OceanTEA: Exploring Ocean-Derived Climate Data Using Microservices

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1. Context

Autonomous ocean observation systems, such as the modular ocean laboratory MoLab developed at GEOMAR, produce an increasing amount of time series data. The software tool OceanTEA leverages modern web technology to support scientists in interactively exploring and analyzing such high-dimensional datasets.
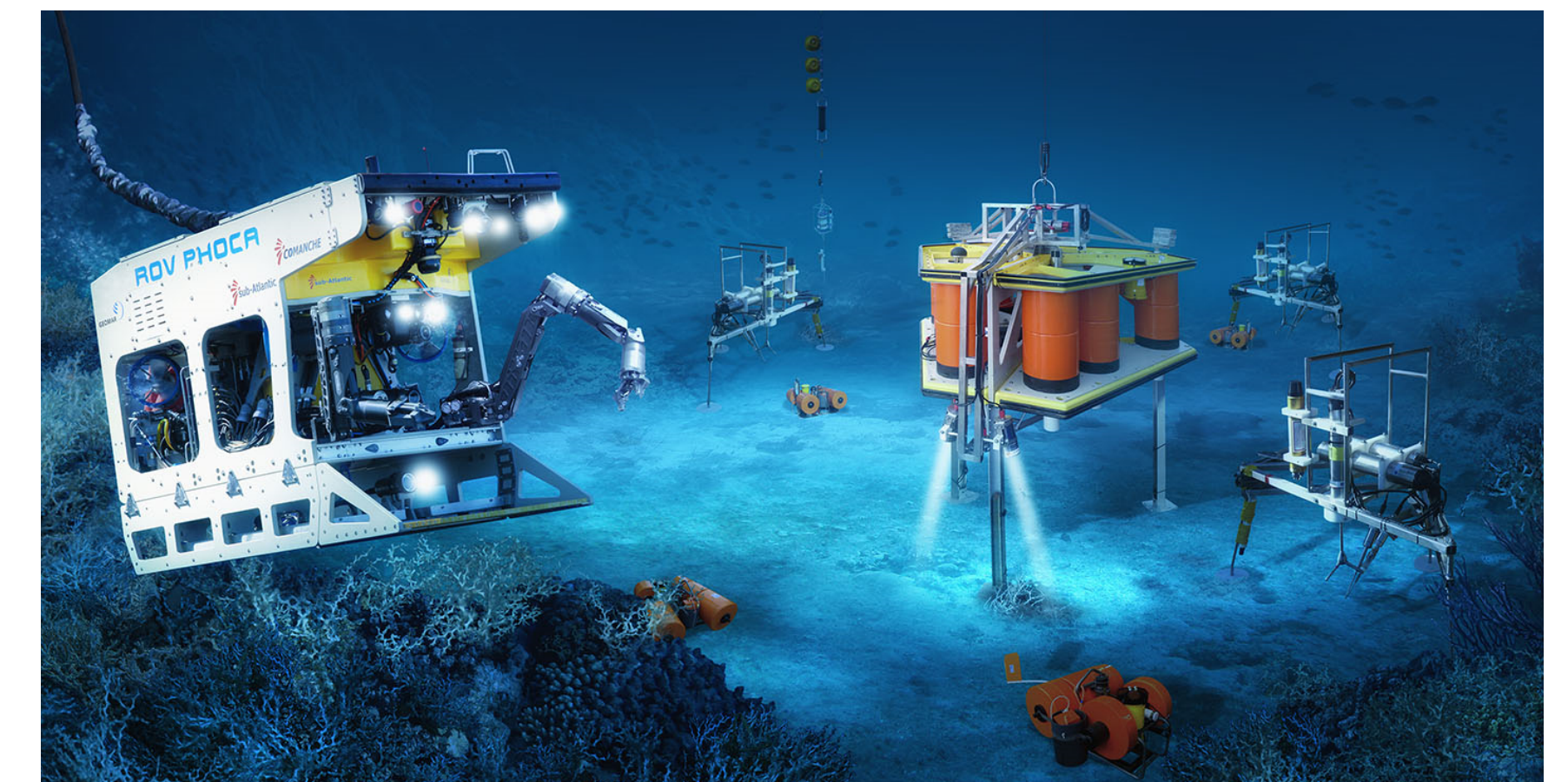
Schematic view of a MoLab configuration
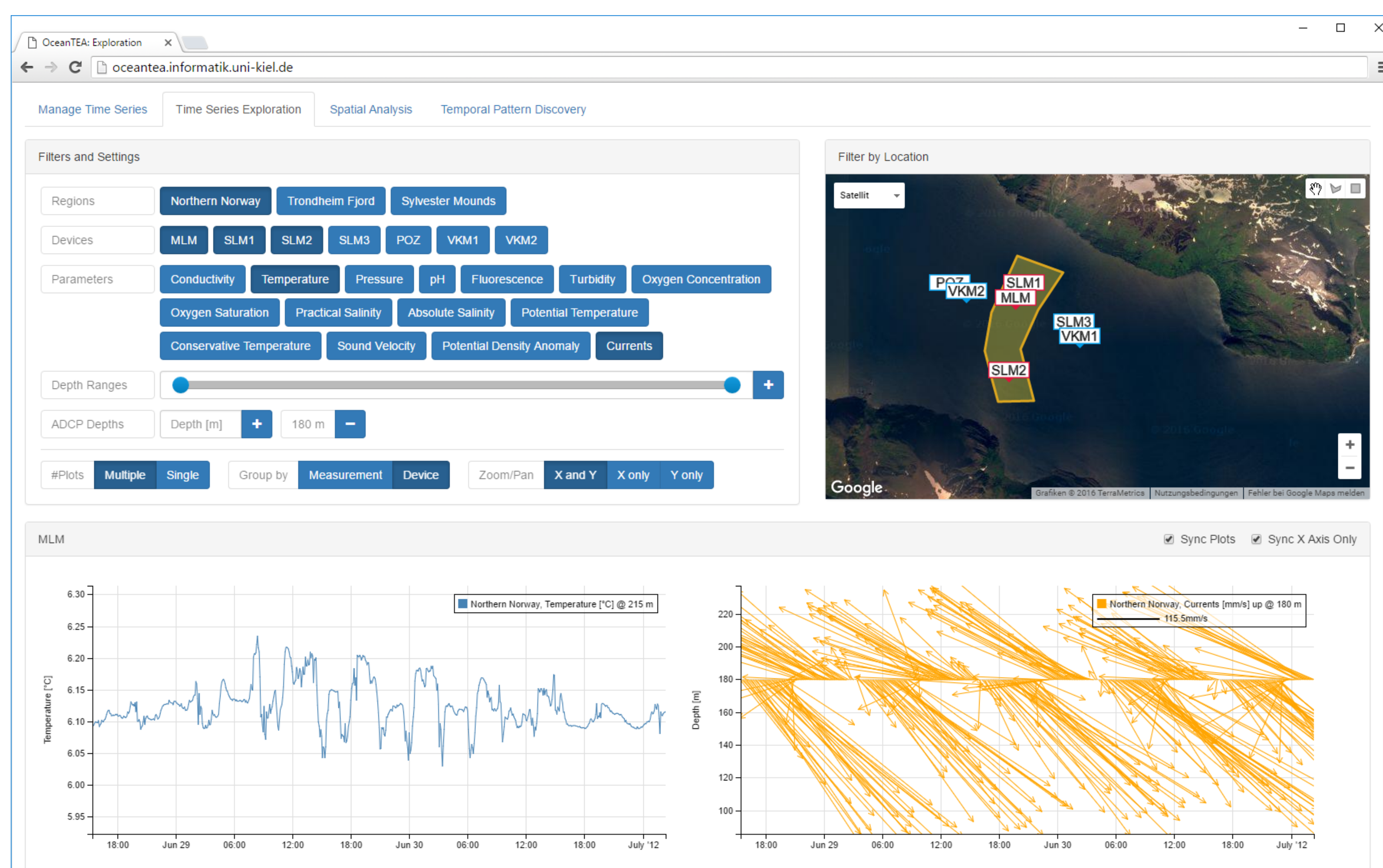
The data exploration view of OceanTEA

2. OceanTEA

Open-source tool to support
- interactive data visualization
- spatial analysis
- temporal pattern exploration

for both univariate and multivariate time series.

Try the **live demo** of OceanTEA:
github.com/a-johanson/oceantea

3. Microservice Architecture

The implementation of OceanTEA is partitioned into so-called microservices, which are small, self-contained applications that can be deployed independently and each have a single functional responsibility.

- Optimal implementation and storage technologies for each microservice
- Scales seamlessly from desktop computers to cloud computing infrastructure
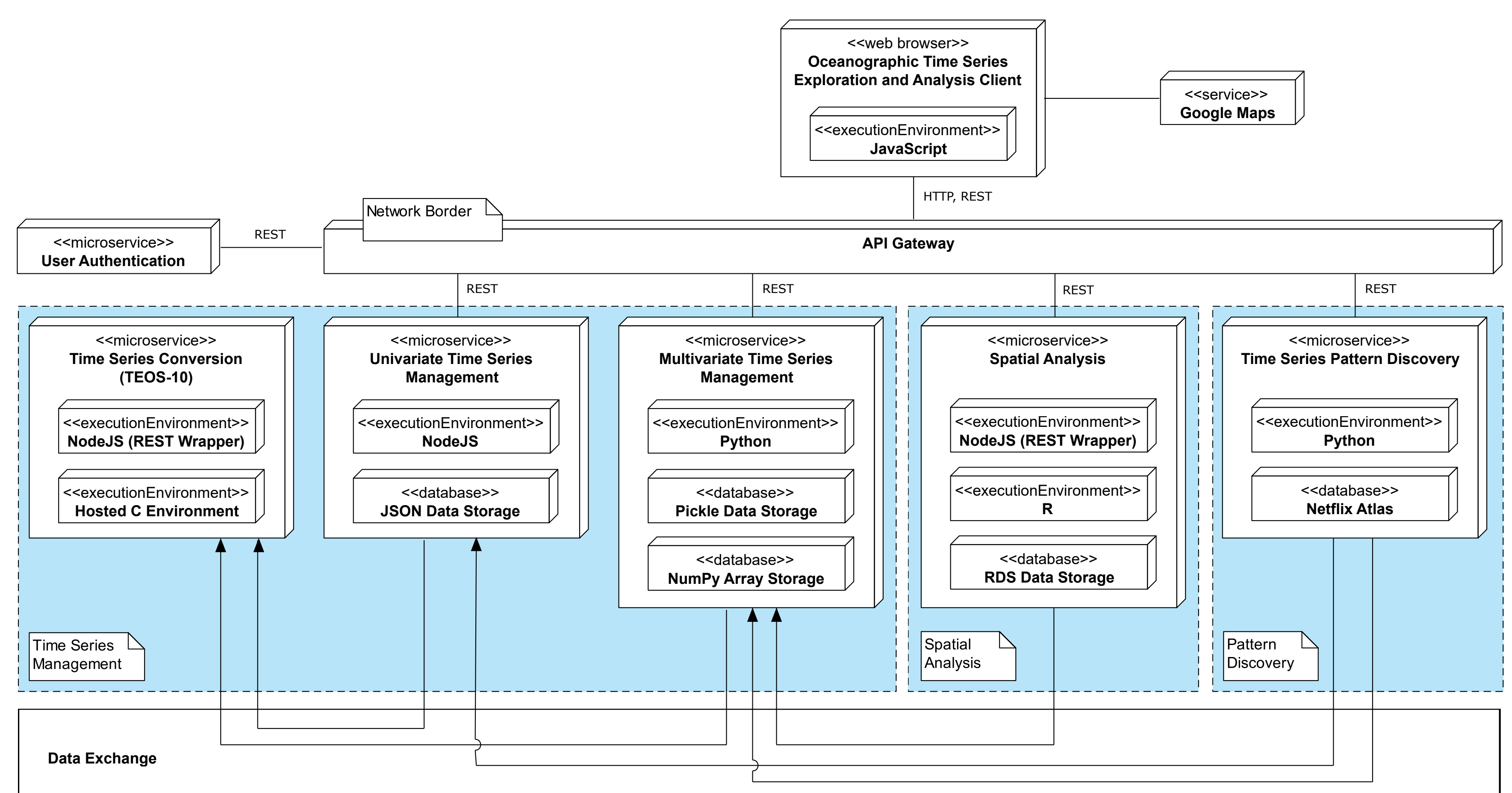
The microservice software architecture of OceanTEA

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