



ARCHEOSUB

Surveying, conservation, protection and valorization of
underwater cultural heritage

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MALTA EU2017

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ARCHEOSUB – Who

Project Coordinator



SAPIENZA
UNIVERSITÀ DI ROMA



UNIVERSITÀ
DEGLI STUDI
FIRENZE
SPIN-OFF APPROVATO

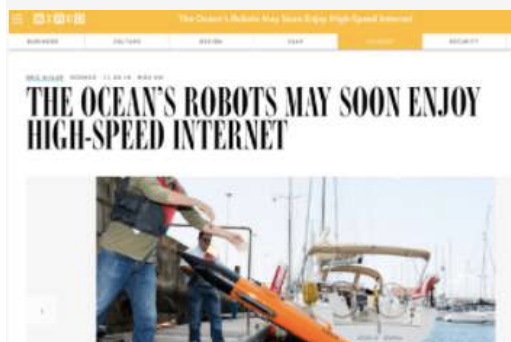
Building on:

sunrise



ARROWS

ARCHAEOLOGICAL ROBOT SYSTEMS FOR THE WORLD'S SEAS



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ARCHEOSUB – How

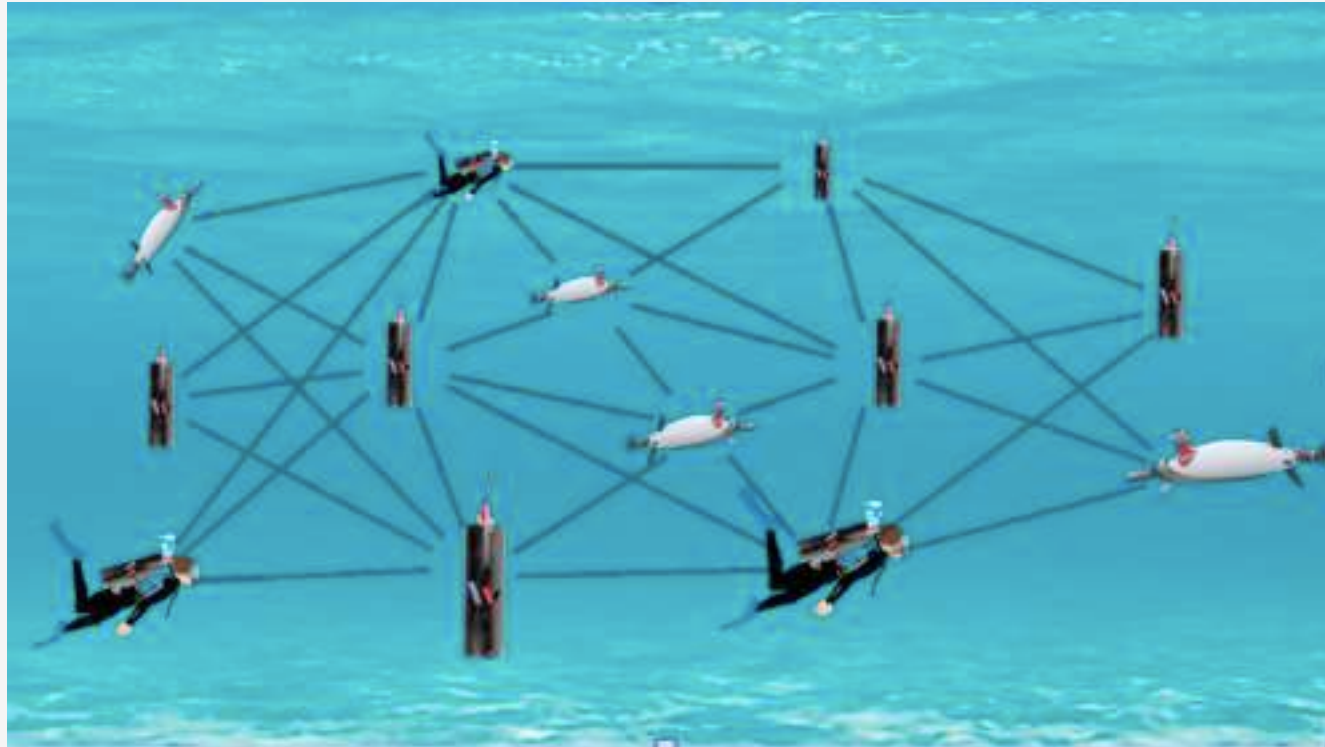
Internet of Underwater Things



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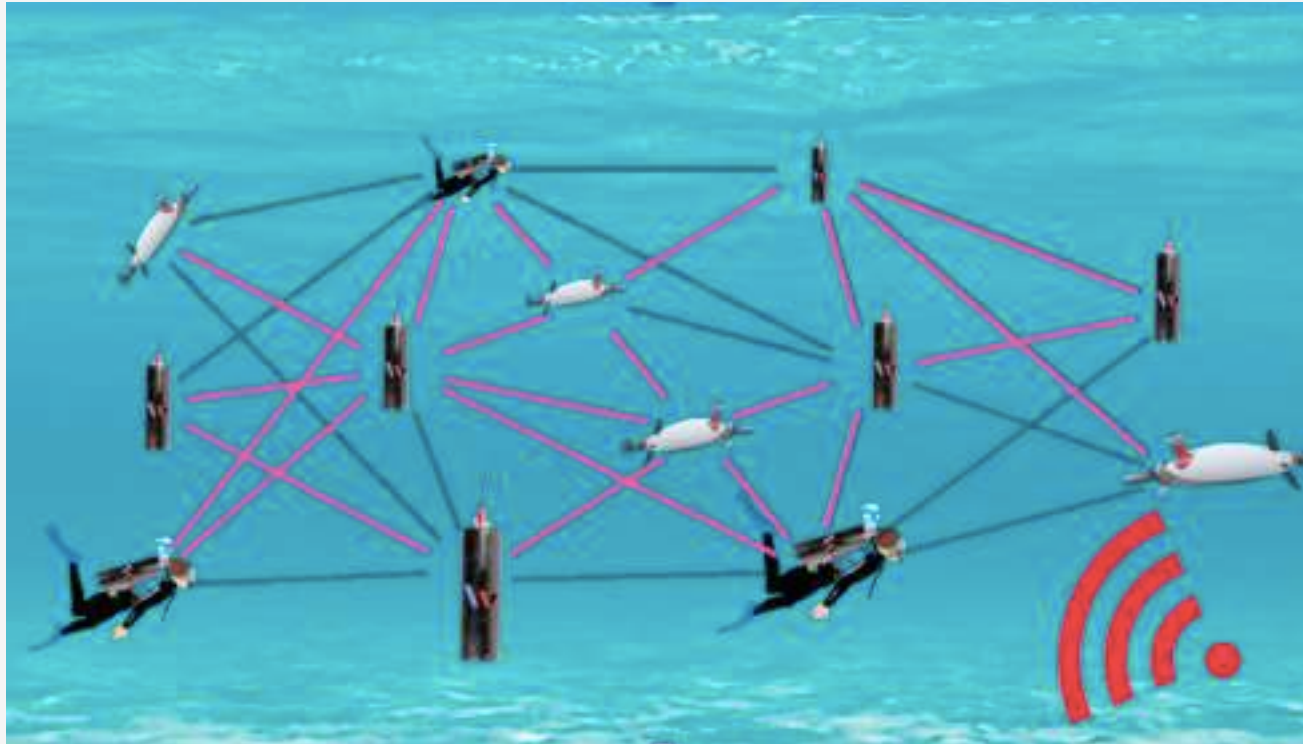
ARCHEOSUB – How

Internet of Underwater Things



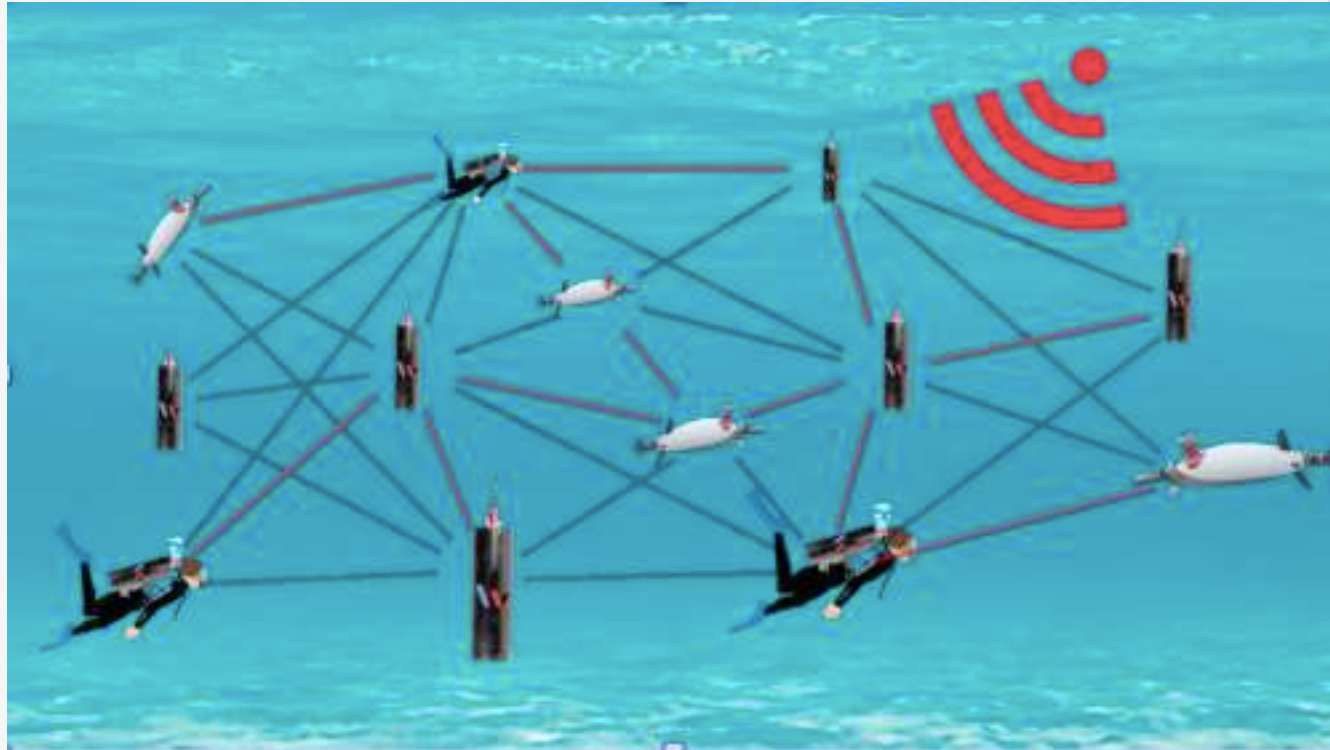
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Internet of Underwater Things



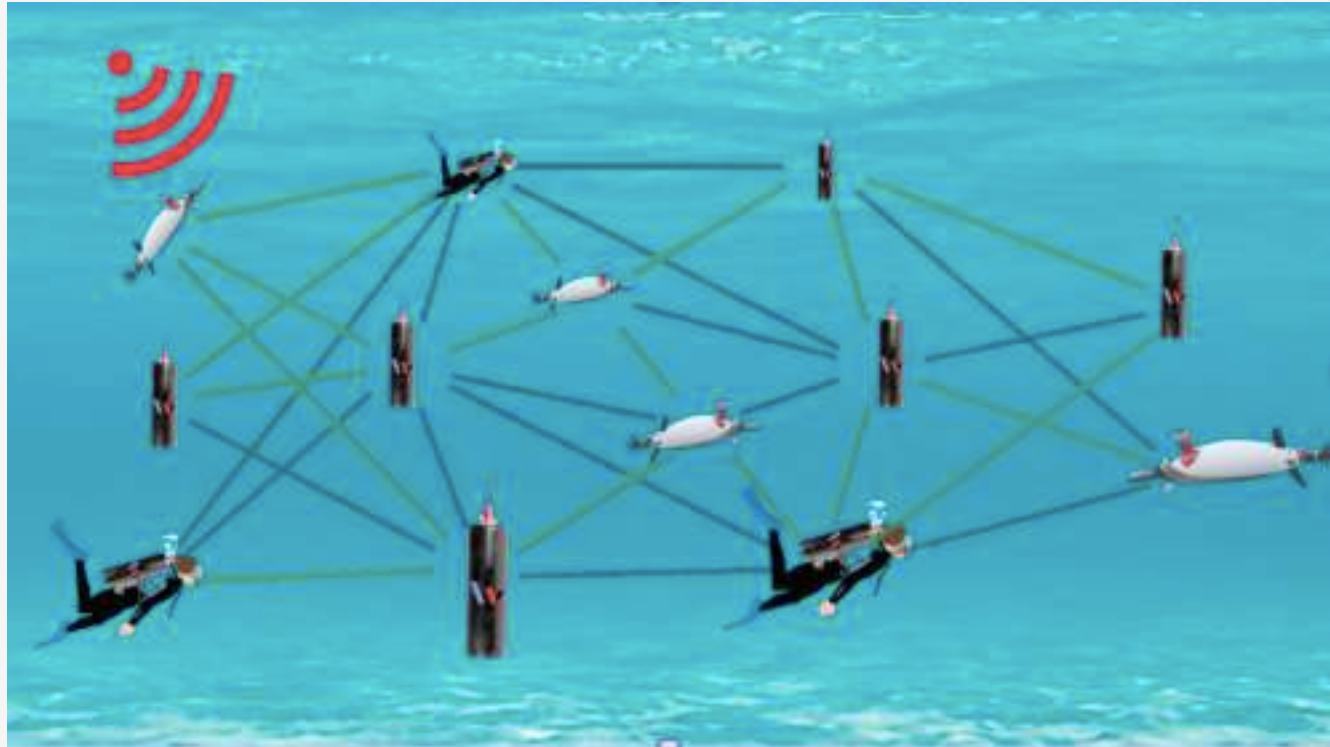
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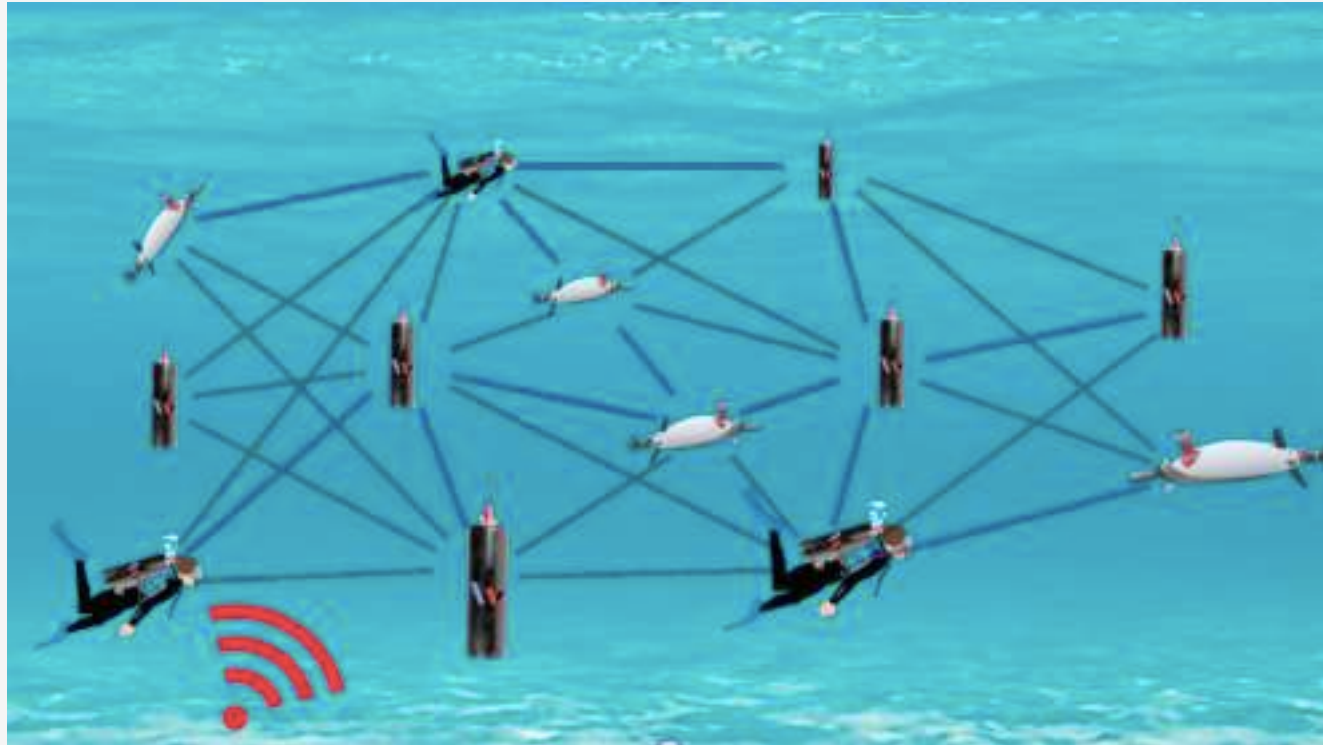
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Internet of Underwater Things



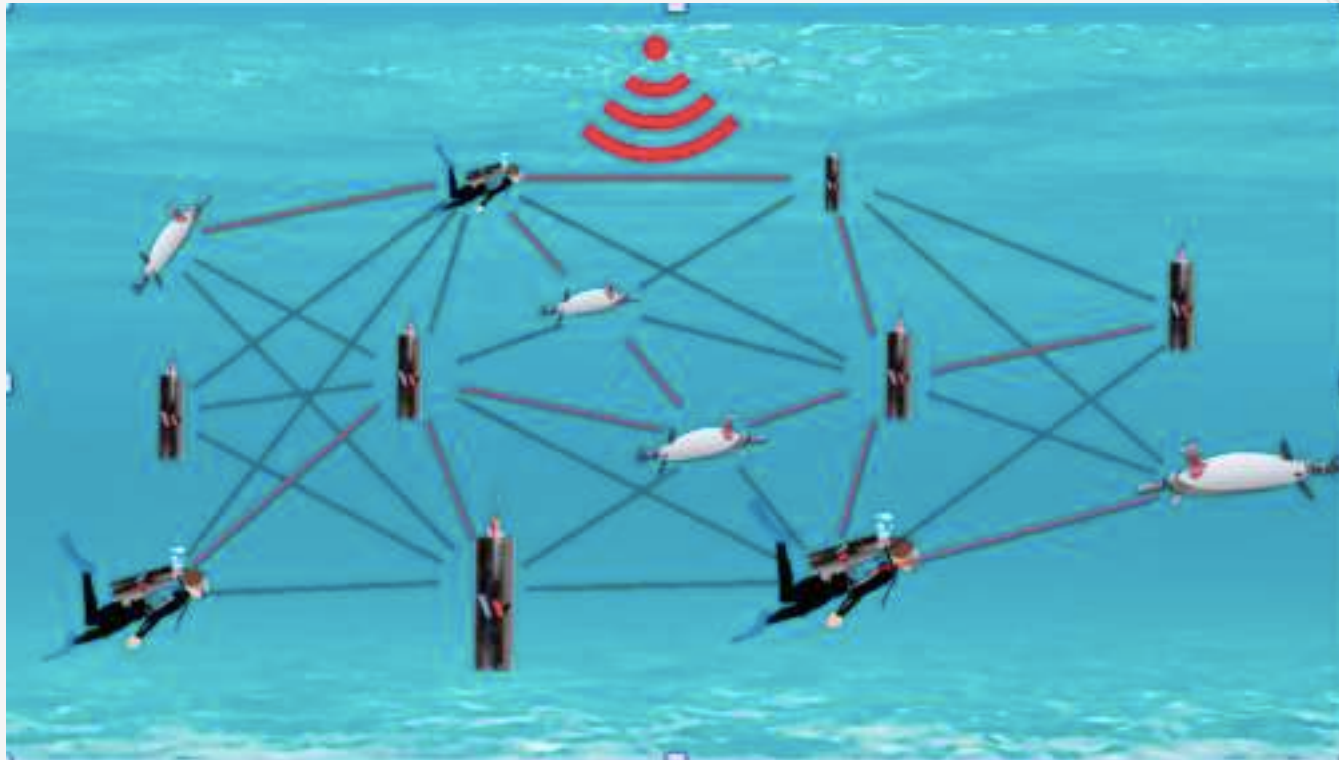
ARCHEOSUB – How

Internet of Underwater Things



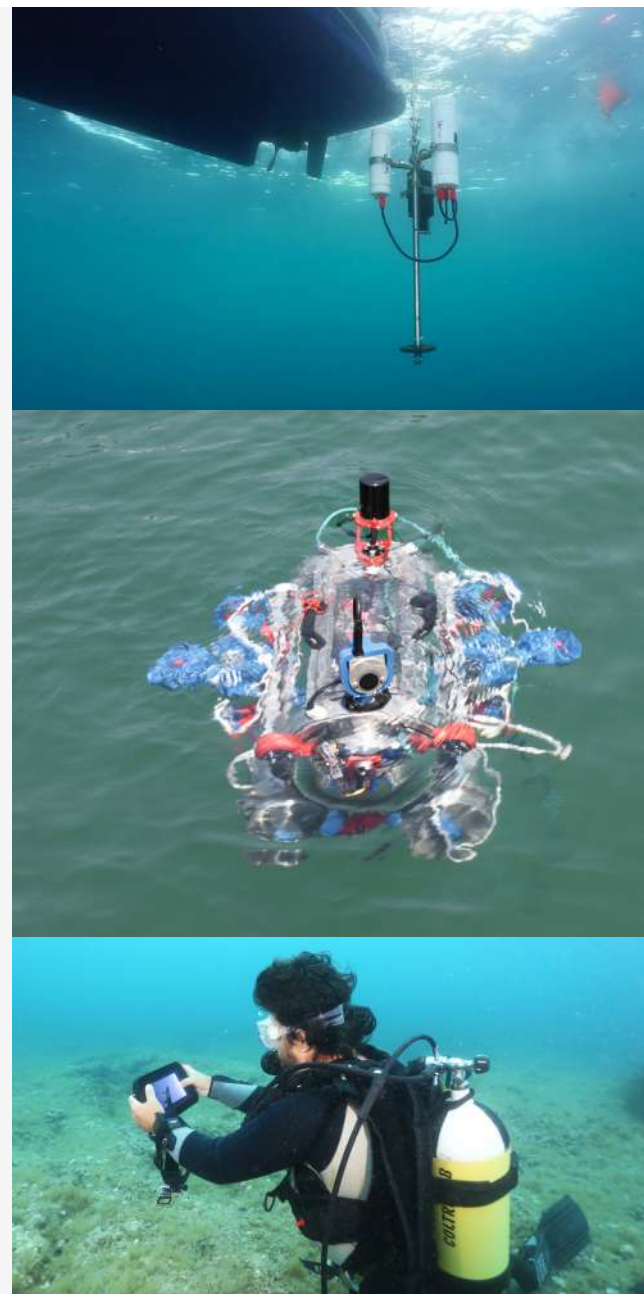
ARCHEOSUB – How

Internet of Underwater Things



ARCHEOSUB - Why

- +1000 underwater archaeological sites offshore the Italian coast (source: Archeomar project)
 - Many more across the Mediterranean basin
 - UNESCO Convention on the protection of the Underwater Cultural Heritage recommends in situ conservation
 - Demanding for surveillance systems, monitoring of conservation status
 - Posing the issue of how to combine protection of such sites with their valorization (also in line with BLUEMED Strategic Research and Innovation Agenda)
 - High interest in valorization of such sites for touristic purposes
- Need for turn-key low cost, simple to use, unintrusive solutions



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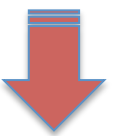


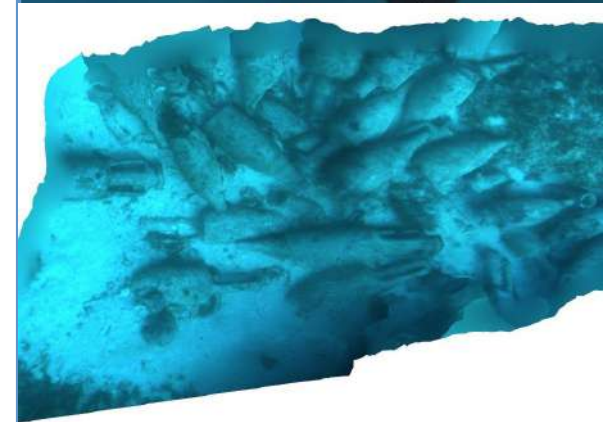
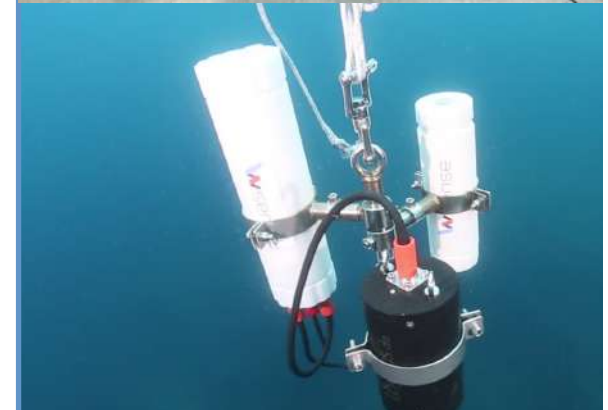
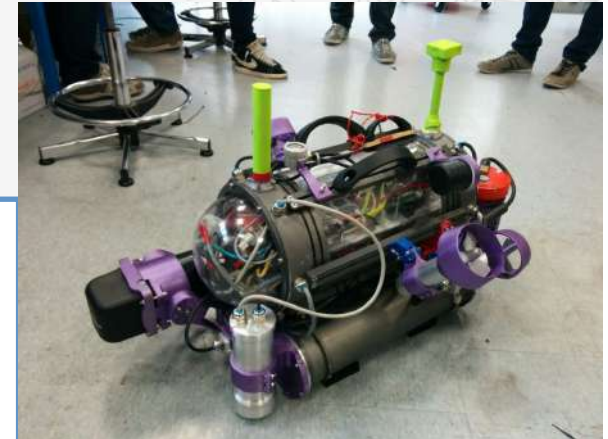
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ARCHEOSUB – What

- **Low cost underwater AUV supporting archaeologists** across all phases of operation
 - **Localization system for divers** and AUV navigation
 - Acoustic **real-time transmission of AUV site acquisitions and of data from underwater cameras**
 - Empowered by innovative “Underwater Internet of Things technologies”
 - Extensive field tests in Populonia Baratti, Pyrgi, Caesarea
- 
- **Expected P&S:**
 - Services to support underwater archaeologists
 - Underwater Surveillance Systems
 - Itineraries for divers



Opportunities and Challenges

- **Underwater Internet [of Things]** allows to interconnect underwater sensors, underwater robotics technologies, **enabling real-time data, reliable, secure information exchange**, providing an **unprecedented opportunity to map, know, understand, sustainably exploit the marine environments**
- Granularity (in time and space) of water column data **not yet at the level to speak about “Big Data” on which to develop cutting edge applications and services (at least for requirements of many areas)**
 - It is not only a cost issue, it requires a re-thinking of how we monitor the underwater world and synergies between all existing cutting edge technologies/systems, visionary innovators as well as visionary scientists (oceanographers, marine biologists, marine ecologists, experts of geochemistry, geophysics,...)
- **Barriers: Legacy vs. more open platforms (in the good direction but still much to do); Interoperability (first standards/solutions); Cost reduction of sensors/payloads; How to ensure ownership/tracking of use of data.**

QUESTIONS ?



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