

901209 Imaging for Mid-water Autonomous Platforms Camera System Functional Requirements

22JUL13 – rev. 0 mrc

1. The AUV transecting imaging system must replicate the existing ROV based quantitative mid-water transects such that the results of the transects can be compared in a scientifically valid way.
 - a. At a minimum, maintain the current ROV based system image and recording quality.
 - b. Operate at specific depths from 50 meters to 1000 meters and maintain depth accuracy +/- one meter for a distance of 330 meters. (note: depth was increased to 1500 meters for future work).
 - c. Maintain a constant speed of about one knot relative to the water column. It's possible this speed can be increased to two knots if the image capture rate is increased to 60 frames per second.
2. Maintain the current image data processing and video annotation chain OR create a new processing chain that can be executed with a similar degree of complexity and effort.
3. Provide for the archival of the imaging data from each mission after annotation.
4. Provide for simultaneous operation with the CTD, oxygen, and fluorometer instruments of the CTD AUV.
5. Meet the weight, balance, interface and configuration requirements of a Dorado AUV payload such that extraordinary measures are not required for routine AUV operation.
6. Be installed and removed from the AUV Dorado with a minimum of effort, consistent with similar nose cone payloads.