

## **DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)**

### **1. New shipboard data archiving/sign-off sheet**

### **2. Frame-grabber - Alvin and Jason2**

Examples and practical approach to providing useful data and metadata on a real-time and archiving basis as well as a template for migration of legacy data.

### **3. WHOI archives/data website and suggested improvements**

- a. moving up information access to NDSF vehicles
- b. including other vehicle imagery besides Alvin
- c. prototyping moving visual data migration scheme using EPR and Endeavour Ridge2000 Integrated Study Site data (Fornari and Kelley)
- d. completion of Alvin 'Best Hits' collection

### **4. Summary of income from NDSF vehicle imagery/data and WHOI outreach**

## DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)

### 1. New shipboard data archiving/sign-off sheet

[Sample and Data Log.doc](#)

# DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)

## 2. Frame-grabber - Alvin and Jason2

Examples and practical approach to providing useful data and metadata on a real-time and archiving basis as well as a template for migration of legacy data.



[http://www.whoi.edu/marops/vehicles/alvin/alvin\\_framegrabber.html](http://www.whoi.edu/marops/vehicles/alvin/alvin_framegrabber.html)

## **DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)**

### **3. WHOI archives/data website and suggested improvements**

- a. moving up information access to NDSF vehicles
- b. including other vehicle imagery besides Alvin
- c. prototyping moving visual data migration scheme using EPR and Endeavour Ridge2000 Integrated Study Site data (Fornari and Kelley)
- d. completion of Alvin 'Best Hits' collection

**Archiving and data distribution to PIs for NDSF vehicle operations complete for all programs through end 2003.**

## DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)

The UNOLS National Deep Submergence Facility (NDSF) archives maintained at Woods Hole Oceanographic Institution (WHOI) are the repository for a diverse suite of photographic still images (both 35mm and recently digital), video imagery, vehicle data and navigation, and near-bottom side-looking sonar data. These data have been collected by numerous investigators who have used NDSF vehicles during their research. These data comprise a unique set of information from a wide range of seafloor environments over the more than 25 years of NDSF operations in support of science. This information conservatively represents an outlay in facilities and science costs well in excess of \$100 million.

To date, WHOI has supported the routine maintenance and proper storage of NDSF archival material through use of overhead and endowment or private funds, as part of its responsibility as NDSF operator. This has included construction of climate controlled storage facilities, purchase of specialized equipment for processing and duplicating film, and personnel salaries to assist in the overall effort.

## DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)

Several archive related improvement issues have become evident over the past few years. The most critical ones are:

- migration and better access to the 35mm Alvin and Jason still images through digitization and proper cataloging with relevant meta-data
- preservation of older 35mm films from Alvin,
- assessing Alvin data logger data, migrating data on older media no longer in common use, and properly labeling and evaluating vehicle attitude and navigation data,
- migrating older Alvin and Jason video data, especially data recorded onto Hi-8 tape that is very susceptible to degradation on each replay, to newer digital format media such as DVD,
- improving the capabilities of the NDSF archives to better serve the increasingly complex needs of the oceanographic community, including researchers involved in focused programs like Ridge2000 and MARGINS, where viable distributed databases in various disciplinary topics will form an important component of the data management structure.

## DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)

### Proposed Improvements

- 1) Complete selection of 'best hits' of Alvin 35mm and Jason 35mm images, digitize and place on line with key meta-data (time, location [geographic and lat/lon], altitude, heading, depth).
- 2) Migrate, clean, or duplicate any older Alvin or Jason 35mm films, and get estimates for digitization of large quantities of spooled film and assess how much would need to be done, either in terms of specific geographic areas of importance for future work (e.g. MOR sites like Juan de Fuca, TAG, EPR, etc.) or representative seafloor settings.
- 3) Transfer video footage currently on Hi-8 and VHS tape to digital media. At the same time as this is being done, frame grab imagery at reasonable resolution (640x480) at 30 sec. Intervals and compile the images within a web-browser format, such as has already been done for the recent Jason and Alvin frame grabbed imagery. These images would be tagged with time, thereby permitting integration of vehicle attitude and navigation data once that is available.

# DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)

## 2. Frame-grabber - Alvin and Jason2

### 4 Fill-out End of Dive Form and Generate HTML Tree

#### Software Setup:

Script: alvin\_generate\_html  
Requires: perl, gnuplot, fly

Input: alvin.dnnnn.eic  
SrcN/Images0001/\*.jpg  
Alvin HTML Template File

#### Output: HTML Tree

CruiseID/Alvin-Dnnnn/html  
CruiseID/Alvin-Dnnnn/TimeSeries  
Updates Cruise Dive List

#### End of Dive Form

Cruise ID:	ATL99-99
Cruise Name:	Test 2003
Location:	East Pacific Rise
Chief Scientist:	Barrie Walden
Dive #:	9999
Pilot:	Dudley Foster
Observer1:	Stephen Gegg
Observer2:	John Doe
Synopsis:	Dive synopsis goes here
Processing ... generating HTML	
<input type="button" value="Update"/>	

### 5 Burn CD and put on Webserver (WHOI/MarineOps)

#### Frame-Grabber User Interface (Netscape)

Web Accessible  
Integrated Images, Data, &  
Navigation Map  
Random-Access Time-Line  
VCR-style Playback Buttons  
Image Proof-Sheets  
Cruise Dive Info



[EPR\\_decadal\\_archive.xls](#)



## DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)

### Outreach Activities

Distributed about 700 press kits or information packages in hard copy and another 500 electronic packages as part of our on-going media relations activities this year.

Organized a press conference at the AGU Fall Meeting in San Francisco December 9 on deep submergence

Supported journalists making cruises on R/V ATLANTIS (among them David Malakoff of *Science* magazine), and helped organize several web casts from sea for various organizations. Visiting journalists heard presentations on and/or viewed NDSF assets during the year, among them the Institution's own Ocean Science Journalism Fellows (7) in September, and the international Knight Science Journalism Fellows (10) from MIT in October.

Provided images and information for a number of activities related to the ALVIN replacement study and Ocean Studies Board report, and for continuing Ocean Commission activities.

Provided materials for many exhibits and special presentations at such locations as The Exploratorium in San Francisco, Harvard Museum of Natural History, American Museum of Natural History in New York, Museum of Science and New England Aquarium in Boston, the Carnegie Academy for Science Education in Washington, DC, the Mart Museum in Italy, and the Royal Society Christmas Lectures in London.

## DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)

Responded to dozens of educators around the country sharing information with their classrooms separate from the many web sites and other educational activities we support with images and information, such as Dive and Discover, Extreme 2003, and the like. Some examples: we provided images, personnel and equipment for a live link to the Liberty Science Center in New Jersey in August as part of our participation in activities related to the "Volcanoes of the Deep" IMAX film, and in November we arranged for a live link between The Exploratorium in San Francisco and Research Vessel ATLANTIS and personnel diving in ALVIN

Dozens of articles appeared in print in the U.S. and abroad, and dozens of radio and television programs and web sites featured the National Deep Submergence Facility. *Newsweek*, *Astrobiology Magazine*, *Marine Scientist*, *Science*, *Harvard Magazine*, National Public Radio, *National Geographic Magazine* and National Geographic Channel, Discovery Channel, Science Channel (formerly Discovery Science Channel), PBS, The Learning Channel, The History Channel, and The Travel Channel were some of the media organizations featuring NDSF facilities and science.

## **DESSC Winter 2003 Meeting - NDSF Archiving (D. Fornari)**

### **4. Summary of income from NDSF vehicle imagery/data and WHOI outreach**

#### **Imagery Requests:**

Logged **358 NDSF-related requests in 2003**, compared to 400 in 2002, 342 in 2001, 234 in 2000 and 214 in 1999.

Requestors included: The National Academies, W.W. Norton Publishers, National Science Foundation, British Broadcasting Corporation, Polish Scientific Publishers and the Museum Ridentino di Scienze in Italy.

#### **NDSF -Related Licensing Revenue Total: \$27,838**

Income received from video from the National Deep Submergence Facility Archive or of the NDSF vehicles amounts to \$14,125.75. Of that total \$1,100 comes from the 1985/86 TITANIC expeditions, with the remainder (about \$13,000) from hydrothermal vent cruises (underwater footage and footage of NDSF vehicles).

Income received in 2003 from still images related to the NDSF amounts to \$13,707.26 of this total: hydrothermal vents accounted for \$7,679.32, TITANIC images from the 1985/86 cruises for \$2,793.00, and images of the vehicles themselves (on deck, being launched, etc.) for \$3,234.94 of the total.

**WHOI contribution to managing licensing and distribution of imagery for UNOLS/NDSF amounts to ~0.5-.75 FTE in the Media Relations Dept. at WHOI.**