

HD Upgrade Project - Implementation

Design Goals for HDTV Upgrade

To develop an imaging system upgrade that improves the overall quality of motion and still-based imagery on *Jason* and *Alvin* without impacting the day rate.

- Endorsed by DESSC, December 2007
- Approved for funding by NSF, Spring 2008



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Phased Implementation

- 2008: Fabrication of two HDTV cameras with zoom optics, including interface and control electronics.
- 2009: Integration & testing of HDTV cameras on *Alvin* & *Jason*



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Schedule for 2008 activities

- Optical and Sensor Path - Underway
- Electronics for *Jason* Camera - Finalized
- Electronics & Storage for *Alvin* - In Development
- Pressure Housings - To Follow



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Hybrid HDTV Camera Head

- Small, high dynamic range (12 Bit) CCD camera heads
- High-quality HDTV zoom optics
- Parallel data output pipeline
 - Full native resolution of the sensor's still image data (1920 x 1080 x 12 bit)
 - 29.97 frames per second motion video output (compatible with existing video plants on *Jason & Alvin*)



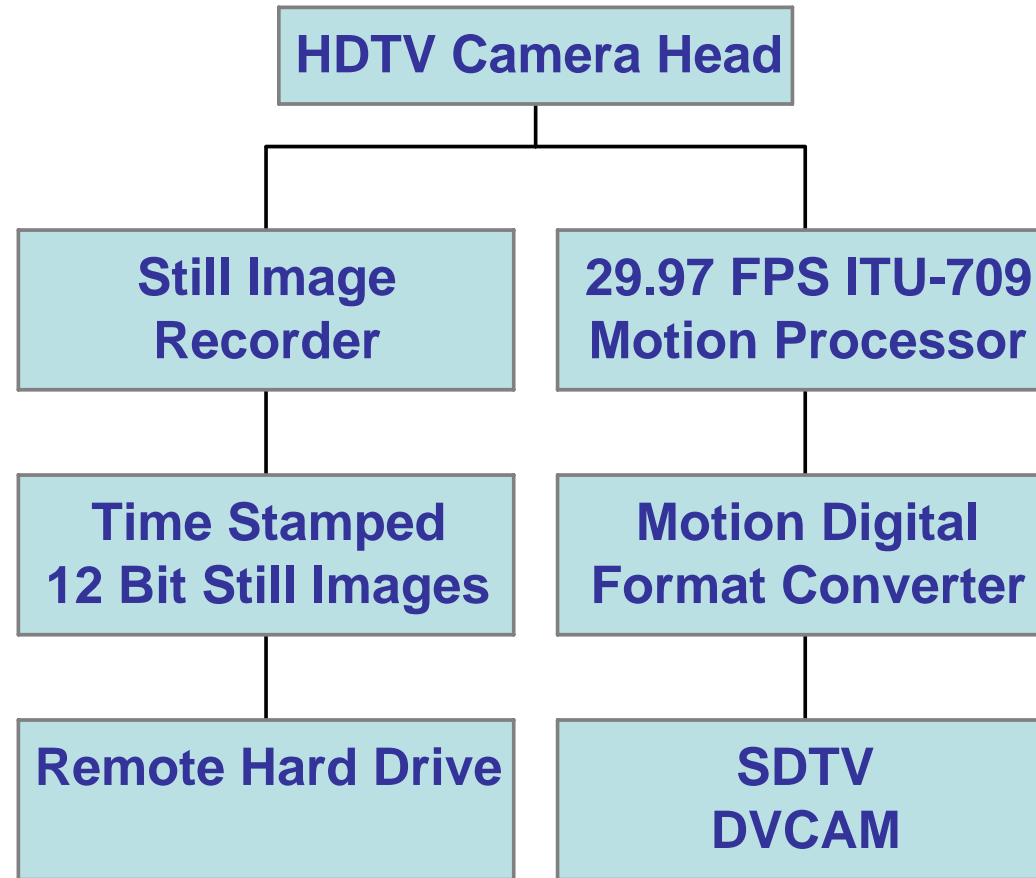
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Still Frame Acquisition

- **Interval Mode**
Set by operator such that the images are taken every n number of seconds
- **Science On-Demand Mode**
Frame acquisition initiated by science



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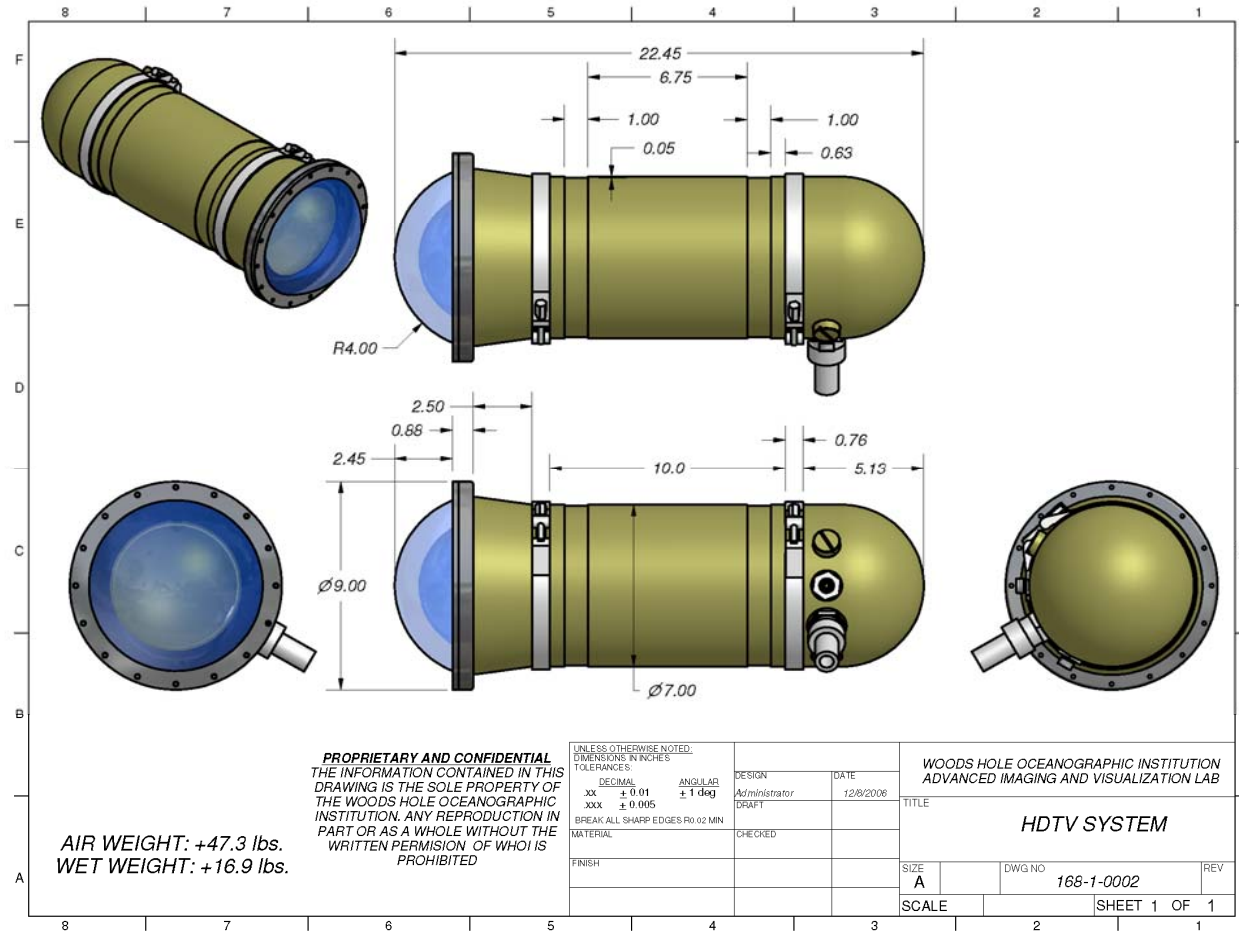
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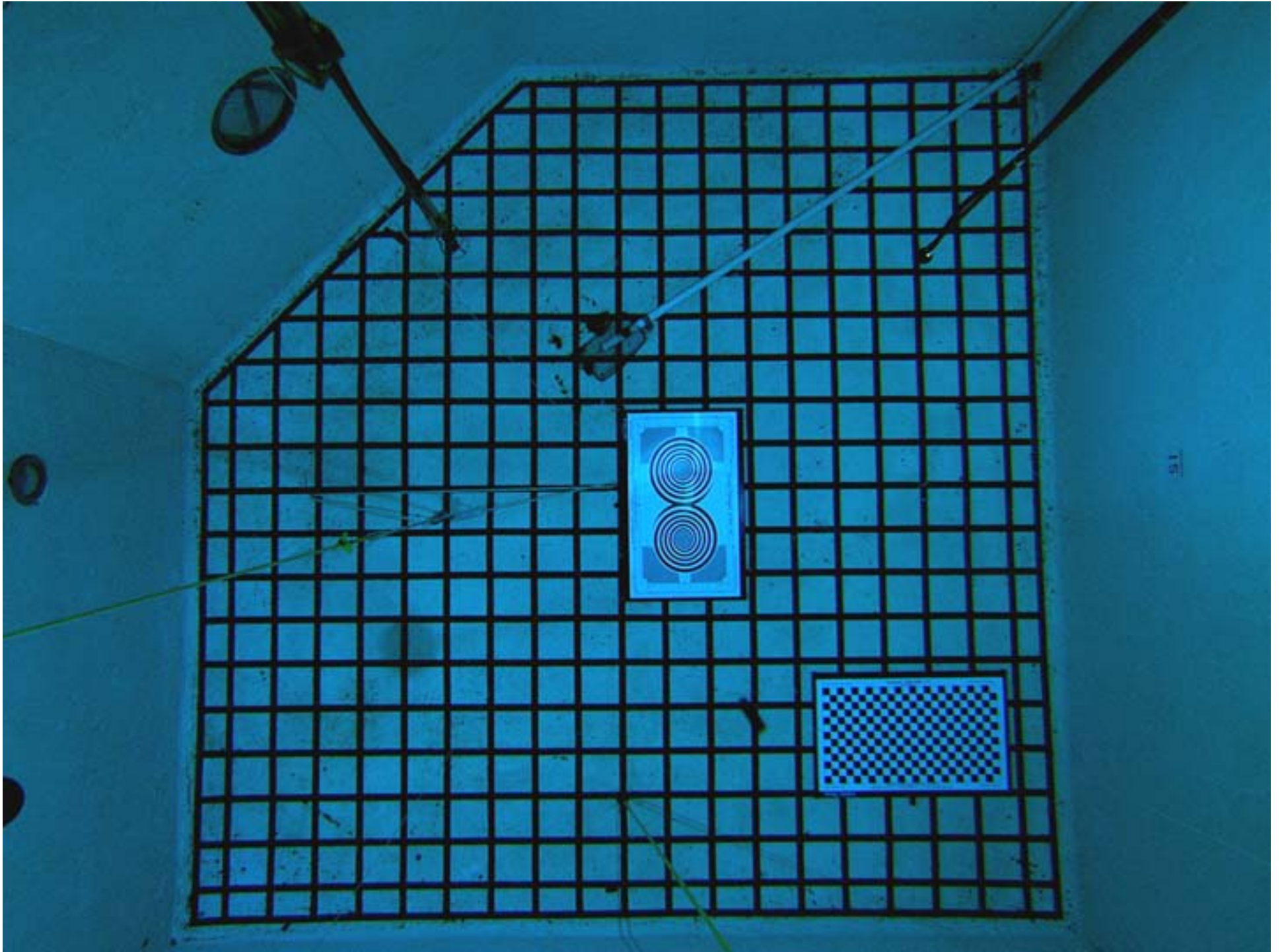
Motion Imagery Acquisition

- Flexible system design
 - supports both compressed & uncompressed HDTV recording
- Interface compatible with many COTS recording systems
- Advanced Imaging & Visualization Lab (AIVL) will provide motion recorders on a request-for-services basis



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Recommended upgrade date, Jul. 20

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