

Waveglider-based Communications Hotspot

2015 Status Report

M B A R I



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Development efforts in 2015 focused on multiple deployments on the SV3 Waveglider as well as the implementation of more automated scripts for asset geolocation. Additionally, onboard navigation was added this year to allow the Waveglider to autonomously navigate and follow an asset without any human or shore intervention. Safety features like “no fly” zones were also added to keep the vehicle safe while it navigates autonomously.

Field Deployments

2015 saw 7 individual deployments specifically for the hotspot payload (same as 2014). All deployments this year were onboard

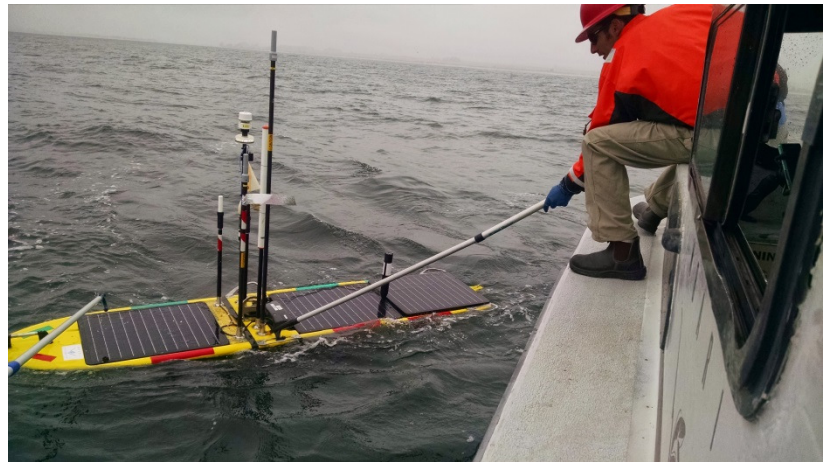


Figure 1 –SV3 “Tiny” being deployed for CANON with hotspot and OA payloads.

the SV3 Waveglider. The majority of the deployments focused on the acoustic gateway functionality of the payload. There is still an outstanding issue of data transfer over the acoustic link using protocols like zmodem. Further engineering support has been requested to address this issue to further reduce the human impact on larger data transfer from sub-sea assets.

A summary of all 2015 deployments:

<u>Deployment</u>	<u>Primary Agenda</u>
10 - Station M/MBTS (02/15)	Rover and SES geolocation and status
11 – CANON (04/15)	LRAUV tracking and data xfer
12- Station M/MBTS (06/15)	Rover and SES geolocation and status. MBTS line.
13 – Station M/MBTS (09/15)	Rover and SES geolocation and status. MBTS line.
14 – CCE (10/15)	BIN rendezvous and BEDs status
15 – Station M/MBTS (10/15)	Rover and SES geolocation and status. MBTS line.
16 – CCE (11/15)	BIN rendezvous and BEDs status

Publications and Presentations

Thomas O'Reilly, Brian Kieft, Mark Chaffey, “COMMUNICATIONS RELAY AND AUTONOMOUS TRACKING APPLICATIONS FOR WAVE GLIDER,” in OCEANS '15 MTS/IEEE, Genova, Italy, 2015.

Waveglider Applications At MBARI – Tom O'Reilly

May 25, 2015. Bremen, Germany

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Waveglider Applications At MBARI – Tom O'Reilly

May 28, 2015. Barcelona, Spain

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Waveglider Applications At MBARI – Brian Kieft

December 8, 2015. Sunnyvale, CA

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Zhang, Y, B Kieft, MJ Stanway, B Hobson, J Bellingham, R McEwen, J Ryan, TC O'Reilly, B Raanan, M Messie, JM Smith and FP Chavez. Isothermal Tracking by an Autonomous Underwater Vehicle in Drifting Mode. Under review for IEEE Journal of Oceanic Engineering