Environmental Services
Integrated Video Mapping System™

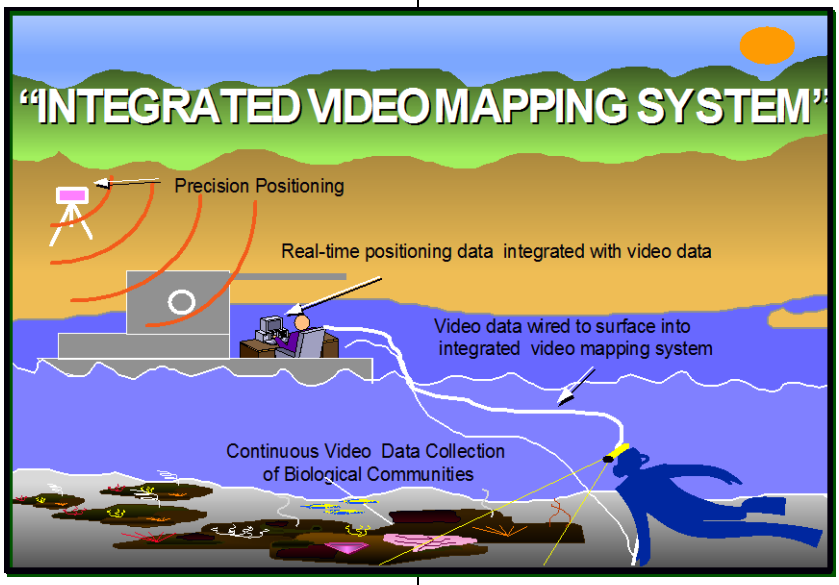
OVERVIEW

The collection and management of data during a field investigation is complex. The inputs of many sampling and measurement devices must be integrated to facilitate accessibility, ease of use, and proper quality control. Our Integrated Video Mapping System™ (IVMS) is designed for use during investigations requiring the collection of video and still photographic data for inspection and documentation purposes. By integrating all of the variables typically measured during such an investigation (e.g., positioning data, video data, photographic data), the IVMS allows investigators to concentrate on making real-time observations critical to the success of a survey, while ensuring that data are properly collected under strict quality control procedures.


Biologist conducting IVMS survey

THE SYSTEM

The system integrates positioning data with video, still photographs, and other measurements (water depth, water quality, etc.) in an on-line computer database. During real-time data collection all data are stored in the computer database. Real-time positioning data (typically DGPS) are also visible and recorded on the video record as well as directly linked and plotted into the GIS. Video data are recorded on videotape while 24 bit images of selected views are digitized and stored onto optical disk.



During real-time collection of data, digitized images from previous investigations can be recalled on the screen in sizable windows allowing exact duplication of data during repetitive monitoring investigations. Images are stored into a hierarchical database that can be established before the investigation and modified, as necessary, depending on the observations.

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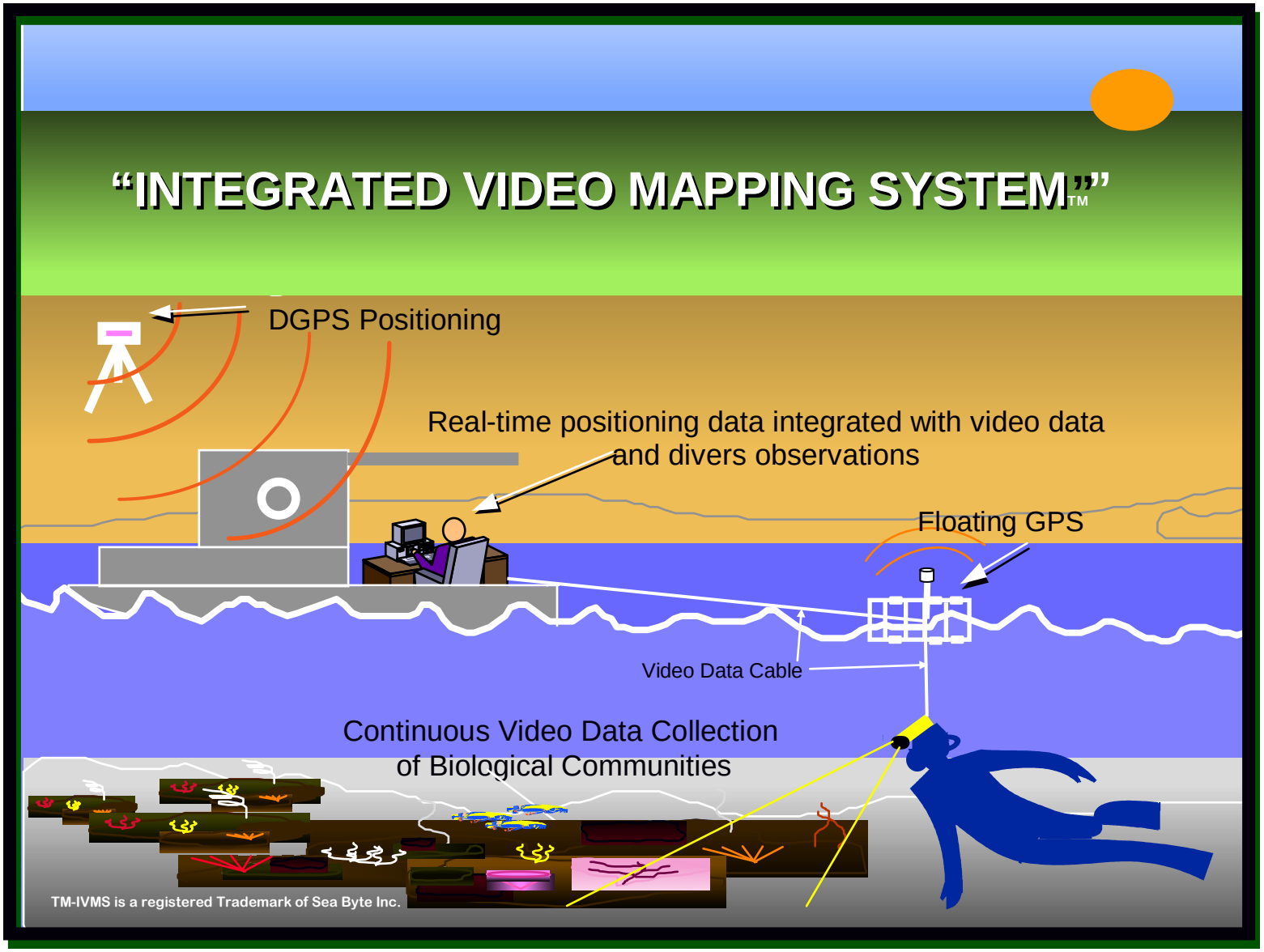
Positioning data are stored on the videotape and in the computer database while continually correlated to all other data inputs . This facilitates easy computer assisted review of the videotapes during post-processing. Notes, other observational data, and measurements (instrument measurements, etc.) are logged in the database and correlated with specific frames, or sections of video data.

ADVANTAGES

The IVMS provides several advantages not available through other data collection techniques.

- *Data Integration* - On-line computer controlled data collection integrates information in a computer database facilitating efficient tracking and quality control.
- *Digital Recording* - Video and positioning data are stored in digital format allowing time-saving, computer assisted searching and review of specific video footage.
- *Image Digitization* - Video data can be digitized and stored as 24 bit images. Previously archived images can be viewed on-screen during follow-up surveys to ensure the repetition of data collection efforts.
- *Hierarchical Database* - Observations (i.e., injury types), digitized images, and notes can be stored in a previously established database facilitating easy retrieval and consistency of observations.
- *GIS Interface* - During a survey, data are logged in a full featured GIS program allowing accurate and efficient generation of high quality maps and graphical outputs. Existing CAD and GIS data can also be incorporated into the system ensuring accuracy and comparability of data collection.


"INTEGRATED VIDEO MAPPING SYSTEM"™
DGPS Positioning
Real-time positioning data integrated with video data
and divers observations
Floating GPS
Video Data Cable
Continuous Video Data Collection
of Biological Communities
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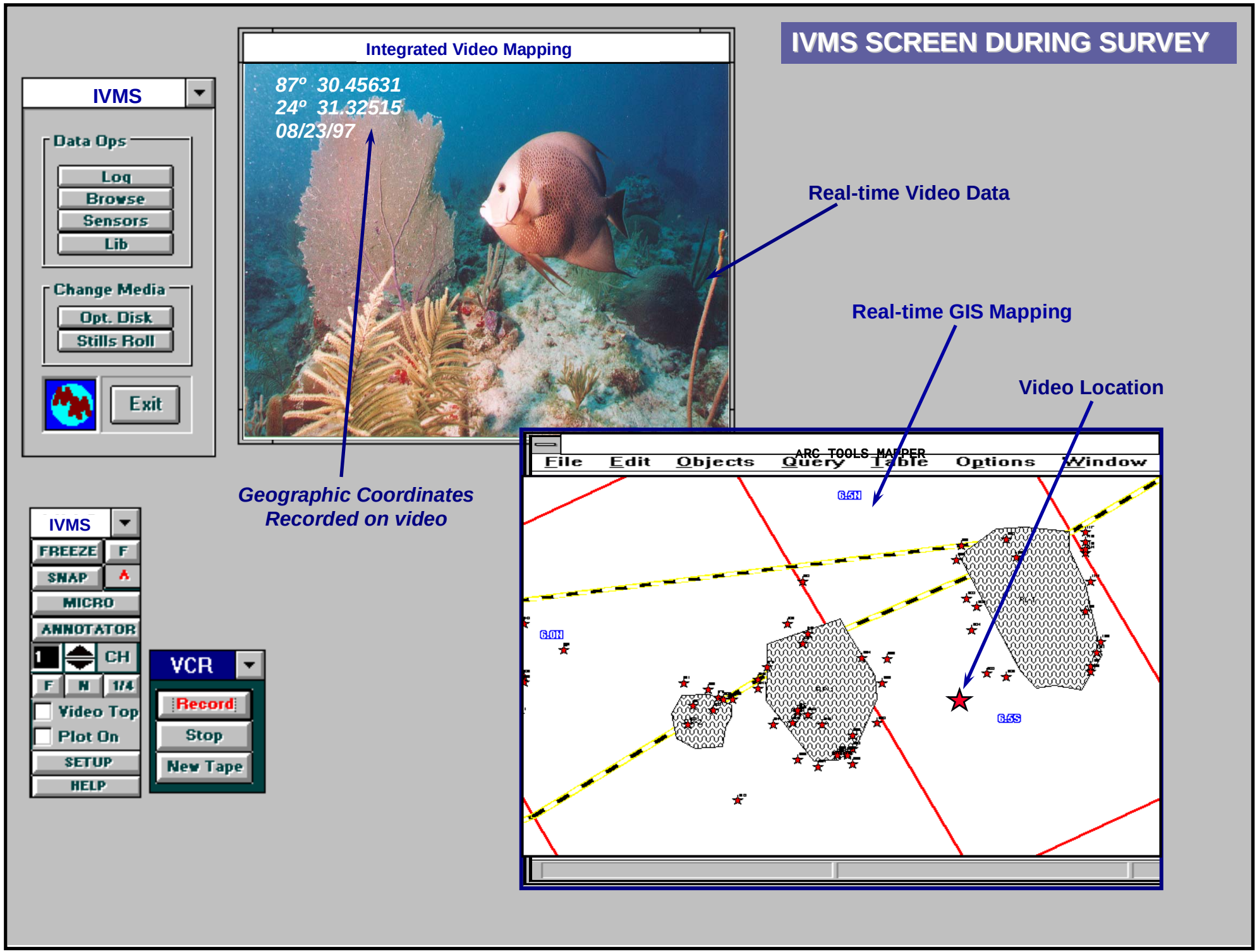
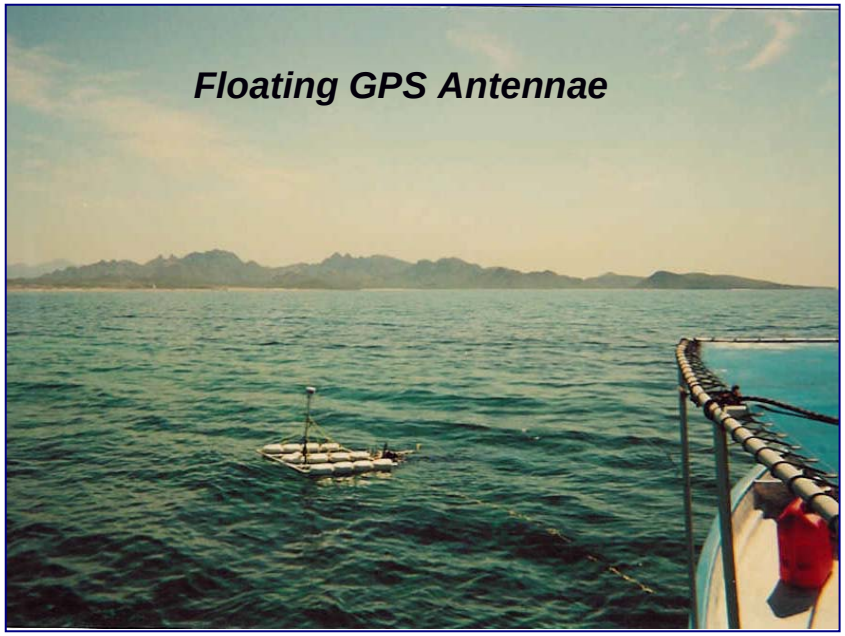
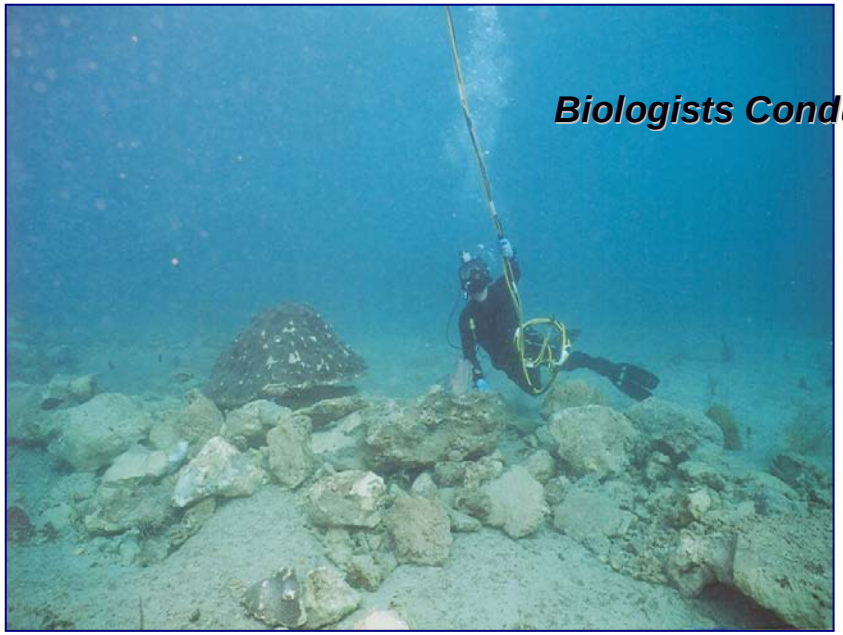
IVMS SCREEN DURING SURVEY



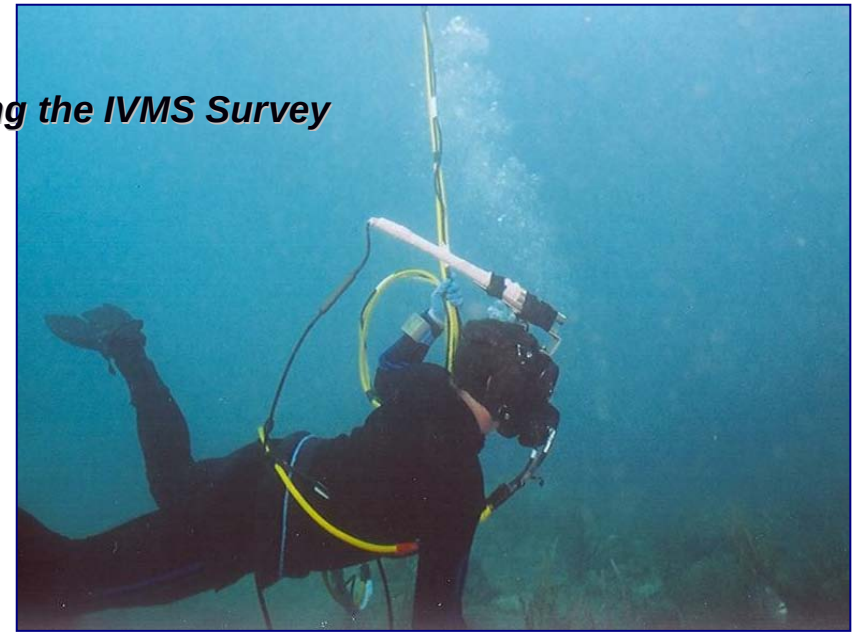
IVMS Advantages

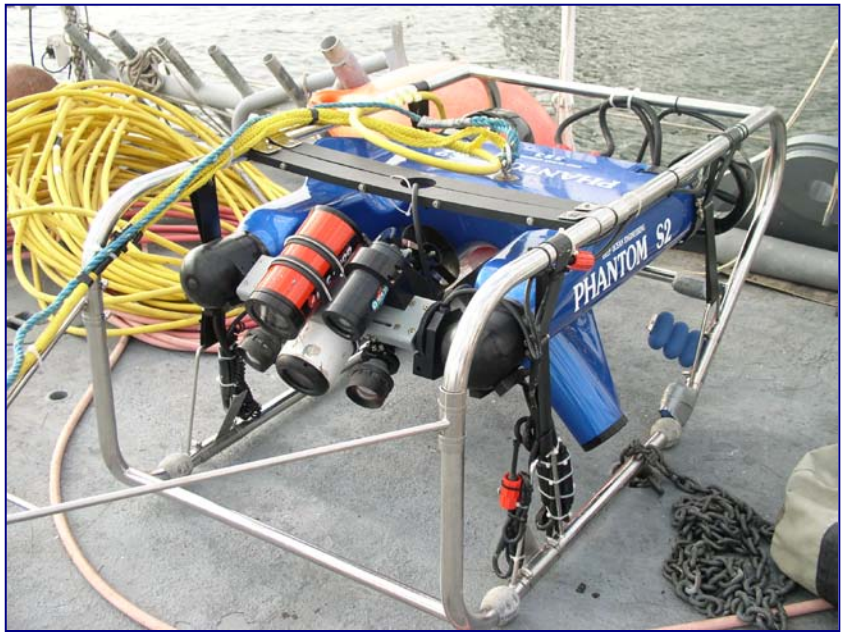
- Fast, efficient, and cost effective
- Integration of video, audio and positioning data provides technically superior, defensible data
- Permanent video documentation
- Real-time and post processing mapping for Injury categorization
- Data are useful in developing restoration options and alternatives





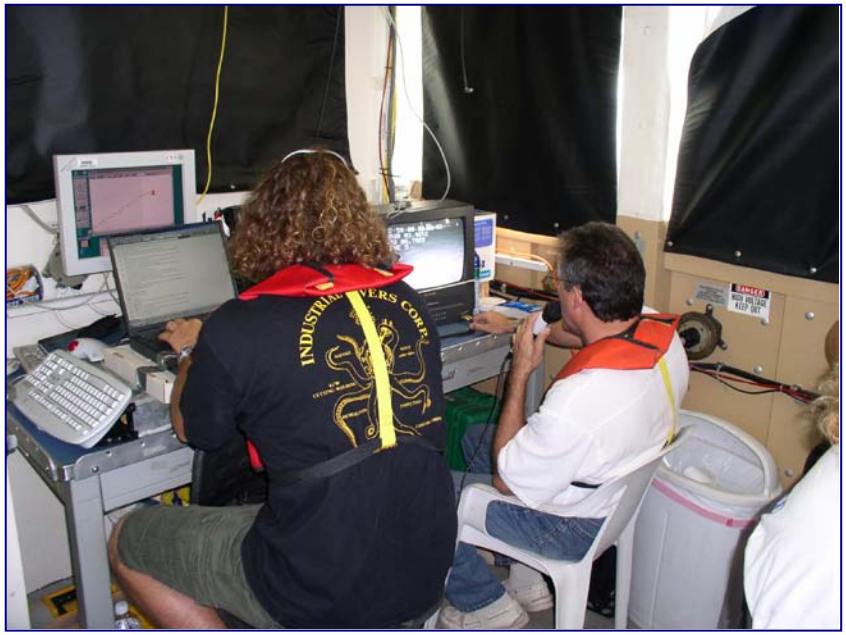
Biologists Conducting the IVMS Survey



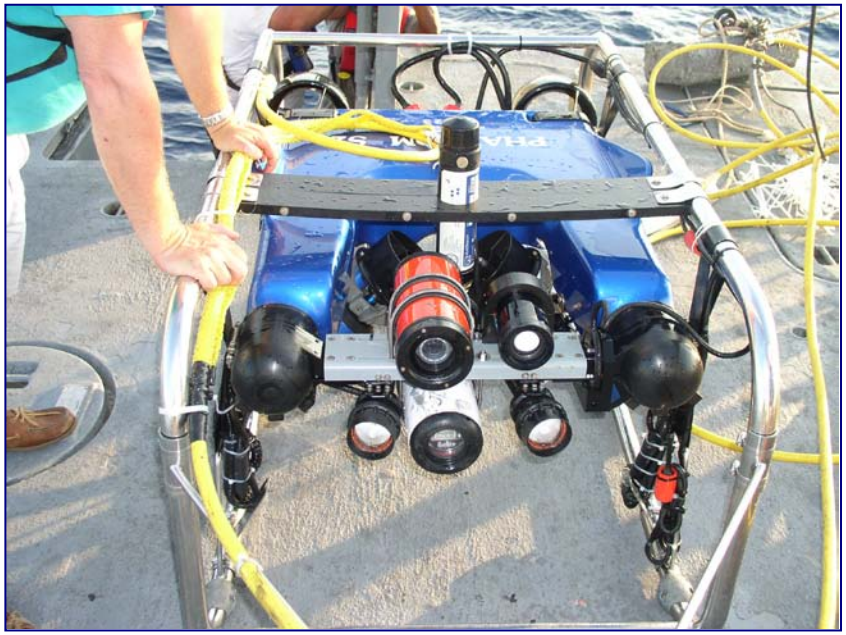


Remotely Operated Vehicle (ROV)

Large Vessel Operations



Topside IVMS Interface to ROV



ROV with Acoustic Positioning