

REMOTE ENVIRONMENTAL SENSING OF MARINE ECOSYSTEMS USING UNDERSEA AND ABOVE-WATER PLATFORMS

anticipate responses will involve optical sensing technologies; however, we are particularly interested in integrated, multi-discipline, and applied technology approaches that further advance development of recent Australian innovations in marine environmental science.

Problem

Rapidly interpreting changes across Australia's diverse marine environments is of critical importance to regional security. Innovative technologies for sensing of sub- and above-surface ecology, including new ways to monitor physical, chemical, biological variables, are sought after to better understand the diverse maritime environments in which the Australian Defence Force operates.

Need and relevance to Defence

Emerging Australian technologies that integrate enhanced analytical capabilities enhances Defence's understanding of environmental dynamics in the water column. Advances in optics, hyperspectral image analysis, and sensor technology are capable of collecting environmental intelligence at frequencies approaching real time. Modular technologies compatible with Defence platforms, including aerial drones and remote underwater vehicles; as well fixed location sensors integrated on buoys and near-shore infrastructure are of particular interest.

Research question

What novel techniques and technology platforms are being developed in Australia that are capable of characterising environmental dynamics in the water column?

Expected outcomes

We are seeking Australian technology to support a proof-of-concept approach to real-time monitoring of environmental dynamics in diverse Australian maritime ecosystems.

Methodology/approach

We are seeking advice from respondents to the problem statement on suitable methods and components for developing remote sensing devices that provide any of the desired capabilities outlined above. We