

# Toward a pan-European monitoring network for marine chemical pollution: **Challenges and opportunities**



# Demand for marine monitoring of contaminants

## Policy demand for contaminant monitoring:

- MSFD Descriptor 8: «Concentration of the priority contaminants, measured in the relevant matrix (such as biota, sediment and water) in a way that ensures comparability with the assessments under Directive 2000/60/EC»
- Other international treaties: e.g. Stockholm Convention on Persistent Organic Pollutants

## Scientific demand for contaminant monitoring

Discovering new contaminants.

Tracking sources

Understanding contaminant environmental behavior

Define lists of priority substances for regulation

Unveiling co-linearities with observed impacts

Over 100,000 km coast line in Europe. Innumerable sources

## How do we set a cost-effective monitoring strategy?

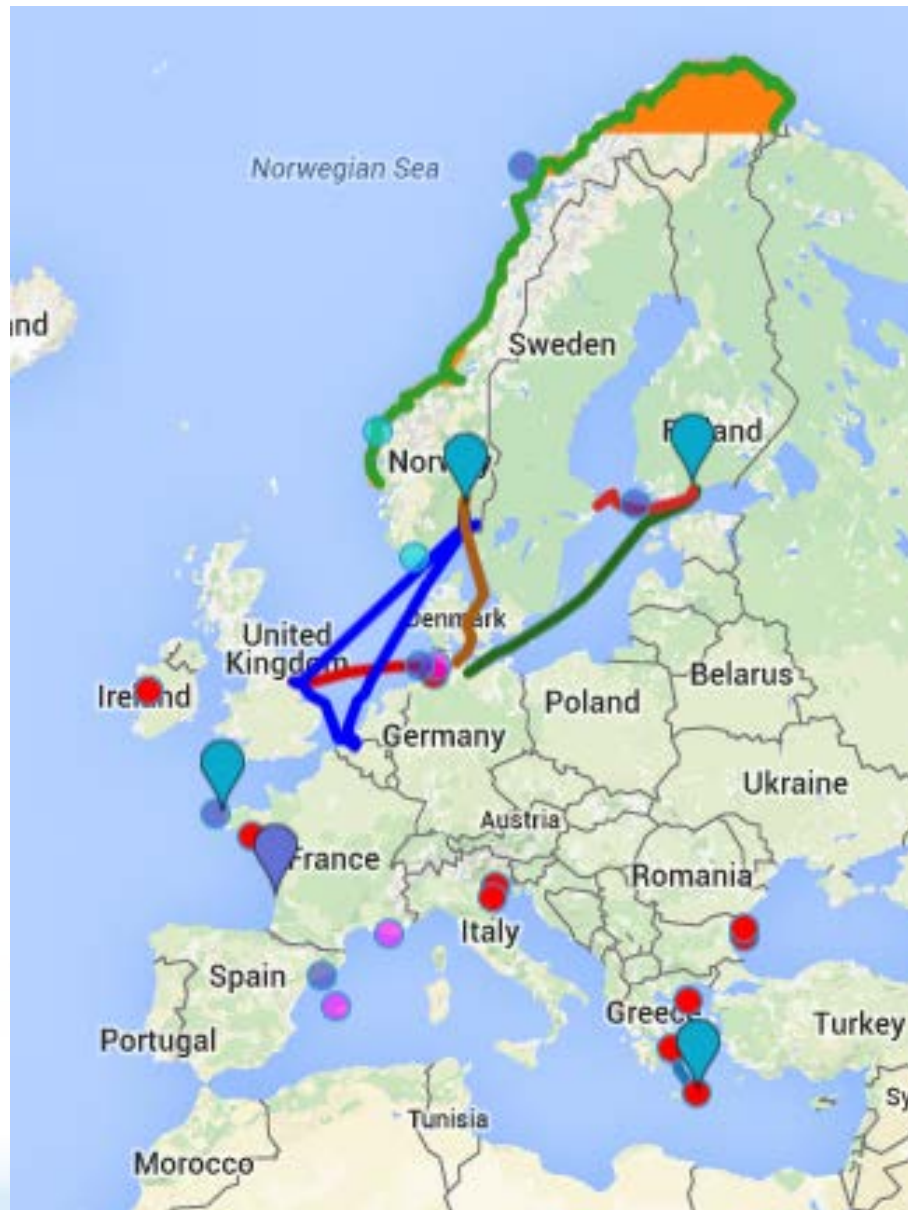
- **Clever use of existing multipurpose coastal infrastructures**
- **Further development of sampling devices and sensors**
- **Developing/Testing /demonstrating effective procedures/equipments using Jerico RI**

# The space for a harmonized European-scale monitoring of contaminant in marine waters



JOINT EUROPEAN RESEARCH INFRASTRUCTURE NETWORK FOR COASTAL OBSERVATORIES

**EU project (FP7): JERICO (2011-2015)**  
**On going H2020: JERICO-Next**





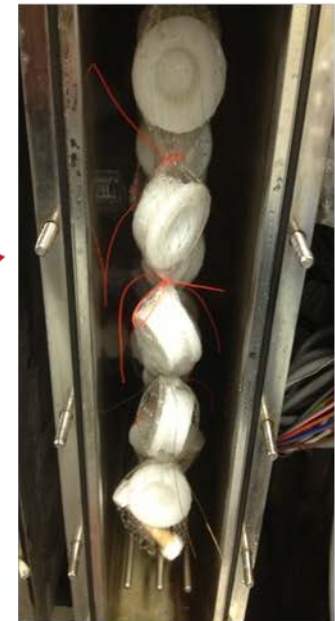
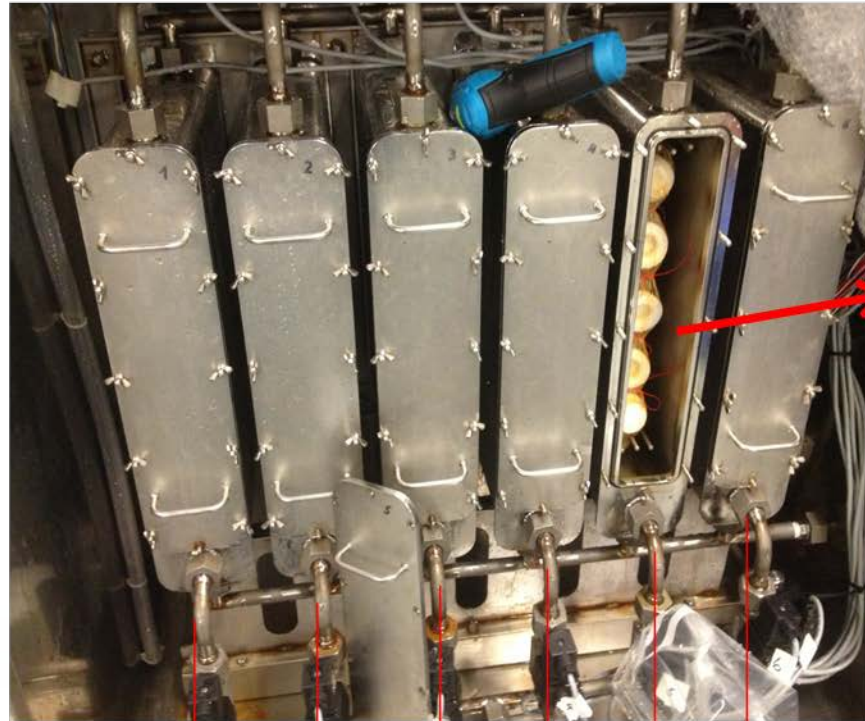
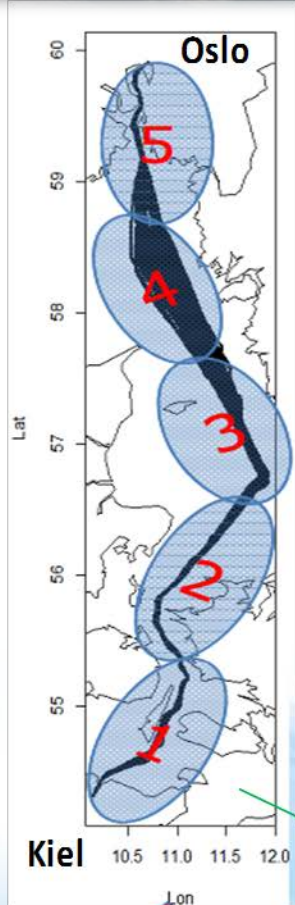
# Monitoring from mobile platforms

## FerryBox TaskTeam

### Ships of opportunity

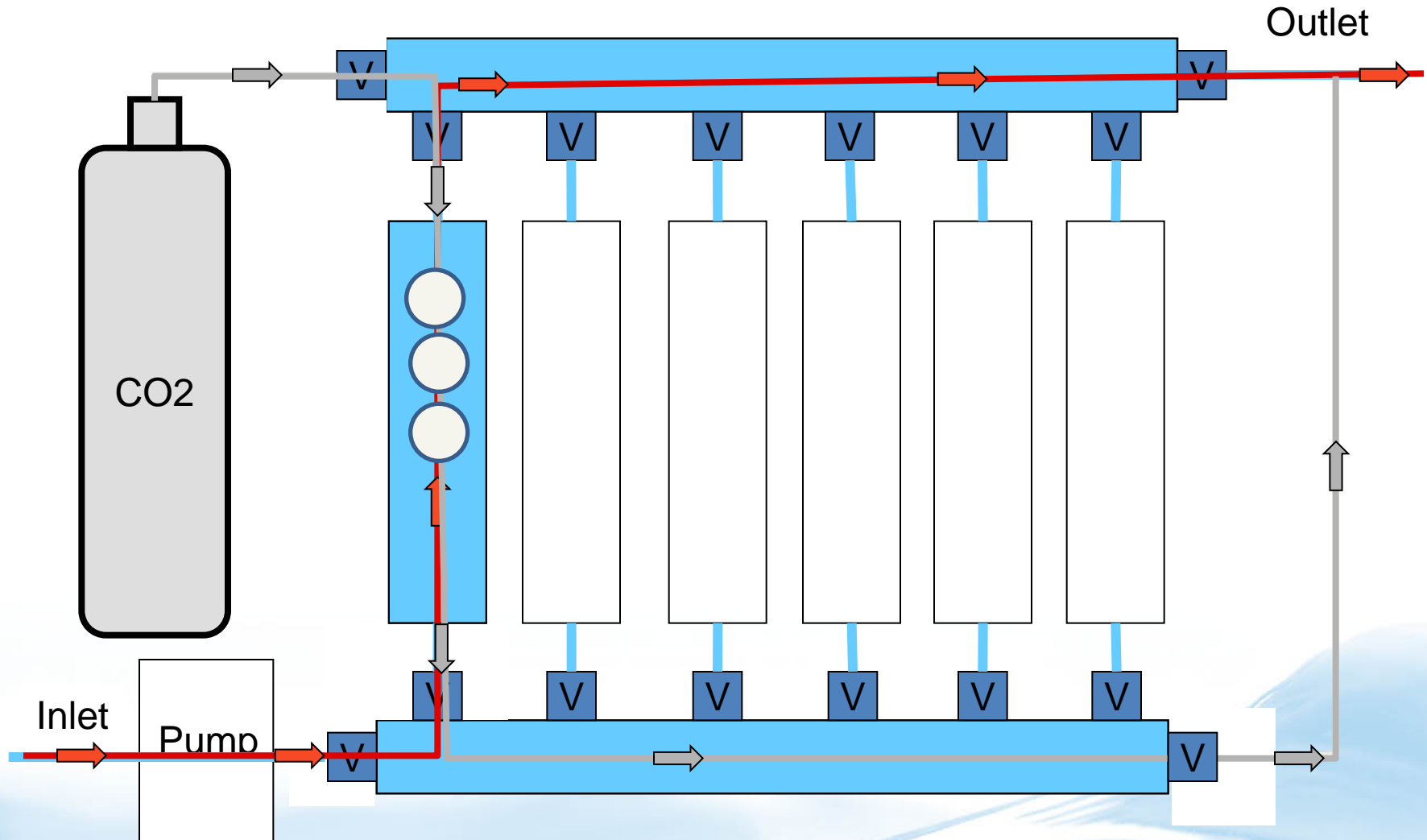


# Unmanned mobile passive sampling



Area 1 2 3 4 5 6 (Ref)

# Unmanned mobile passive sampling



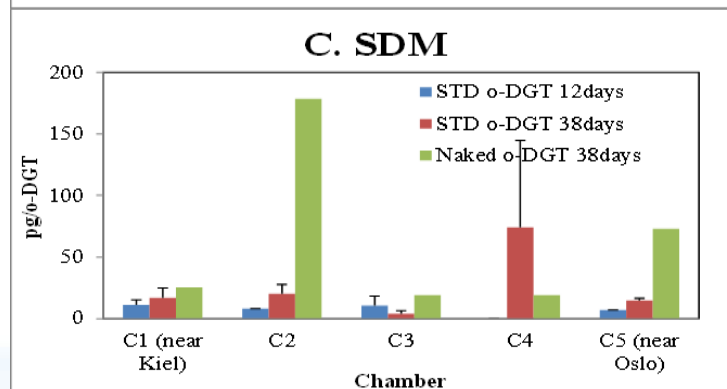
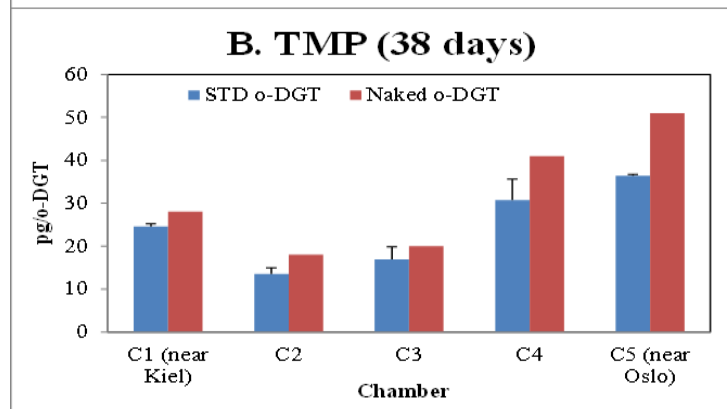
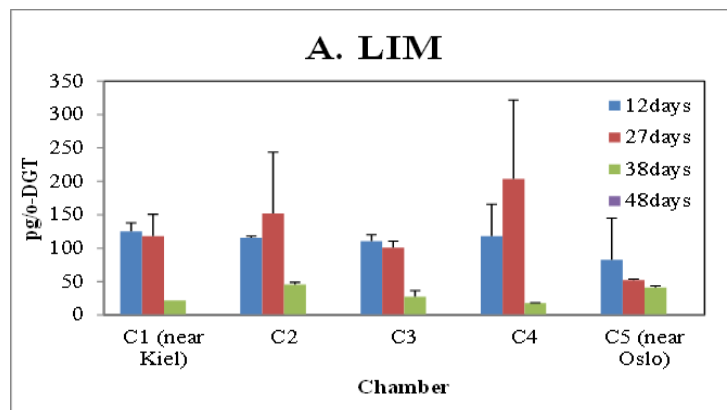
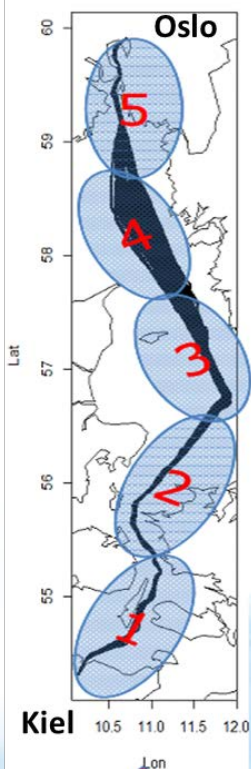




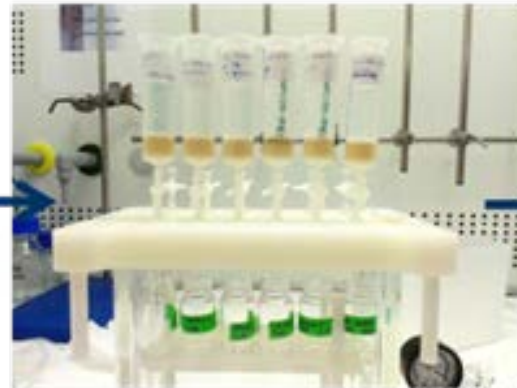
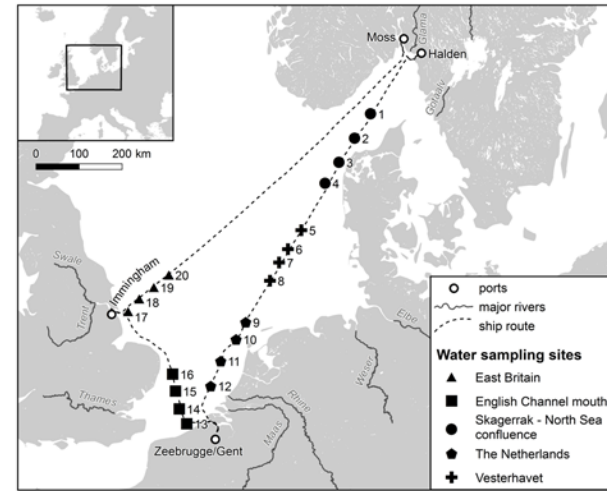
Lancaster University  
Chang'er

## O-DGT: RESULTS

**5 antibiotics routinely detected  
At ultratrace levels in marine water**



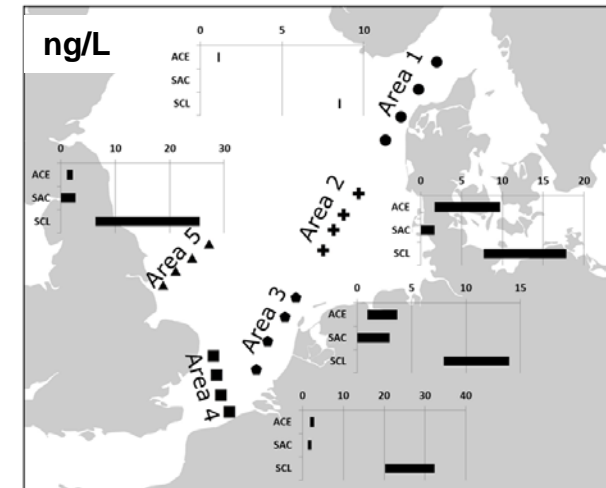
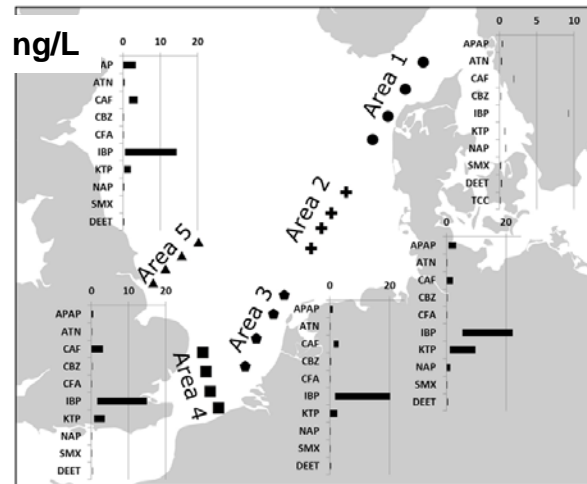
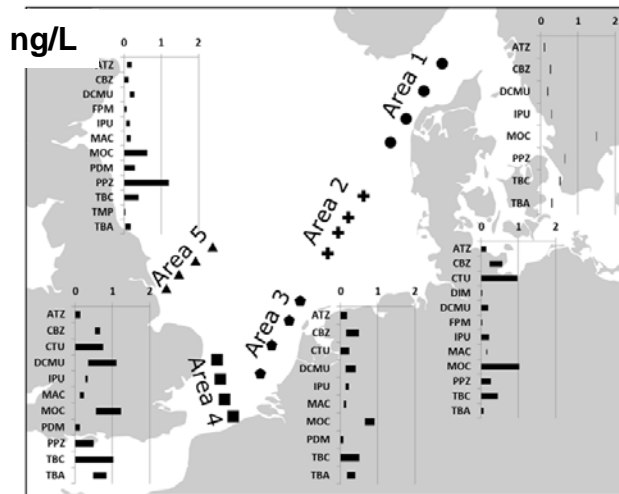
# Monitoring of CEC in the North Sea: Pilot study



## Current use pesticides

## Pharmaceuticals and personal care products

## Artificial sweeteners



## Detected contaminants in seawater

14 currently used pesticides (6 of them for the first time in marine waters)

11 pharmaceuticals and personal care products (3 of them for the first time)

3 synthetic food additives (2 of them for the first time in marine waters)

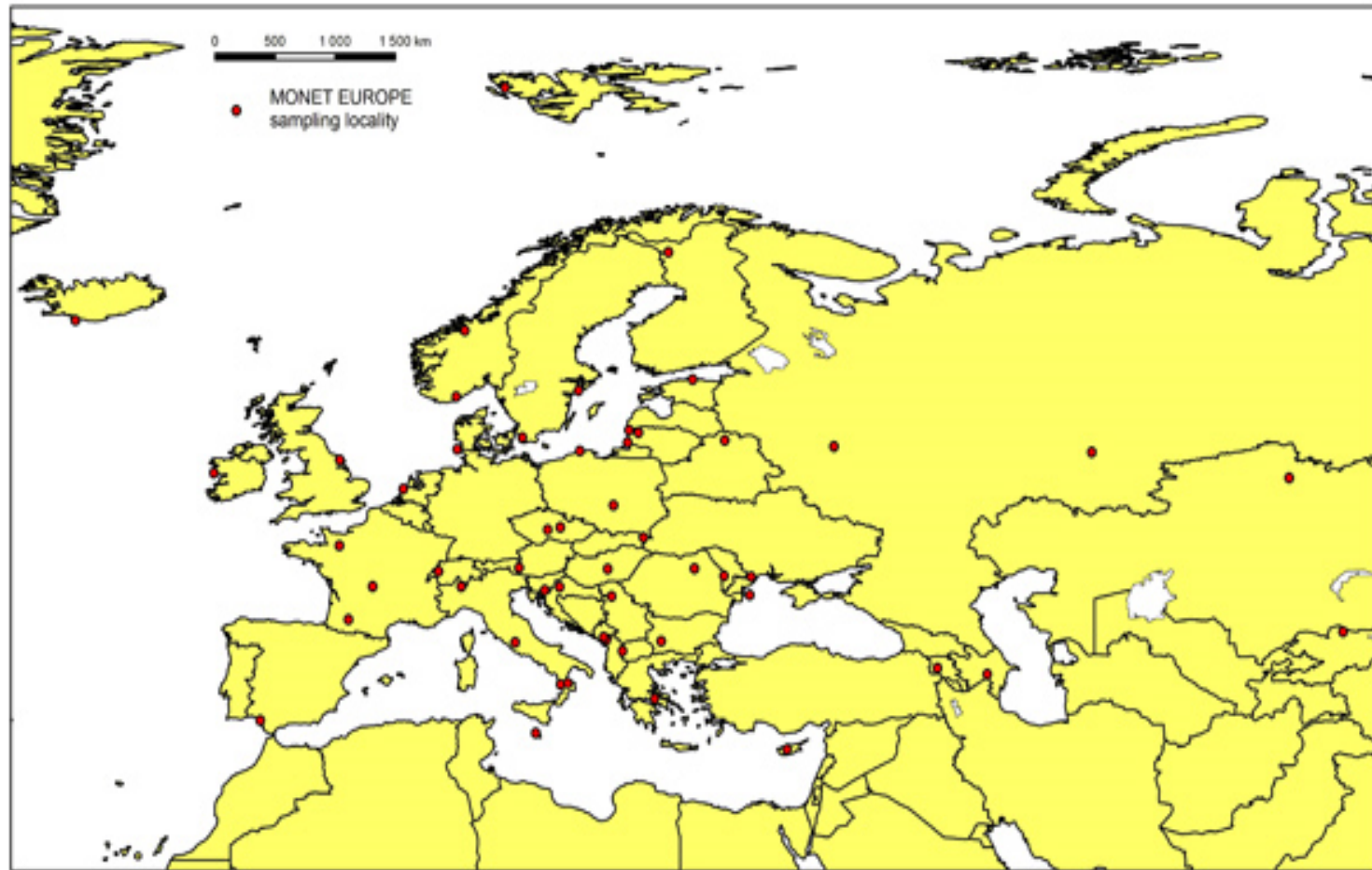
# 2016 Full scale study





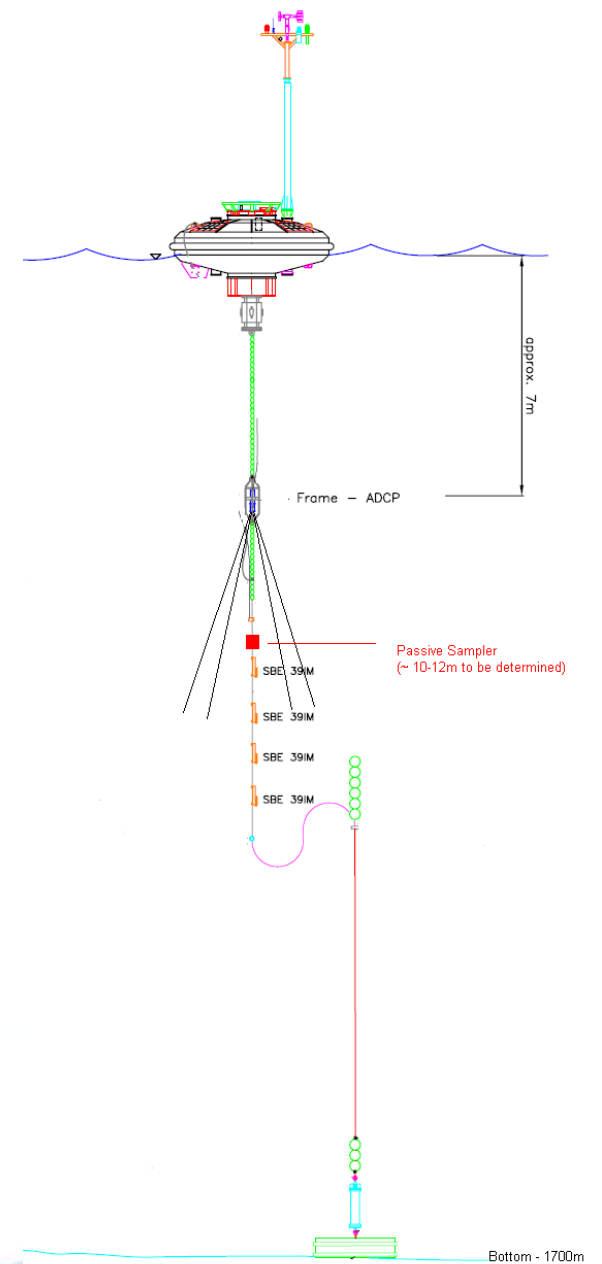
# Pan European passive sampler networks

## MONET- RECETOX Air sampling

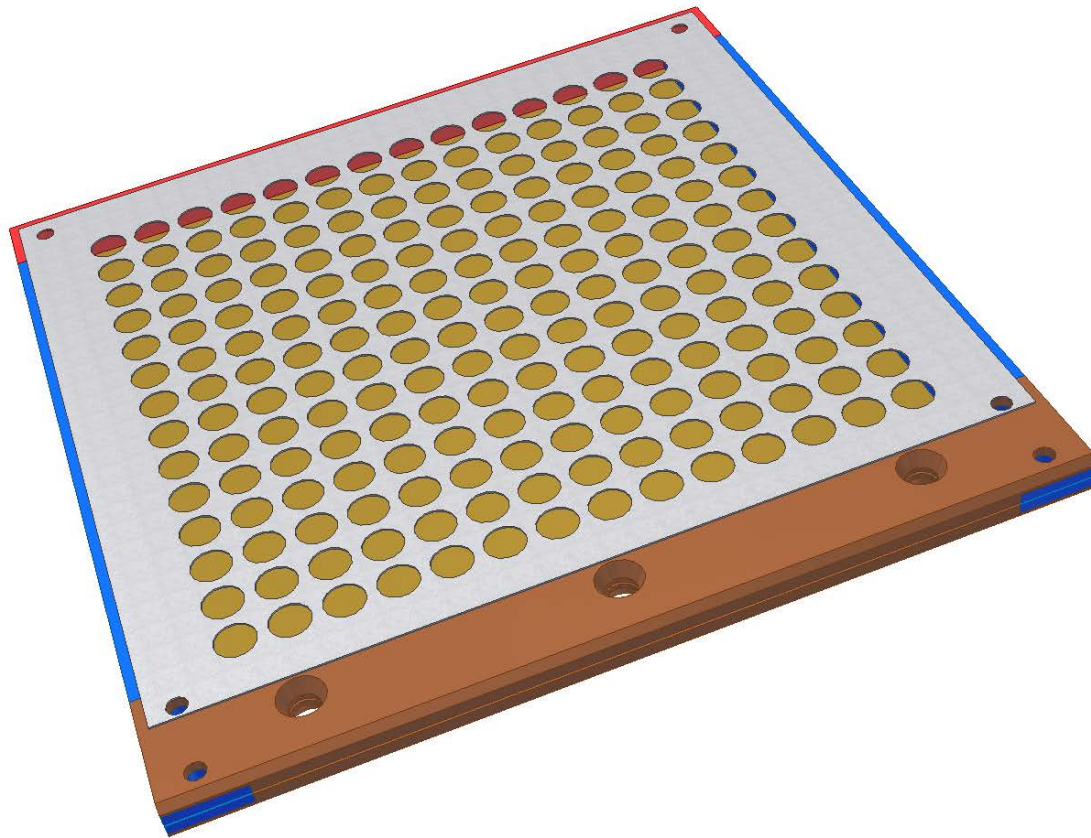




# JERICO Network (March –October 2016)

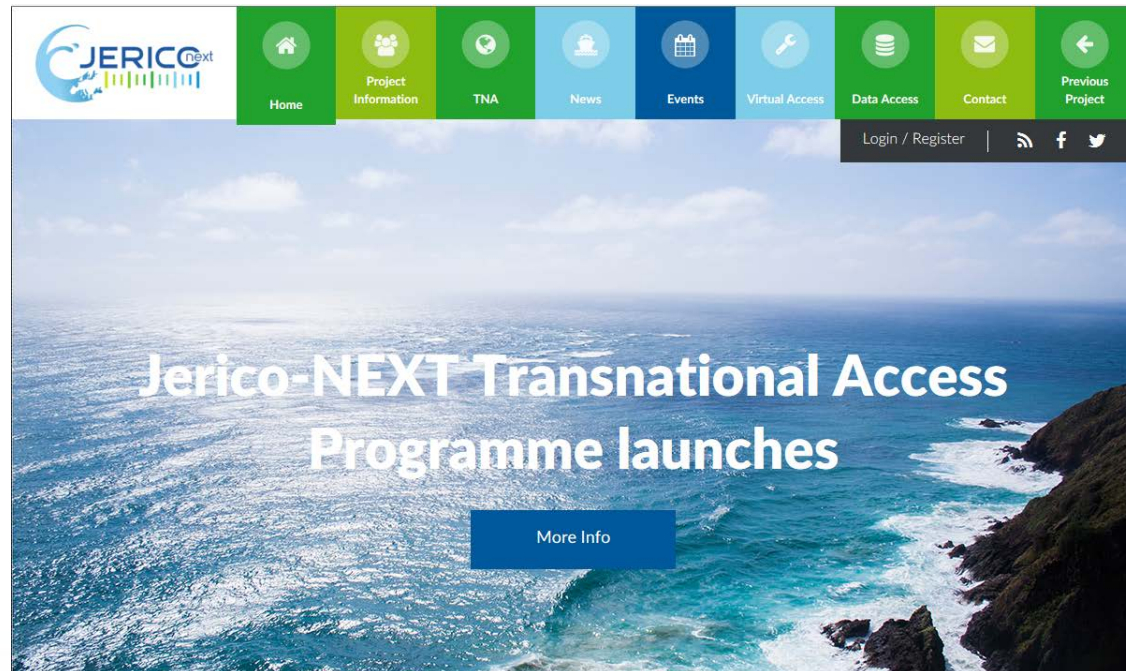


# A new deployment cage for easy handling by non-trained personnel



# Thanks

<http://www.jerico-ri.eu/>



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# Thanks for your attention

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