



iDEX Innovations for
Defence Excellence

PM Awardee

DEFENCE INNOVATION ORGANISATION
(Under Aegis of Department of Defence Production)

Ministry of Defence, Government of India
New Delhi -110002

**Summary of INDUS-X Mutual Promotion of
Advanced Collaborative Technologies (IMPACT)
Challenges**

S. No.	Name of Agency	Number of Problem Statements
1	Indian Navy	1
2	Indian Coast Guard	1
	Total	2

IMPACT (INDUS X) Problem Statement

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INDUS-X JOINT IMPACT CHALLENGES

Problem Statement (IMPACT) – 1 (Indian Navy)

Organization Name	Indian Navy
Problem Statement/ Challenge title	Undersea Communications
Challenge domain	Communication Technology for Naval Application
Challenge brief/definition	Communicating with persons and vessels underwater is an immensely difficult problem. Acoustic communications attenuate within 1-2 kilometers, and trailing a surface buoy with an antenna is infeasible and indefensible in many instances. We are seeking new hardware and software technologies that can support high bandwidth underwater communications, real-time signal processing and error correction, and information compression.

Problem Statement (IMPACT) – 2 (Indian Coast Guard)

Organization Name	Indian Coast Guard
Problem Statement/ Challenge title	Installation of Oil Spill Detection (OSD) System and integration with sensor network
Challenge domain	Sensor Technology, Oil Spill Detection systems
Challenge brief/definition	The Indian Coast Guard and US Department of Defense are seeking multi-sensor fusion algorithms to detect oil spills on the surface of the ocean in near-real-time. The ICG and DOD utilize a variety of sensors for intelligence, surveillance, and reconnaissance of coastlines to protect from multiple threats. Using these existing sensor streams, the ICG and DOD aim to field machine learning algorithms that can identify, characterize, and geolocate oil spills on the surface of the ocean in all lighting and weather conditions.