon SX200
292 TB Total Size (Including Replication)
Currently >3 Million Assets, 80TB

Telestream FlipFactory 7.2
Server - Dell PowerEdge R710
Video Proxies and TransCoding
Infrastructure - Smithsonian Data Center

State of the Art
15K sq. ft raised floor
Multiple Redundant Systems

24X7 Real Time Monitoring
365 days a year.

Battery units, generators, and refueling contracts to ensure indefinite running power in case of power loss.
Preservation and Stewardship

- Secure, Robust, Reliable Storage
  - Asset Repository - Isilon SX200 - 290 TB (Including Replication).
  - Assets are replicated onto another Isilon node upon ingest.
  - Isilon maintains snapshots of active and replicated nodes.
  - Constant error checking.
  - Isilon Phone Home support – If system detects any disk failure it auto calls Isilon support (24X7). Isilon notifies OCIO technicians.
  - Nightly backup of asset repository to Tivoli Archive.
  - Near-line and 3 taped copies – 1 copy sent off site to First Federal.
Integrity and Validity

- DAMS is SI Digital Asset Vault – behind SI Firewall.
- Continual system monitoring and oversight.
- Technology and system upgrades.
- Hardware refresh.
- Security vulnerability scans.
- Checksums and system audits.
Access and Security: User Roles

- Assigned to each user.
- Define access to application functionality.
Asset Security

Security Policy: NPG-ADO-Dsgn and Production RESTRICTED SecPol

User Group: Everyone > NPG-National Portrait Gallery > NPG-Associate Dsgn & Production

Permissions

<table>
<thead>
<tr>
<th>Permission Name</th>
<th>Allowed?</th>
<th>Permission Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>View Asset</td>
<td></td>
<td></td>
</tr>
<tr>
<td>View Summary</td>
<td></td>
<td></td>
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<tr>
<td>Preview Asset</td>
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<tr>
<td>View Project</td>
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<td>Export</td>
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<tr>
<td>Subscribe</td>
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<td>Edit Content</td>
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<td>Apply/Remove Security Policies</td>
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<td></td>
</tr>
<tr>
<td>Custom 04</td>
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</table>
Other Considerations

- Strategic Planning
- Budget and Costs
- Infrastructure Support within your Organization
  - DAMS Staff = 1 Project Manager, 1 Developer, 1 Photographer/Imaging Specialist, 1 Video/Digital Preservation Specialist
  - OCIO Operations Support Staff = Approx. 80 (SI Staff and Contractors)
  - 24 X 7 SI Technical Support
- Knowledge of Assets and Workflows
  - Digital Asset Formats
  - Access to Knowledge Staff
    - Digital Asset Owners
    - Digital Asset Stewards
    - Digital Asset Consumers
Defining and Formalizing

- TBMA Metadata Model
- Storage Audit
- Backup Audit
- CODEC Analysis
- Disaster Recovery Exercise
- File Formats Inventory
- File Formats Status and Obsolescence Audit
- Checksum Audit – For Specific Asset Classes
- TBMA Metadata Model
- Digital Artwork Submission Package Definitions
- Digital Artwork Export Tracking and Reporting
Hot Folder Ingest

- Each User with Ingest Permissions has a Hot Folder.
- Separate Hot Folders for Images and Audio/Video.
- DAMS polls every 15 minutes and looks for the ready.txt file in the MASTER folder to ingest assets.
- User is notified via e-mail with status of ingest.

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From: no-reply@dams.si.edu
To: Christensen, Stephanie (Ogeneski)
Cc: Phan, Duy My; Meyer, Isabel; Rahaim, Ken; Babcock, Matthew
Subject: SI DAMS Hot Folder Import - Report for Metadata Profile [christensens]

---------- HOT FOLDER IMPORT SUMMARY ----------
Total files to import: 1753
Number of files imported: 1753
Number of files not imported: 0
Number of warnings: 1115

*** SUCCESSFULLY IMPORT FILES***
/damsrepo/hotImport/christensens/MASTER/02801500.tif
/damsrepo/hotImport/christensens/MASTER/02801600.tif
/damsrepo/hotImport/christensens/MASTER/02801700.tif
/damsrepo/hotImport/christensens/MASTER/02801800.tif
DAMS Metadata Models

- Three Metadata Models – Core Image, Core Video, Core Audio

- Each model contains metadata elements grouped into Sections:
  - Administrative elements
  - Descriptive elements
  - Technical elements
  - Rights Management elements
  - Embedded elements (for Images, Audio, and Video)
  - Structural Elements
  - Notes
### Stewardship Metadata

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<tr>
<th>Administrative</th>
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<tr>
<td><strong>Asset ID:</strong> d5f1ab21bfa8593248da94348c8ba0f97087a1</td>
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<td><strong>SI Holding Unit:</strong> NPG-National Portrait Gallery</td>
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<tr>
<td><strong>Other Managing Unit:</strong> Other Managing Unit</td>
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<tr>
<td><strong>SI Department:</strong> SI Department</td>
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<tr>
<td><strong>Source System Identifier:</strong> NPG.2008.133</td>
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<td><strong>Preservation ID #:</strong></td>
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<td><strong>Imported By:</strong> admin, DAM</td>
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<tr>
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### Integrity and Validity Metadata

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<td>End Time SMPTE</td>
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<tr>
<td>Audio Originating Format</td>
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<td>Asset Coding History</td>
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