Autonomous Systems (e.g. Vehicles & Robots)

Why is it important?

Resources on land will eventually be depleted. But there are abundant of resources in deep sea and ocean, e.g. oil, minerals and metals such as gold, copper, lead, zinc, manganese, rare earth oxides, etc to meet our needs. Hence, it is crucial for Singapore to develop deep ocean technology.

Core Research Areas:

Mobility; Sensing and Perception; Environmental Map Building, Localization and Tracking; Collaborative Autonomous Behavior; Navigation; Control, Path Planning and Mission Control; Large Scale Mapping and Persistent Autonomy; Interpreting Complex 2D/3D Data Obtained from Sonar Arrays, Light Detection And Ranging (LIDAR); RADAR; and Stereo and Panoramic Vision.

Achievements:

Core competence in autonomous intelligent systems; Developed a range of indoor, outdoor, surface and underwater autonomous vehicles; Strong links with DSO, MPA, DSTA, MIT, SMART, and RIs and industries; Over 20 publications in top-tier journals; Funding of about $5M; Graduated more than 10 PhD students.