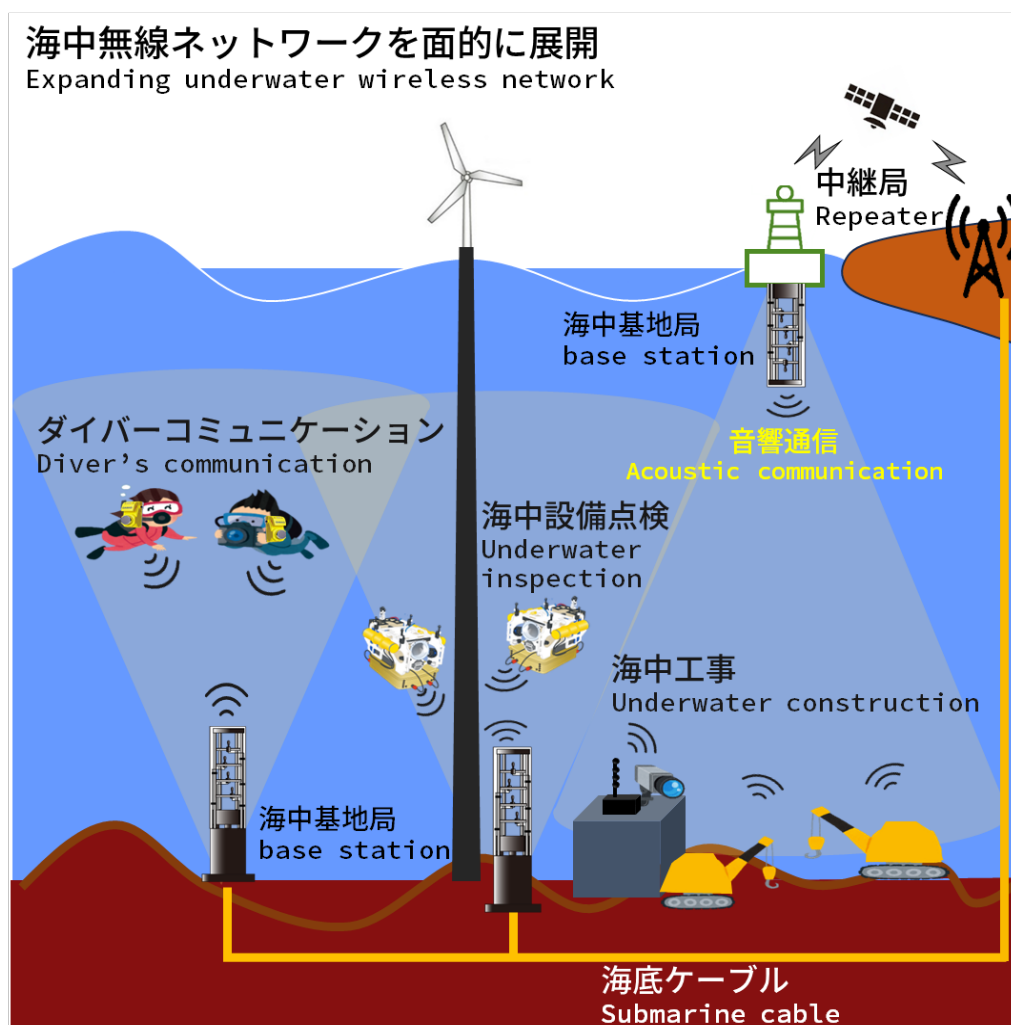


Underwater acoustic communication for underwater wireless network

The underwater wireless network enables
real-time underwater communication

#Productivity Improvement #Customer Experience Value Creation



///Technical Issue

Our challenge is to improve system throughput when accommodating multiple users underwater, where frequency resources are limited and it is difficult to use sound waves above several 100 kHz.

///Research Goal

Establishing multi-cell underwater communication systems with system capacity of over 1 Mbits/sec per cell concurrently connecting more than 10 users by multi-user MIMO with asynchronous interference cancellation.

---Technology

We study multi-user demultiplexing techniques with asynchronous interference cancellation for compensating inter-user interference.

---Novelty

By applying this technology, packet reception is possible even when collisions occur, improving system throughput when accommodating multiple users.

---Applicable Business

Our technology can be applied for communication between divers (service to be provided around 2027) and remote control of underwater robots to improve the efficiency of port construction in the marine construction field. (service to be provided around 2030). Our technology will bring a new market for underwater wireless communication services, and the market size is expected to reach 109 billion yen (including overseas markets) in 2030.