

Poster 2.11.

BathyBot – the deep-sea crawler to see the unseen of the NW Mediterranean Sea

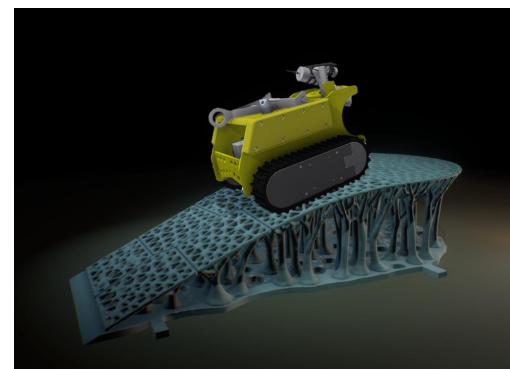
C. Tamburini*, C. Gojak, S. Martini, J. Aguzzi, A. Arnaubec, L. Barnes-Davin, K. Bernardet, C. Blanpain, O. Bocquet, V. Bertin, P. Chevaldonné, P. Coyle, V. Ciausu, P. Cuny, X. Durrieu de Madron, M. Garel, L. Le Díreach, E. Rouanet, C. Grenz, Z. Hafidi, D. Mallarino, P. Lamare, C. Laus, J. Lecubin, D. Lefèvre, N. Lebris, K. Mahiouz, S. Marini, M. Matabos, C. Militon, D. Nerini, T. Perez, L. Picheral, M. Picheral, R. Piasco, C. Rabouille, J. Sarrazin, D. Thibault, L. Thomsen

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Context

Understanding the distribution, the abundance and dynamics of particulate organic matter and living organisms in the pelagic environment, both in time and space, is crucial to describe and predict the export and sequestration of biogenic carbon in the deep-ocean environment. In fact, this organic matter will partially be sequestered on millenary time scales in the deep ocean, with a strong impact on global change effects.



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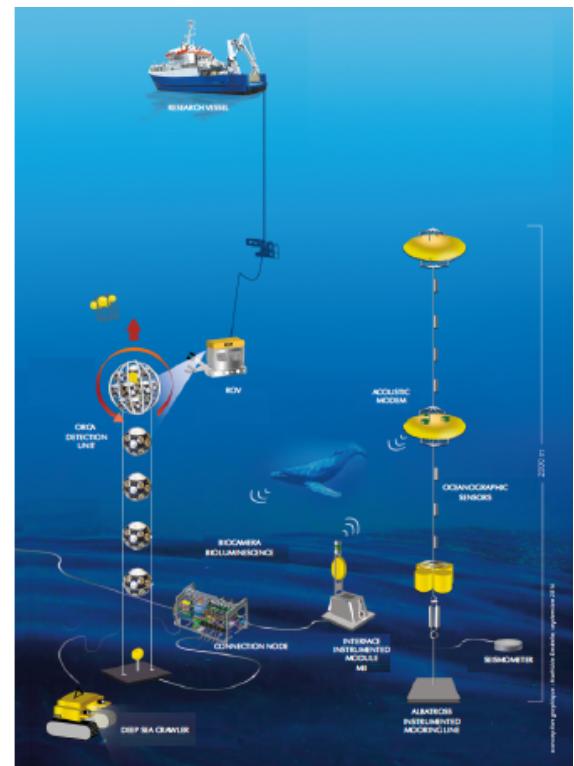


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Where?

BathyBot, a multi-instrumented Internet Operated Vehicle (IOV), will be deployed at 2500m depth at 40 km off Toulon in the framework of EMSO ERIC infrastructural initiatives. Its deployment will complement the ALBATROSS-MII pelagic instrumented line (**see Poster 1.3**). BathyBot will allow acquisitions in real-time to observe the deep marine environment.



Methods

On BathyBot:

- Microcat SBE37 SMP
- AQUADOPP 2MHz
- Seapoint turbidity meter
- Seapoint chlorophyll sensor
- Sony SNC-VB770 HD camera (Sony SEL24F18 lens)



Other sensors implemented on the BathyBot's docking station (DT INSU concept) are:

- ADCP
- UVP6-LP (new underwater vision profiler) provided by LOV (M. & L. Picheral)

Futur developments (2020-2021):

- Inclusion of an oxygen benthic microprofiler - LSCE

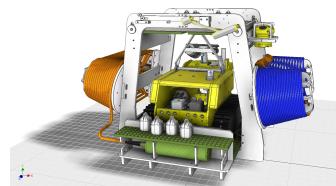
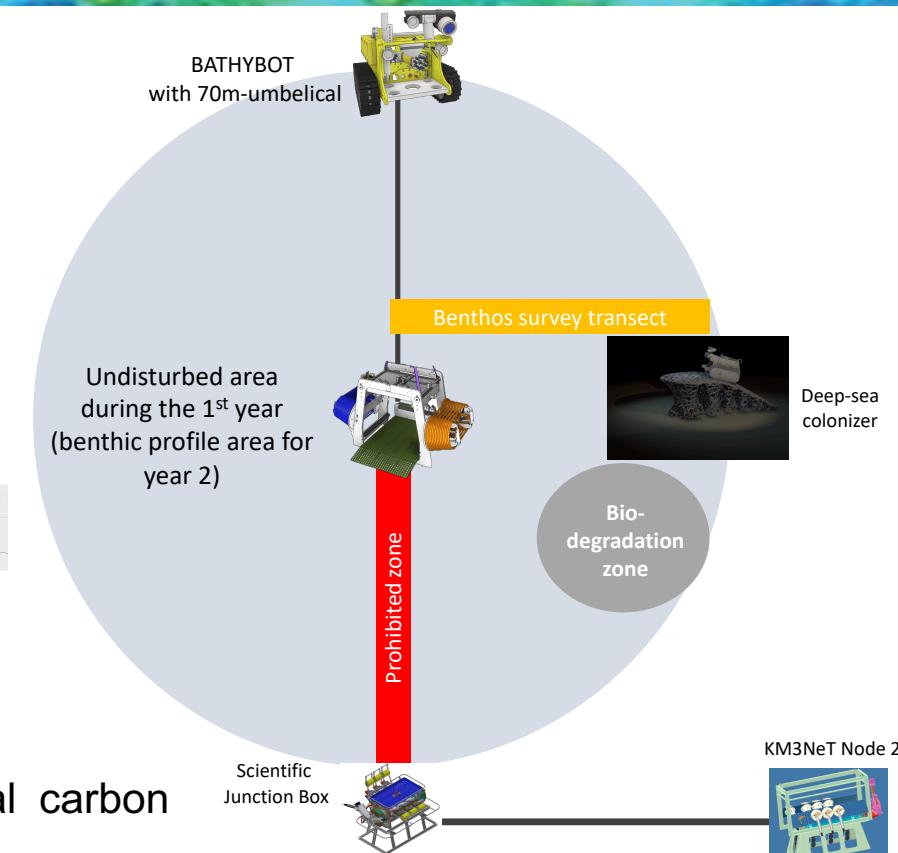


Fig. 3: BathyBot crawler frontview (above) and the BathyBot's dock station.



Among the scientific goals:

- pelagos/benthos biogeochemical link (biological carbon pump context)
- impact of deep convections on the functioning of deep ocean ecosystems (particles abundance, biodiversity)
- deep-sea bioluminescence (see also Poster 1.2 and 4.5)

A structure open to new collaborations. The deployment and connexion of BathyBot is scheduled for 2019-2020 as part of the FEDER NUMEREnv project. Once a year, it will be recovered for maintenance, instruments calibration, implementation of new instruments and provide future opportunities for new innovative scientific experiments.