The WAM-V Remote Explorer a.k.a. REx


REx is an Unmanned Surface Vehicle (USV), made by Marine Advanced Robotics in California. REx is a Wave Adaptive Modular Vehicle (WAM-V). The MIT vehicle arrived in 2014 as part of the 2014 Robot-X competition in Singapore. It continues to be used for development of sensing and autonomy algorithms and software.

XSize:	25 feet
Sensors:	Radar, Lidar, Camera, GPS, IMU
Top Speed:	10 meters / sec
Propulsion:	Two Torqedo electric motors
Software:	Sensor System ROS, Autonomy System MOOS-IvP
RExIV USV Photos:	https://oceanai.mit.edu/media/RExUSV/album
Further Info:	

Papers

2019 (5 items)

1. Michael DeFilippo, Paul Robinette, Michael Sacarny, , and Michael R. Benjamin. The remote explorer iv: An autonomous vessel for oceanographic research. In *OCEANS 2019 MTS/IEEE*, Marseille, France, June 2019. IEEE.
2. Paul Robinette, Michael Sacarny, Michael DeFilippo, Michael Novitzky, and Michael R. Benjamin. Marine perception datasets: a work in progress. In *Proceedings of the Workshop Dataset Generation and Benchmarking of SLAM Algorithms for Robotics and VR/AR at the 2019 IEEE International Conference on Robotics and Automation*, Montreal, Canada, May 2019. IEEE.
3. Paul Robinette, Michael Sacarny, Michael DeFilippo, Michael Novitzky, and Michael R. Benjamin. Dealing with the novelty of robots: observations of interactions with an autonomous surface vehicle on a recreational waterway. In *Proceedings of the Workshop Dangerous HRI: Testing Real-World Robots has Real-World Consequences ACM/IEEE International Conference on Human-Robot Interaction*, Daegu, South Korea, March 2019. ACM/IEEE.
4. Paul Robinette, Michael Sacarny, Michael DeFilippo, Michael Novitzky, and Michael R. Benjamin. Sensor evaluation for autonomous surface vehicles in inland waterways. In *OCEANS 2019 MTS/IEEE*, June 2019.
5. Paul Robinette, Michael Sacarny, Michael Novitzky, Michael R. Benjamin, and Michael DeFilippo. Robot vessels versus centuries of maritime tradition: How should robots react to authorities and

emergencies on the water? In *Proceedings of the Workshop The Dark Side of Human-Robot Interaction: Ethical Considerations and Community Guidelines for the Field of HRI ACM/IEEE International Conference on Human-Robot Interaction*, Daegu, South Korea, March 2019. ACM/IEEE.

2016 (1 item)

6. Arthur Anderson, Erin Fischell, Thom Howe, Tom Miller, Arturo Parrales-Salinas, Nick Rypkema, David Barrett, Michael Benjamin, Alex Brennen, Michael DeFillipo, John J. Leonard, Liam Paull, Henrik Schmidt, Nick Wang, and Alon Yaari. *An Overview of MIT-Olin's Approach in the AUVSI RobotX Competition*, pages 61–80. Springer International Publishing, 2016.

References

[1] Arthur Anderson, Erin Fischell, Thom Howe, Tom Miller, Arturo Parrales-Salinas, Nick Rypkema, David Barrett, Michael Benjamin, Alex Brennen, Michael DeFillipo, John J. Leonard, Liam Paull, Henrik Schmidt, Nick Wang, and Alon Yaari. *An Overview of MIT-Olin's Approach in the AUVSI RobotX Competition*, pages 61–80. Springer International Publishing, 2016.

[2] Michael DeFilippo, Paul Robinette, Michael Sacarny, , and Michael R. Benjamin. The remote explorer iv: An autonomous vessel for oceanographic research. In *OCEANS 2019 MTS/IEEE*, Marseille, France, June 2019. IEEE.

[3] Paul Robinette, Michael Sacarny, Michael DeFilippo, Michael Novitzky, and Michael R. Benjamin. Dealing with the novelty of robots: observations of interactions with an autonomous surface vehicle on a recreational waterway. In *Proceedings of the Workshop Dangerous HRI: Testing Real-World Robots has Real-World Consequences ACM/IEEE International Conference on Human-Robot Interaction*, Daegu, South Korea, March 2019. ACM/IEEE.

[4] Paul Robinette, Michael Sacarny, Michael DeFilippo, Michael Novitzky, and Michael R. Benjamin. Marine perception datasets: a work in progress. In *Proceedings of the Workshop Dataset Generation and Benchmarking of SLAM Algorithms for Robotics and VR/AR at the 2019 IEEE International Conference on Robotics and Automation*, Montreal, Canada, May 2019. IEEE.

[5] Paul Robinette, Michael Sacarny, Michael DeFilippo, Michael Novitzky, and Michael R. Benjamin. Sensor evaluation for autonomous surface vehicles in inland waterways. In *OCEANS 2019 MTS/IEEE*, June 2019.

[6] Paul Robinette, Michael Sacarny, Michael Novitzky, Michael R. Benjamin, and Michael DeFilippo. Robot vessels versus centuries of maritime tradition: How should robots react to authorities and emergencies on the water? In *Proceedings of the Workshop The Dark Side of Human-Robot Interaction: Ethical Considerations and Community Guidelines for the Field of HRI ACM/IEEE International Conference on Human-Robot Interaction*, Daegu, South Korea, March 2019. ACM/IEEE.