

## Submission for the Aerospace, Automotive, & Mechanics Session

Title:

The Semi-Autonomous Vehicle for Intervention Missions (SAUVIM):  
Autonomous Underwater Hovering and Navigation Updates

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Abstract:

Autonomous underwater vehicles are becoming more useful and efficient with continuous developments in the computer, electronics, and materials arenas. At the University of Hawaii at Manoa and its industry partner, Marine Autonomous Systems Engineering, we have developed and tested the Semi-Autonomous Underwater Vehicle for Intervention Missions (SAUVIM) for fully autonomous underwater hovering/station-keeping to perform autonomous navigation efforts in the ocean environment. As underwater and space have some commonalities in environment, the control system and its results are quite relevant to both technology arenas. This presentation will show several videos showing these results of SAUVIM hovering/station-keeping in extremely murky waters and performing underwater manipulation on a floating platform. This total system is a 6 DOF (degree of freedom) vehicle coupled with a 7 DOF manipulator on a 6 DOF target platform.

