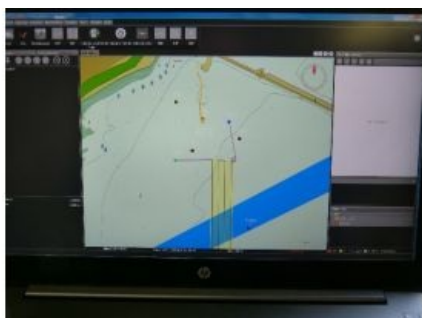# Demonstrations of ARCIMS USV with Neptune Autonomy Software

Successful sea trials have been conducted to demonstrate the integration of the ATLAS ELEKTRONIK UK (AEUK) ARCIMS unmanned surface vehicle (USV) with SeeByte's Neptune autonomy software. In challenging conditions with winds gusting up to 45mph, the ARCIMS USV was controlled by SeeByte's Neptune system in a number of autonomous missions in Portland Harbour, USA. These missions included single and multi-vehicle scenarios covering survey, target re-acquisition, survey with collision avoidance and multi-vehicle roles, demonstrating full collaboration between the ARCIMS USV and unmanned underwater vehicles (UUVs).

This series of missions demonstrated ARCIMS under Neptune control and explored the use of operational behaviours typically used in Mine Counter Measures (MCM) operations. ARCIMS' own autonomy for collision avoidance and turning under tow complimented the multi-asset and survey behaviours provided by Neptune.

This collaboration between AEUK and SeeByte offers customers flexibility in how they plan and operate unmanned surface vehicles in MCM roles.

ARCIMS is an unmanned surface vessel designed specifically for multi-role applications including MCM, Anti-Submarine Warfare (ASW), Hydrography and Security. ARCIMS hosts the AEUK autonomy engine developed for towing mission systems and includes collision avoidance capabilities.

SeeByte's smart software integrated onto the ARCIMS USV offers adaptive autonomy. Neptune is an adaptive planning tool for optimising the execution of UxV operations. It supports high-level, goal-based mission descriptions and allows the matching of mission requirements against vehicle capabilities. Neptune also includes behaviours capable of adapting the mission based on changes in the environment, assets and mission objectives; benefits which will be key in future unmanned operations.

https://www.hydro-international.com/content/news/demonstrations-of-arcims-usv-with-neptune-autonomy-software