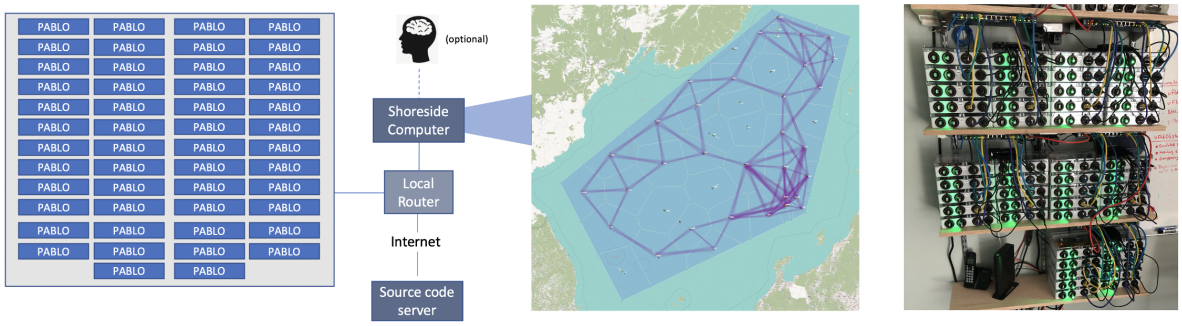
Multi-Agent Tactical Autonomy Simulation Cluster (MTASC)

MTASC is a collection of physically co-located computers residing on a single local area network for simulating large sets of autonomous agents or vehicles. The choice of these computers, in this configuration was chosen for two reasons. (1) These systems are very close to operation of actual marine robots in a distributed multi-vehicle mission. Each node in the MTASC cluster can be directly dropped into any one of the MIT small autonomous surface craft as its autonomy computer. Operation in simulation of the MTASC cluster on a local network requires nearly all the same networking, version control, monitoring, and command-and-control tools required for operating physically deployed robots on the water. The MTASC not only enables us to simulate very large missions much faster than real time, but it also prepares our lab and students with the skills for managing large numbers of physical robots in the field. (2) The second reason is security. Although a similar multi-vehicle simulation could be accomplished using containers and procuring network computing services, by using the MTASC, all software remains on the SD cards of each node. Proprietary or classified work may be easily managed in a version of the MTASC removed from the Internet.



Status:	Ongoing since August 2019
Sponsor(s):	MIT Lincoln Laboratory
People:	Mike Benjamin (PI), Tyler Paine
Software:	MOOS-IvP public codebase, MOOS-IvP Swarm Toolbox

Recent Publications

2020 (1 item)

1. Michael Benjamin. Multi-agent tactical autonomy simulation cluster (mtasc). 2020 End of Year Report, December 2020.

References

[1] Michael Benjamin. Multi-agent tactical autonomy simulation cluster (mtasc). 2020 End of Year Report, December 2020.