Sustainable Blue Economy Partnership

ROMEO

smaRt Online Multisensory systEm for microplastic quantificatiOn and water quality assessment

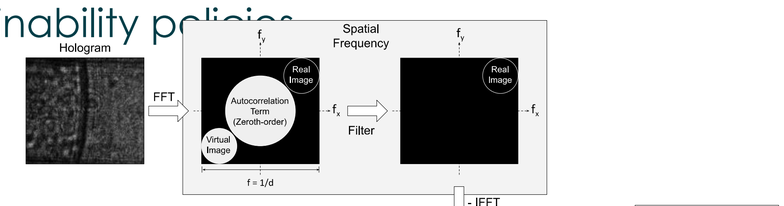
www.romeo-project.eu

Microplastics and water pollution severely impact marine ecosystems, biodiversity, and human health. Current monitoring methods are slow, manual, and dependent on laboratory testing-delaying timely action.

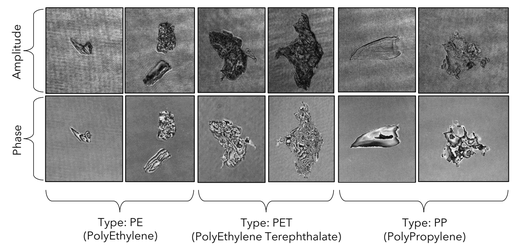
ROMEO delivers an integrated, real-time system for water quality assessment.
It combines digital holographic microscopy, environmental sensors, and AI analytics to automatically detect and classify microplastics and diatoms.

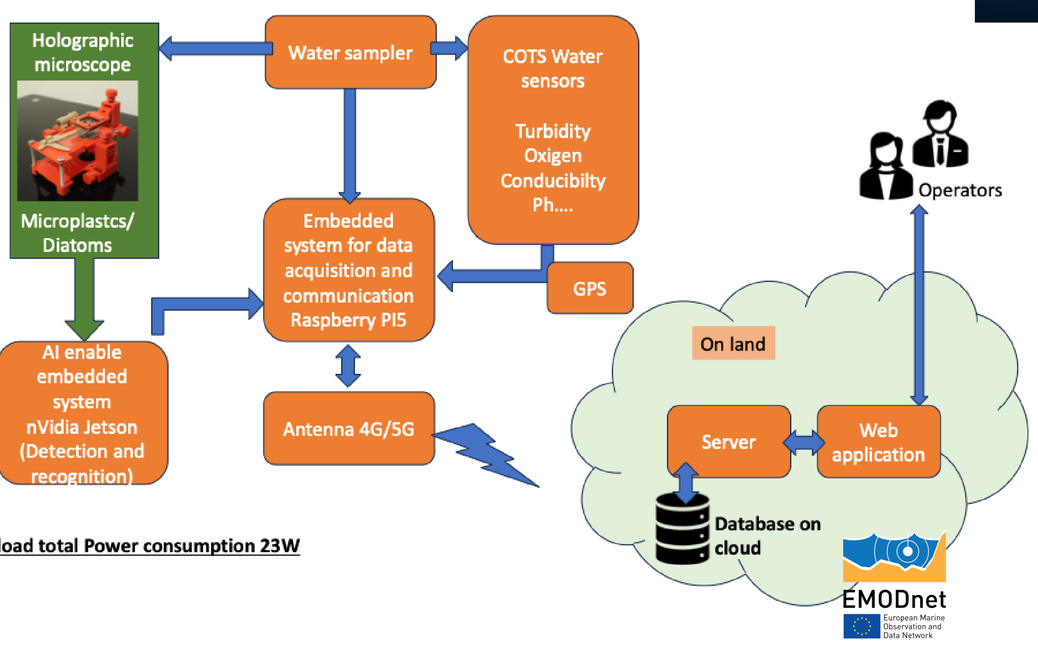
A dedicated digital twin platform simulates and predicts ecosystem conditions, enhancing decision-making for researchers, policymakers, and industry.

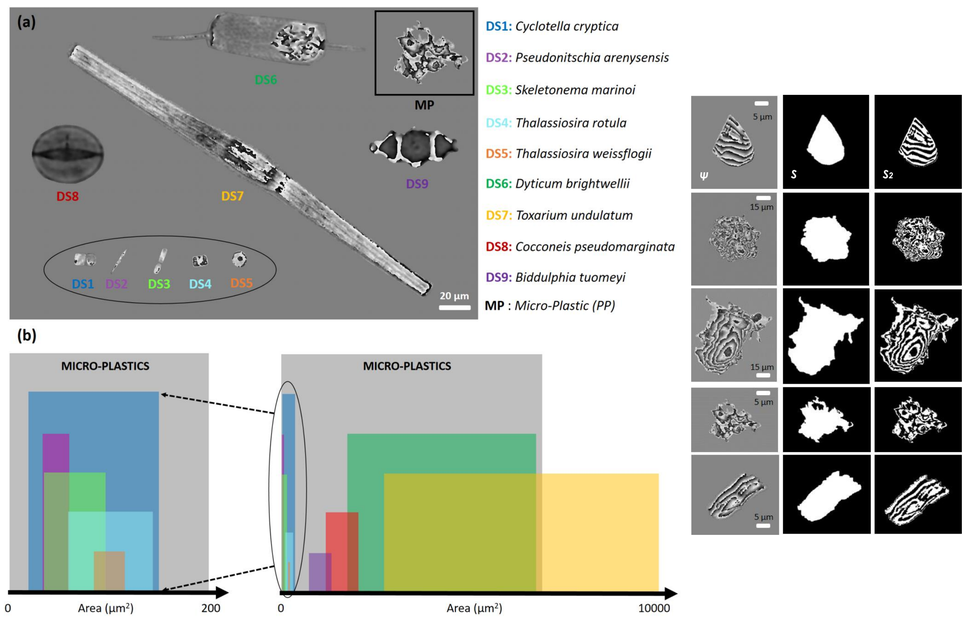
- ✓ Real-time multisensory water quality monitoring
- ✓ AI-based identification of microplastics & diatoms
- ✓ Digital twin for simulation and prediction
- ✓ Deployment on autonomous solar-powered sailboats
- ✓ Open data supporting EU marine and sustainability policies



Installed on autonomous, solar-powered sailboats enables continuous, georeferenced monitoring o aquatic environments.







To fundamentally change the paradigm of aquatic monitoring

The Core Idea: "Any sensor, anytime, anywhere."

ROMEO RESEARCH PROJECT

Instituto de Computação

İSTANBUL ÜNİVERSİTESİ 1453

Beia CERCETARE

evvbio diagnostics DETECT EVERYWHERE

CONSORZIO DI GESTIONE AREA MARINA PROTETTA PORTO CESAREO

CNR ISASI
Istituto di Scienze Applicate e Sistemi Intelligenti "Eduardo Caianiello"

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