

2004 Proposal Form – Internal-only Projects

Submission Deadlines: Phase I: 8:00 a.m. on August 4th, Phase II: TBD

Project Number: 500055

Project START: Jan 1, 2004 Project Duration (in years): 1

Project Manager/PI: Nancy Jacobsen Stout

**Project Title: Core Video
Annotation Data - MDUC**

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1) Abstract (new and continuing projects)

Outline Annotation

ROV “outline” video annotation has been designated a core data stream, which means that support for the collection, processing, and archiving of the data is provided on an institutional basis rather than through individual projects or divisional budgets. The primary elements of this ongoing effort include:

- Outline video annotation of all ROV dives through ITD.
- Data archiving and dissemination through ITD.
- Data validation through a Science data “champion”.

This project will include only the resources and expenses required to support ROV video annotations in outline mode, which is mostly limited to annotation staff time and video tape budget. A small quantity of IAG and/or IS days may also be required for system hardware and database maintenance. All other Video Lab expenses and resources will be covered in the ITD Video Lab divisional budget. The final resource requirements for this project will be generated once the total number of 2004 ROV dives has been finalized. The ongoing annotation program is expected to operate as in past years, including submission of quarterly progress reports to the MDUC chair and data “champion”.

The Video Lab staff members also remain available to participate in research cruises, assisting the science crews and contributing to post-dive data and sample processing. Gaining this exposure to advanced scientific theories and field procedures facilitates improved understanding of the research mission, ultimately enriching the quality of the video-related data.

Video Annotation Quality Monitoring Program

MBARI’s video annotation database is by nature an evolutionary entity. Marine organisms, geological features and other objects of technical or scientific interest documented during MBARI’s ROV missions are continuously being discovered, renamed and more precisely described. Consequently, Video Lab annotators are continually making updates to reflect the most up-to-date identifications as they are confirmed by scientific research. Though these ongoing efforts are now occurring, a significant number of annotations that require review and update remain outstanding. Therefore, the Video Lab proposes to officially implement a video annotation quality control program. The proposed 2004 project would consist of setting up consistent monitoring and updating processes and completing an extensive initial review and correction sweep through the data.

The following phases are proposed for,

2003:

Phase 1 - Identify major areas that will require revision (Quarter III)

Phase 2 - Initiate trial corrections using the newly released VARS system (QIV)

And 2004:

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Phase 3 – Evaluate phases 2 and 3 and make necessary improvements to the process

Phase 4 – Implement the new program, coinciding with the final release of VARS

Phase 5 – Begin using the new program to complete the extensive initial sweep through the data

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2) Proposal

a) The problem addressed (for new projects only)

This is a continuing project.

b) Approach to the problem (new and continuing projects)

- Engineering/technology development
The existing VICKI software prototype is being used while the new annotation and knowledge base software continues to be developed through the current VARS project. The VARS Query software was officially released in 2003 and is being used regularly.
- Field programs
All MBARI ROV missions continue to be recorded on Digital Betacam (standard for all footage) and HD-D5 (selects only). Video annotation software tools are currently being used aboard the Point Lobos and Western Flyer and in the Video Lab. They are also used on some in individual desktops (without a video player connection).
- Data reduction and analysis
All ROV dive video recordings are annotated in 'Outline' mode by the Video Lab staff. The resulting database is used by MBARI science staff and their colleagues for hypothesis generation, object or event identification, and further scientific analysis.
- Proposed duration of project and approximate plan of action
This project will continue to operate annually as it has in past years. The launch of a formal, ongoing annotation quality monitoring project, which will take advantage of the new VARS software capabilities, is also being proposed as described in the abstract above. It is anticipated that this program will require video lab staff review and implementation time, but no additional development requirements are anticipated.

c) Specific deliverables (new and continuing projects)

- Products from research and development (instruments, tools, documentation, publications, presentations, etc.)
The video tape archive and related annotation database serve to document the events of MBARI's ROV missions. These results contribute to the production of scientific, educational, and technical publications and presentations.
- How success will be measured
Feedback from scientists, management, and the MDUC committee will be used to measure the success of the annotation database and related products and systems. The newly released VARS Public Query will also provide an additional avenue for feedback from our external colleagues. Modifications to this core data stream will be approved through MDUC.

d) Project team (new and continuing projects)

The ROV outline video annotation team includes:

- Project manager: Nancy Jacobsen Stout (Video Lab Supervisor, ITD)
- Lead scientist: David Caress (MDUC, Science)

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- Science data “champion”: Steven Haddock (Video Data Champion, Science)
- Science advisor: Kim Reisenbichler (MDUC, Science)
- Annotators: Nancy Jacobsen Stout (KB Manager), Linda Kuhnz, Lonny Lundsten, Kyra Schlining, Susan von Thun

e) Project Lab Space (new and continuing projects)

MBARI Video and Digital Labs and tape vault in Building A
Shipboard installations of the VARS annotation software
Video Tape Vault in Building G
Off-site storage of video tape copies (Iron Mountain, Hollywood, Ca)

3) Budget Justification (new and continuing projects)

Resources and Expenses

This project is expected to operate in 2003 as it currently does. The project budget will include only the primary resources and expenses required to annotate the ROV video in outline mode and to maintain and quality check the annotation database; this primarily will include annotation staff time and video tape expenses. All other Video Lab expenses will be covered either in the ITD Video Lab divisional budget, or in other project budgets (e.g. projects requiring video annotation in “full” rather than “outline” mode).

The following budget estimates are based on 150 *Ventana* (average 5-hour duration) and 150 *Tiburon* (average 10-hour duration) dives projected for 2004:

- Approximately 300 days for video analysis and processing by video annotation staff. An additional 75 days of video staff time are being requested to complete the extensive initial sweep through the data for quality control. We anticipate less time will be required to maintain the quality control program in future years.
- Approximately \$85,000 will be required to purchase Digital Betacam video tapes (@ ~\$30 each), which is the primary video archive format required for ‘Outline’ annotation (includes S&H, dubs, etc).

4) Milestones (new and continuing projects)

- Daily: Each video annotation staff member will annotate 4 hours per day each day she/he is at work. The video staff will work with the Video Annotation Data Champion as needed to address questions and concerns regarding the annotation process or scientific value and usefulness of this data.
- Quarterly: The video lab will provide quarterly reports and the video data “champion” will validate the quality of the video data by providing reports to the MDUC committee, as necessary.

	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Milestone 5	Total Resources ¹ for each resource category for all milestones listed here
Milestone date						
Milestone description						

¹ This number should be same as the number you entered on the resource requests for this particular resource

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EE						
SE						
ME						
IAG						
Machine Shop						