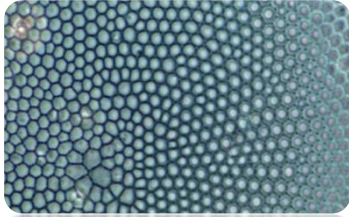




# Biodiversity, Bioinformatics, Biotechnology



## Overview

In Micro B3 32 partners from 14 countries work together in nine interdisciplinary teams of experts in bioinformatics, computer science, biology, ecology, oceanography, biotechnology, ethics and law for a better understanding of the marine ecosystem and to pave the way for novel biotechnological applications. Micro B3's primary objective is to integrate biodiversity, genomic, and oceanographic data into one Information System (IS), the Micro B3-IS, which is based on global standards for sampling and data processing.

## Key Products and Results

1. Best-practice guidelines and standards for collecting marine water samples, environmental data, logistics and bioinformatics for long-term ecological research sites and cruises
2. Integrated biodiversity, genomic, and oceanographic data via the Micro B3-IS
3. An annotation pipeline to identify viral, bacterial, archaeal and eukaryotic sequences in metagenomic reads
4. Computational workflows for predicting substrate selectivity of genes with known activities
5. Co-occurrence networks for "unknown" genes using known data to improve functional predictions
6. Innovative model agreements on Access to marine microorganisms and Benefit Sharing (ABS) distinguishing between research and development for the public domain and for proprietary purposes
7. Propagation of standards and data flows to facilitate free and open sharing of data and metadata
8. Dissemination of the project outputs:
  - 57 peer-reviewed publications to date
  - Three workshops and five training courses
  - Participation in more than 70 international workshops, conferences, business meetings, and EU-wide events
  - OSD movie and Micro B3 documentary
  - Organisation of global Ocean Sampling Days (OSD): a world wide community network of scientists and citizens for orchestrated sampling

**OSD**  
Ocean Sampling Day

**Title:** Marine Microbial Biodiversity, Bioinformatics and Biotechnology (Micro B3)

**Funding Scheme:** FP7-OCEAN

**Total Budget:** € 11,507,843 **EU Financial Contribution:** € 8,987,491

**Duration:** January 2012 – December 2015

**Coordinator:** Jacobs University Bremen gGmbH, Bremen (Germany)

[www.microb3.eu](http://www.microb3.eu)

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# Ocean Sampling Day a Global Event for Sequencing the Oceans

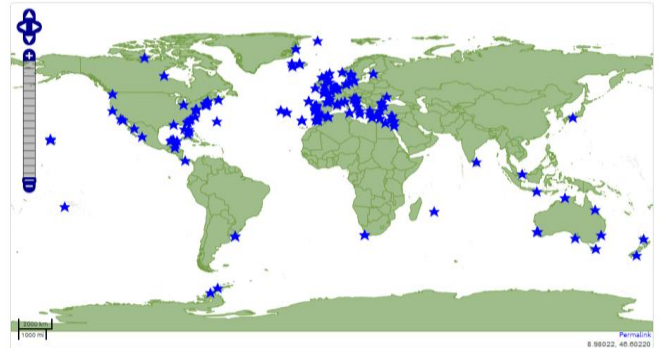


The Micro B3 Consortium initiated the idea of an orchestrated Ocean Sampling Day (OSD) with the ambitious aim to turn this into long-term time series (Genomic Observatories). The main goal of OSD is to analyse marine microbial biodiversity and function of the World's ocean.

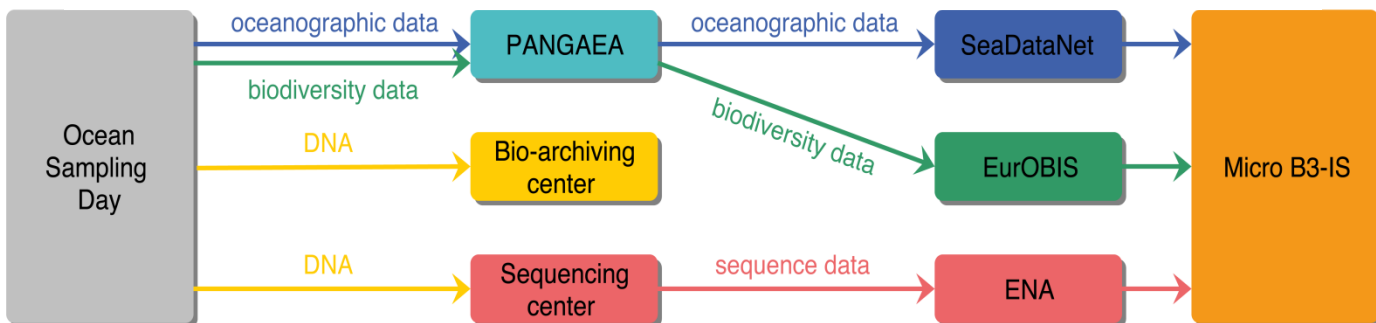


*The first Ocean Sampling Day took place on June 21<sup>st</sup> 2014. This OSD event involved 191 sampling sites from all continents ranging from tropical waters around Hawaii to extremely cold environments such as the Fram Strait in the Arctic Ocean.*

Map of OSD Participant sites



Standardized procedures, including the OSD handbook and a centralized hub for laboratory work and data processing assure a high level of consistency and data interoperability. The required bioinformatics capacity for data management, processing and analysis are combined in the Micro B3 Information System (Micro B3-IS). The Micro B3 Reporting- and Service Standards (M2B3) ensure consistent data storage across domains in the data archives shown below.



The OSD on June 21<sup>st</sup> 2014 has shown that more than 190 marine stations can be mobilized, organized and trained to work closely together to create a snapshot of the microbes in the World's ocean.

The next OSD is planned for **June 21<sup>st</sup> 2015**

For more information please visit: [www.oceansamplingday.org](http://www.oceansamplingday.org)

