

Tom O'Reilly Sorted By Project

300082 - DMO Support - Wave Glider

- Implemented automatic relay of messages between shore and LRAUV, via cell and acoustic modems; successfully relayed images from camera on LRAUV 'galene' to shore in support of EyeRIS project. (Week 1)
- Worked with Yui Takeshita, Ivan Masmitja, Brian Kieft and Chris Wahl to support acoustic target geolocation and tracking experiments on our Wave Glider Hotspot. Developed scripts and procedures, helped install third-party software on Hotspot to support these applications. (Week 17)
- Set up, tested and ran autonomous acoustic tracking of Spray glider by Wave Glider 'hot spot' for Takeshita's PIE coordinated sampling experiment (Week 46)

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702103.77 - HABON/FC

- Worked with team in collaboration with CENCOOS and UCSC to integrate, test, and deploy the Imaging Flow Cytobot on the latest wave power buoy (708164). IFCB was first deployed on the power buoy last summer for a few months; this time we hope the instrument will collect images for 5-6 months before recovery. Images are acquired from a 5 ml sample every 24 minutes; the attached were acquired on April 19, the day after deployment, and shows chain diatoms, dinoflagellates, and a crustacean nauplius. If you want to view all the images collected so far (and who wouldn't???), visit the IFCB data dashboard. (Week 17)

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901009 - CANON

901101 - Seafloor Mapping

- Implemented prototype 'grid viewer' C++ application to visualize sonar bathymetry data in any of many sonar formats supported by MB-System. This prototype demonstrates how many existing MB-System 'C' functions can be integrated with a more modern graphical user interface environment. (Week 46)

901513 - Targeted Sampling by Autonomous Underwater Vehicles

- Worked with Rueda and Wahl to test autonomous front-tracking application on our new SMC-2 Wave Glider computer, integrated with Wave Glider 'Tiny' on the MBARI dock; verified that the application is able to issue navigation commands and alarm messages to Tiny's CCU, and that messages are propagated through the Wave Glider network and displayed on WGMS. (Week 46)

901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach

- Held project kickoff meeting with team to review goals, milestones and schedule. Renewed commercial UAV license. (Week 1)
- Working with project team toward first over-ocean flight by the end of May. We are frequently testing our low-cost fixed-wing Believer-2 drone at an inland site near Hollister, refining vehicle design and operational procedures. Through numerous trials we can now reliably launch the drone by hand-tossing it from a slight elevation (e.g. a pickup truck bed), fly automated camera surveys, then land the vehicle via parachute or "belly landing". We're developing a water-proofing process for the drone, such that it can land in the ocean with no damage to camera payload, flight computer, and other onboard electronics, verifying in MBARI's test tank. We're now assembling Believer-3 and Believer-4, which will be waterproof and are intended to be our primary science vehicles for use over the ocean. (Week 17)
- Processing multispectral camera data acquired offshore of MBARI with Trinity VTOL drone (piloted by our NOAA collaborator JC Clark). The RedEdge-MX camera acquires images in ten spectral bands ranging from visible to near-infrared, optimized for chlorophyll detection. These same bands are acquired by satellite-borne sensors (VIIRS, MODIS, Sentinel). This flight was staged from MBARI's beach and also allowed us to determine that the drone can be kept in naked-eye visual sight out to a distance of ~1000 meters. (Week 46)

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902009 - AUV User Experience Design

902101 - LRAUV Technology Development and Fleet Operations

Out of Office

Overhead