

Underwater Video Community Workshop

Sharon M. Mesick

Chief, Scientific Information Services
Center for Coasts, Oceans and Geophysics



Introduction

- NOAA has a mandate to steward environmental data for the long term, and to increase reusability of archived data
- NOAA has many methods for collecting video data
 - Historically opportunistic use of submersibles and instrumentation
 - Diverse data formats, media and ‘standards’
- No unified method of managing video data collections



OER Video Data Management Proof of Concept

- Federal Agencies Digitization Guidelines Initiative*
 - Identify video management standards & best practices
- Investigate alternative video storage and access models
 - NOAA Pilot with commercial cloud service provider
- Development of ISO 119* template for video
- From Pilot to Practice – NOAA implementation
 - Direct access to compressed video
 - Asynchronous access to full resolution video

* http://www.digitizationguidelines.gov/guidelines/video_bornDigital.html?locId=blogsig



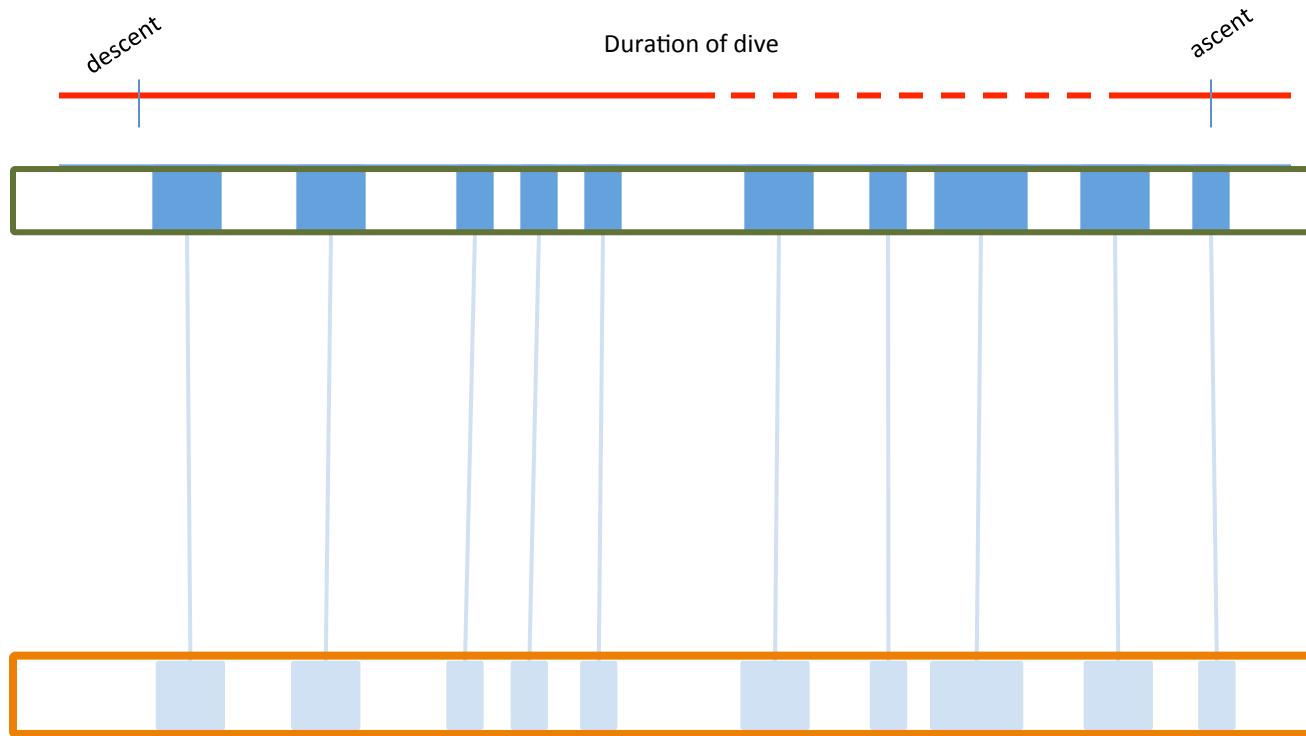
E2E Acquisition to Archive



Video time stamp + x,y,z + annotation + environmental data = rich metadata



Collection – Processing



FULL-RES: DEEP STORAGE

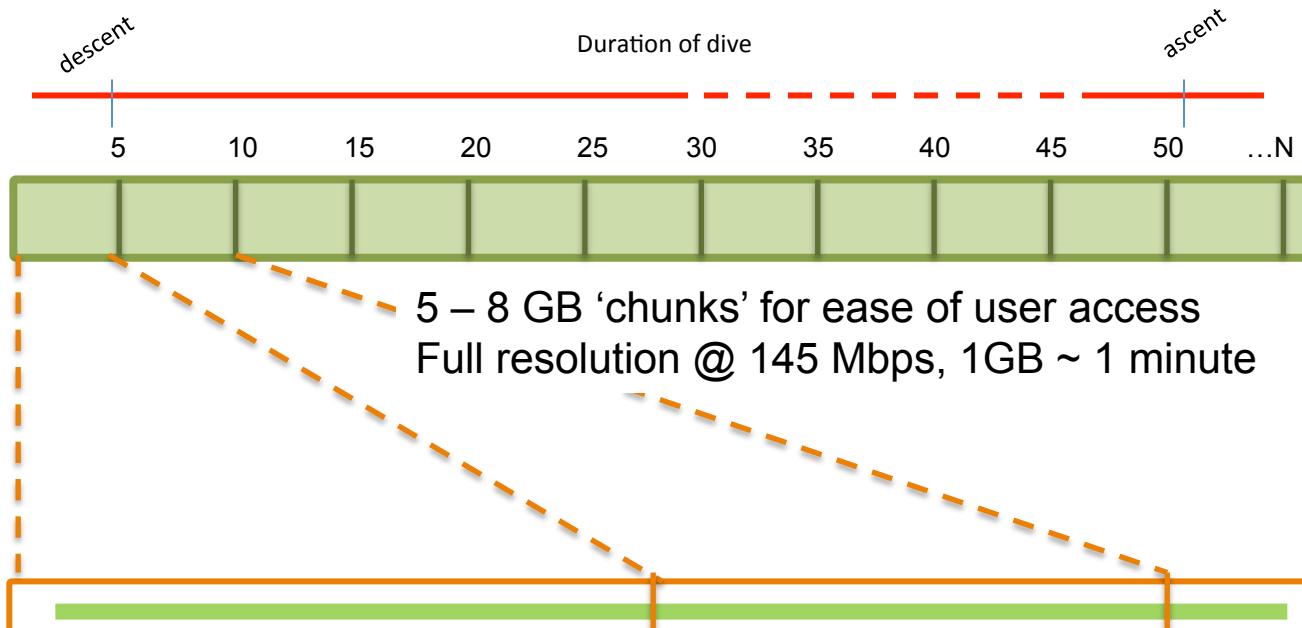
- Infrequently accessed
- Large volume
- Archival quality / deep storage

LOW-RES: ON DEMAND

- Frequently accessed
- Web-streaming quality
- Direct access / preview for full-resolution



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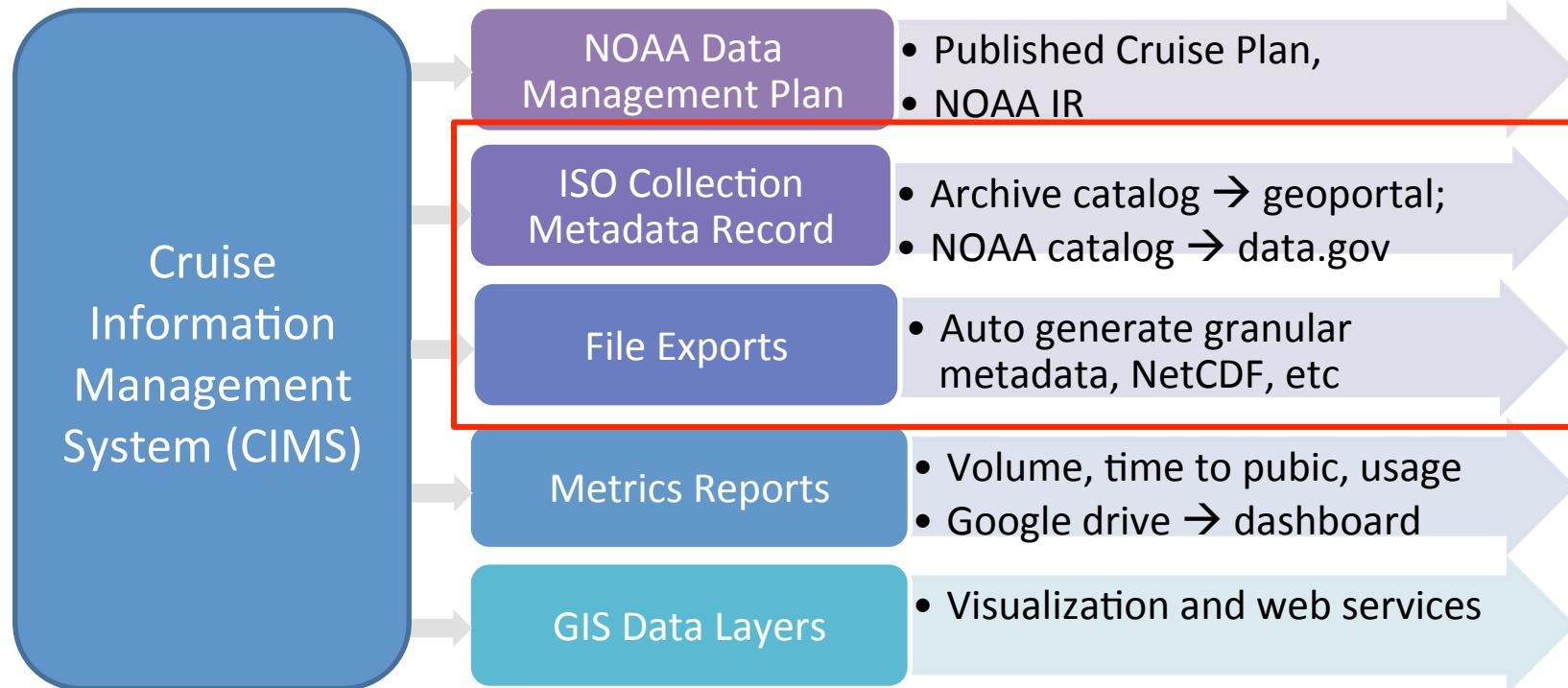


SUMMARY OF OER VIDEO AND AUDIO DATA TECHNICAL SPECIFICATIONS

VIDEO	AUDIO
Container(wrapper: Apple QuickTime (.mov)	Audio channels: 4
Target total bitrate: 145 Mbps	Audio codec: PCM
Timecode: SMPTE (Control Clock set to UTC)	Audio sample rate: 48 kHz
Frame size: 1920 x 1080	Audio bit rate: 1152 Kbps
Aspect ratio: 16:9	Audio bit rate mode: Constant
Video codec: ProRes (422)	Audio bit depth: 24 bit
Compression type: Lossy	Closed Captioned: No (not yet)
Video frame rate: 29.97fps	
Color space / encoding: YUV	
Chroma format: 4:2:2	
Interlaced scan (Top Field First)	
Video frame rate: Constant	
Color Primaries / Transfer Characteristics / Matrix coefficients: SMPTE 240M	



Infrastructure: Metadata Collection and Tracking



Discovery, Access and Storage over Time

VDMS	Interim	VDDMI
Online Catalog	Multiple catalogs	Multiple catalogs, custom portal
Manual copies	Direct access or user request	Direct access or asynchronous access
Physical media	Raid systems, external drives	Spinning disk or near line storage



NOAA Ocean Exploration and Research Program Data Access Request Form

Welcome to the NOAA OER Program Data Access Request Form. Please complete the form below and click submit. An OER Information Management Team member (email: cer.info@noaa.gov) will respond to your request as soon as possible.

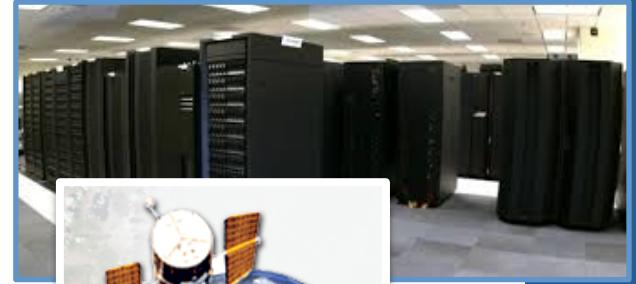
Requester Information:

Full Name *

Physical Mailing Address and Phone Number *

Organization *

Email Address *



NOAA ENVIRONMENTAL INFORMATION PORTAL

NOAA Ocean Exploration and Research Program Data Access Request Form

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Geographic Coverage:

Select the area you would like to search for data. You can also enter values related to the coordinates selected from the map below. Click "Search" to find data.

Latitude: Longitude:

Observation Dates:

Start date: End date:

Depth Range:

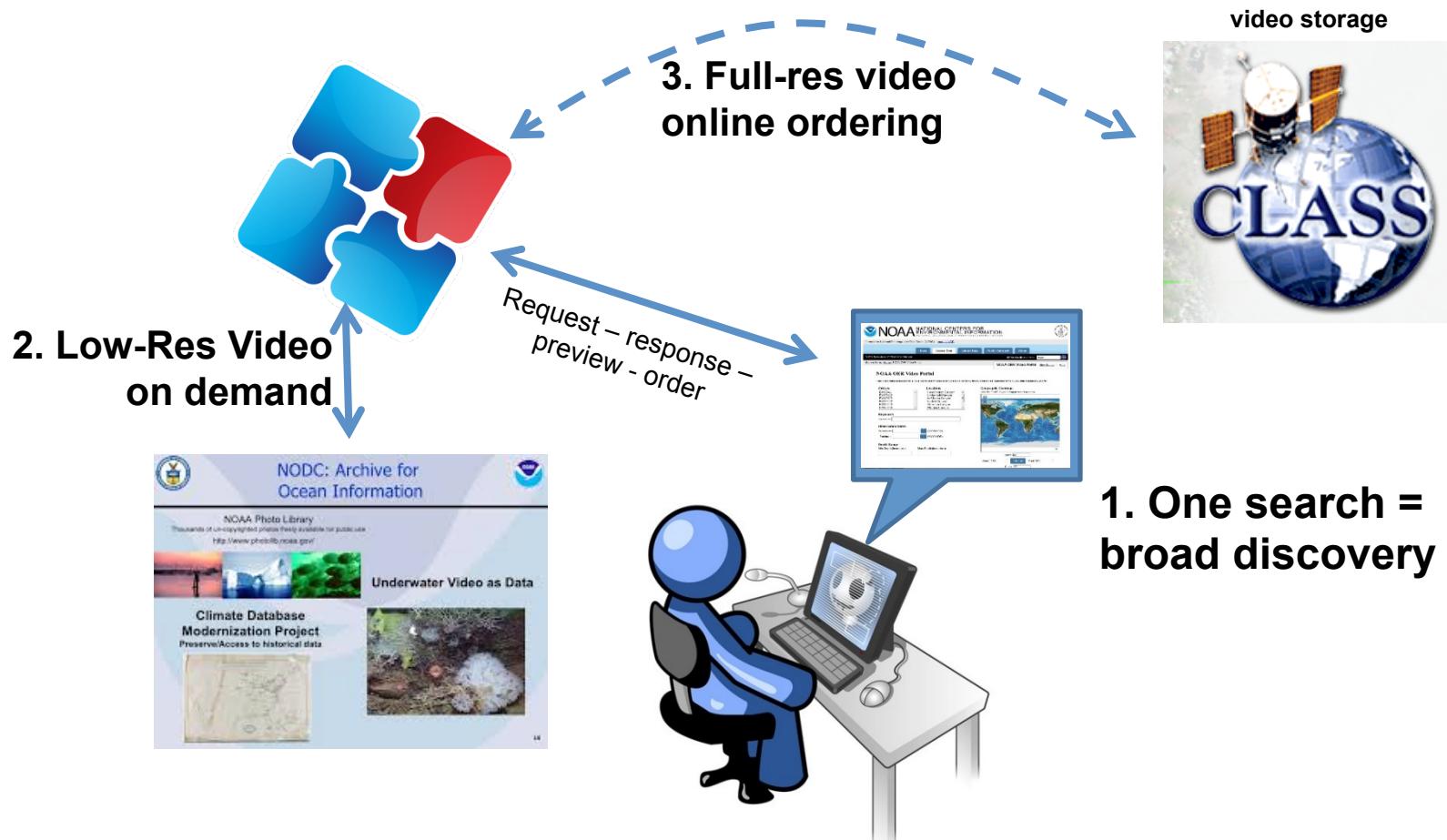
Min depth to measure: Max depth to measure:

Map:

Map showing the geographic coverage area. The map displays the world map with the search area highlighted.

Access to the Archive

Balancing Latency and Cost



Summary: three things we do well

- Explore frontiers in data management
 - Pilot to practice
- Inherit information
 - Apply collected information to create necessary documents (metadata);
 - Automate and optimize documentation
- We create really good metadata
 - Low-high data access model



Summary: three things we do least well

- Cross-program coordination
- Legacy data management
- Keep up with technology
 - Technology advances faster than we can manage



Three Things (takeaways)

- A standards-based approach ensures all roads lead to the same destination
- Easy data discovery relies on rich metadata
 - E2E systems make metadata easier
- Open access is an important target state
 - Scientific inquiry must be allowed to steer discovery and access





Sharon M. Mesick
Chief, Scientific Information Services
National Centers for Environmental Information (NCEI)
Center for Coasts, Oceans and Geophysics
1021 Balch Blvd Suite 1003
Stennis Space Center, MS 39529 – 1021

Sharon.Mesick@noaa.gov
228-688-2256 (Office)

