

DELTARES

Development of Visualization Services for SeaDataCloud

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Index

- Deltares
 - Introduction
 - Projects
 - Interactive analysis and visualization
 - Experience in Emodnet
- SeaDataCloud
 - Role in the project
 - OpenEarth (OET)
 - Interactive approach

Deltares

Introduction



Deltares

Deltares is an independent research institute for delta technology, incorporating advanced expertise on water, soil and subsurface issues.

- Research and Specialized Consultancy
- National and International
- Not-for-profit



Deltares

Working with:

- Governments
- Universities & Research Institutes
- Private sector, NGOs



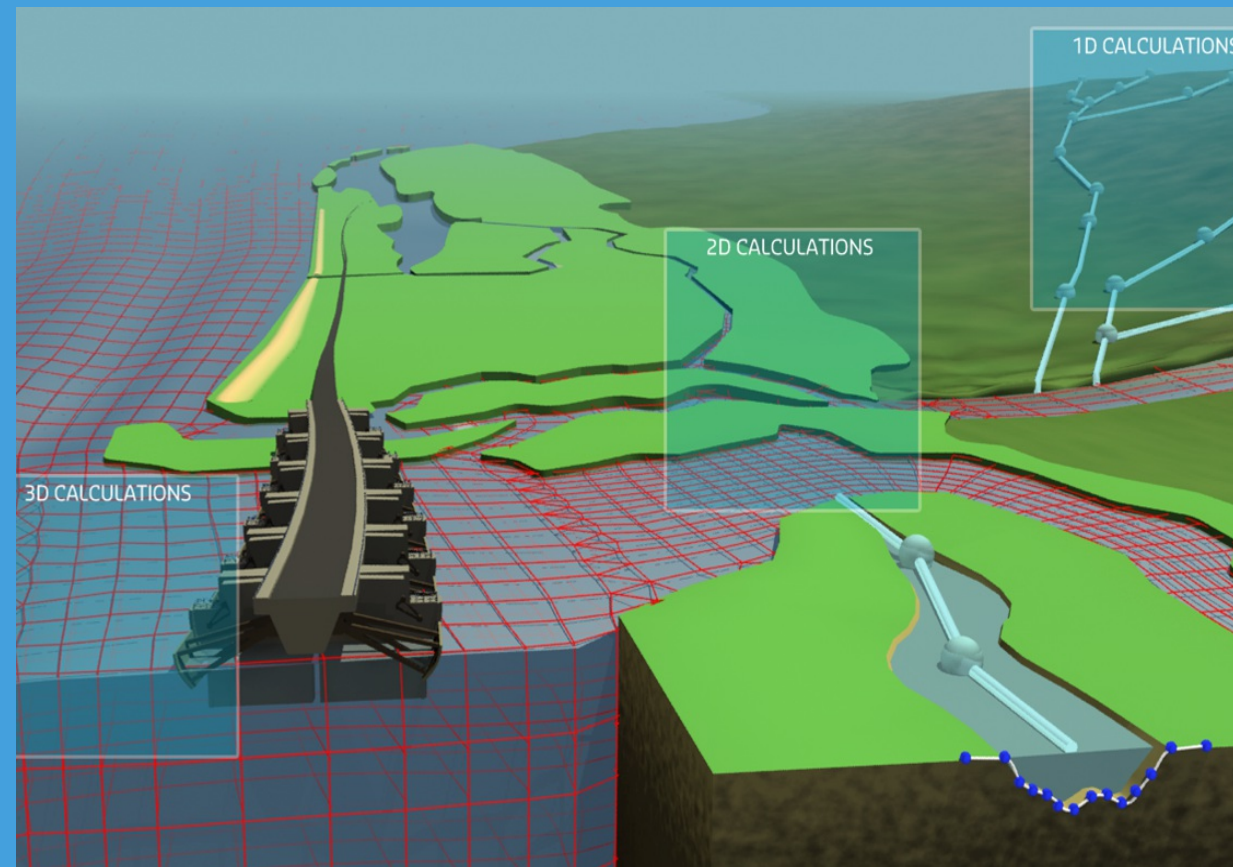
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Expertise

- Flood Risk
- Sustainable Delta Planning
- Delta Infrastructure
- Water and subsoil resources
- Ecosystems and environmental quality

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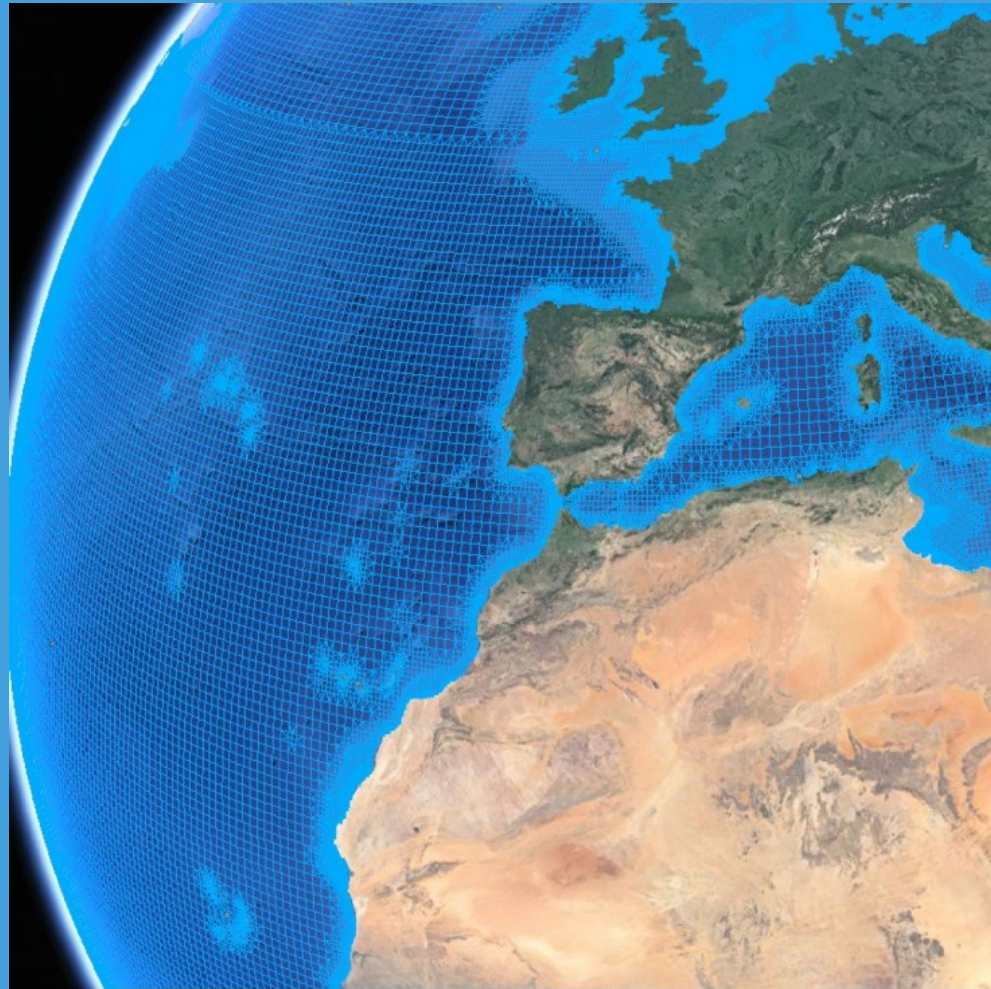
Open Software



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Open Software

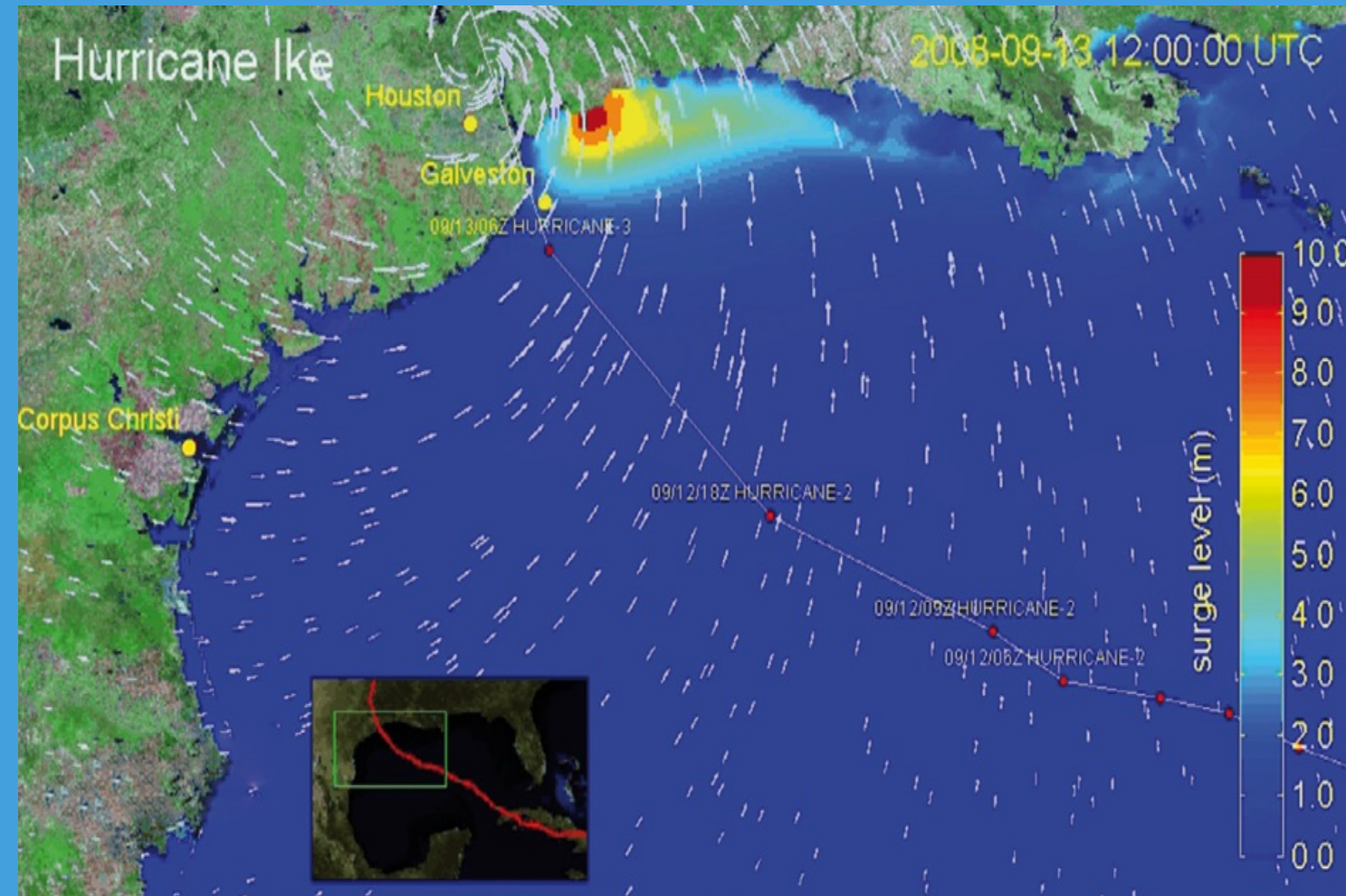
- Numerical models



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Open Software

- Numerical models



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Facilities



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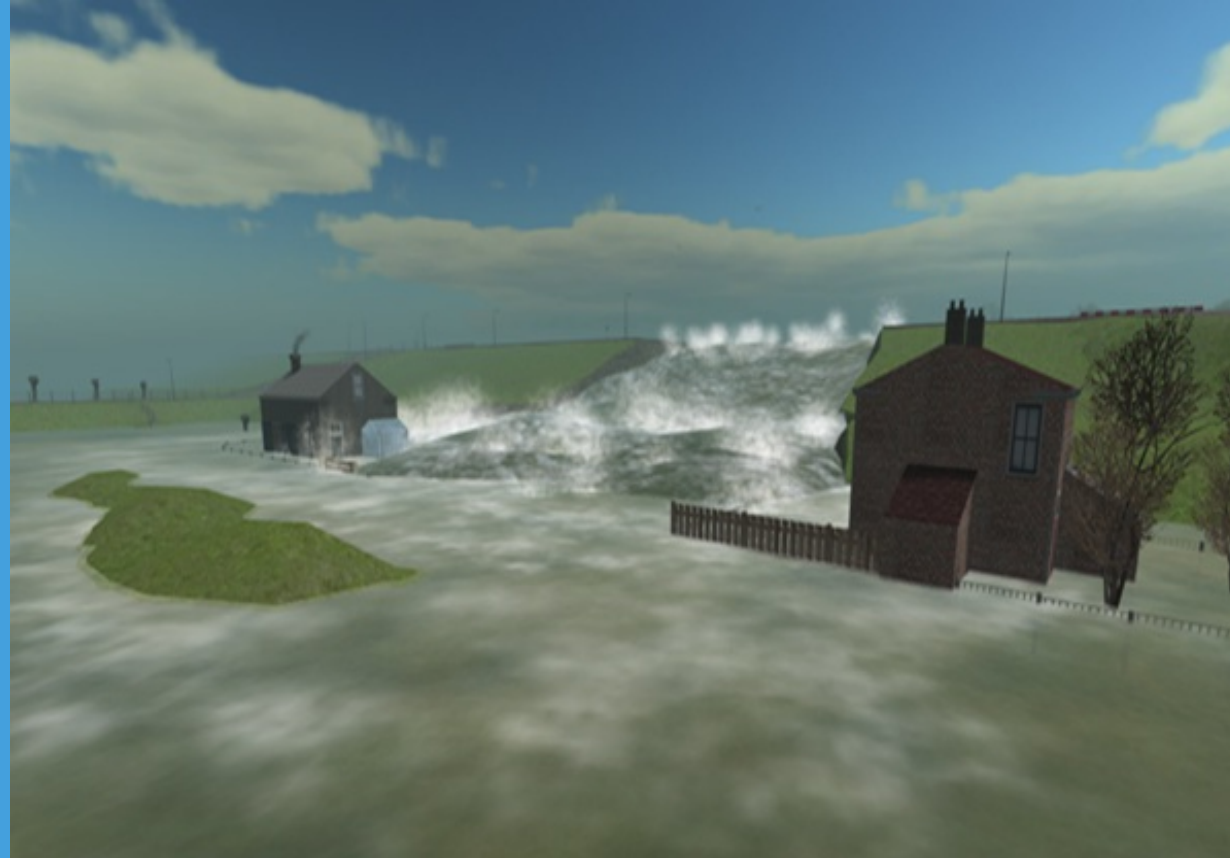
Facilities



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Serious games

- Through serious gaming, (open source) software, publications, data and models, doctorate supervision, Deltares Academy, workshops, congresses and research projects



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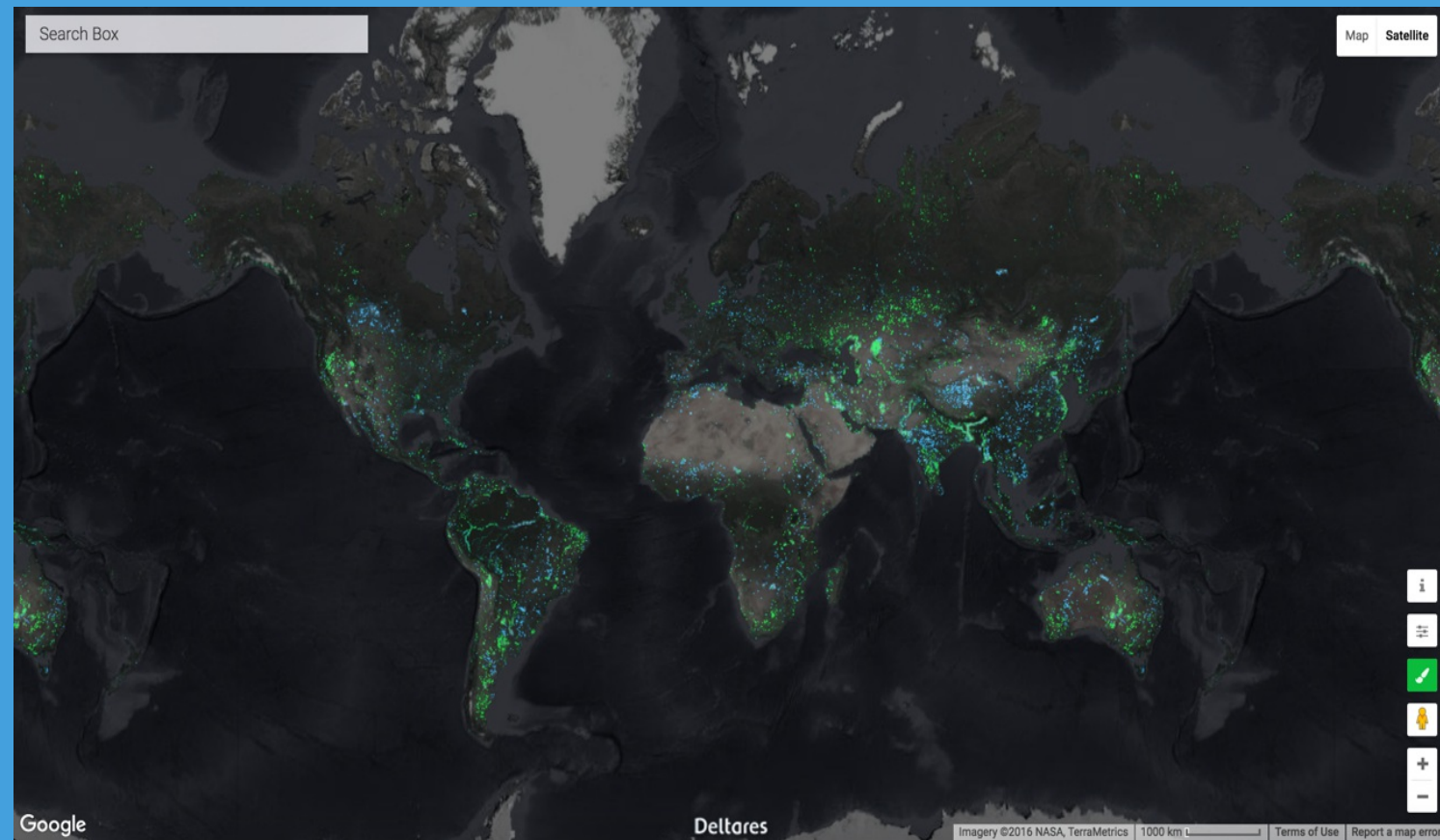
Projects

- Interactive modeling

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Projects

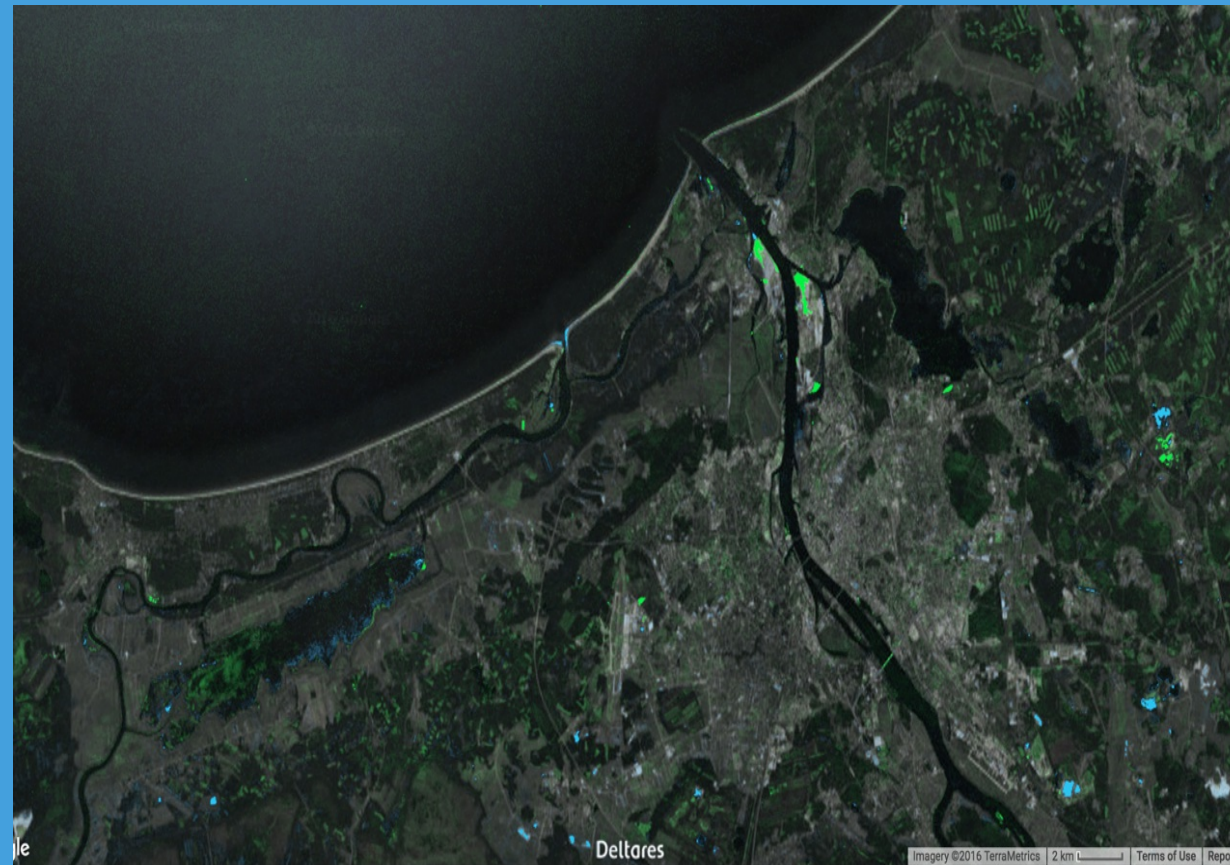
- Aqua-Monitor
- <http://aqua-monitor.appspot.com/>



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Projects

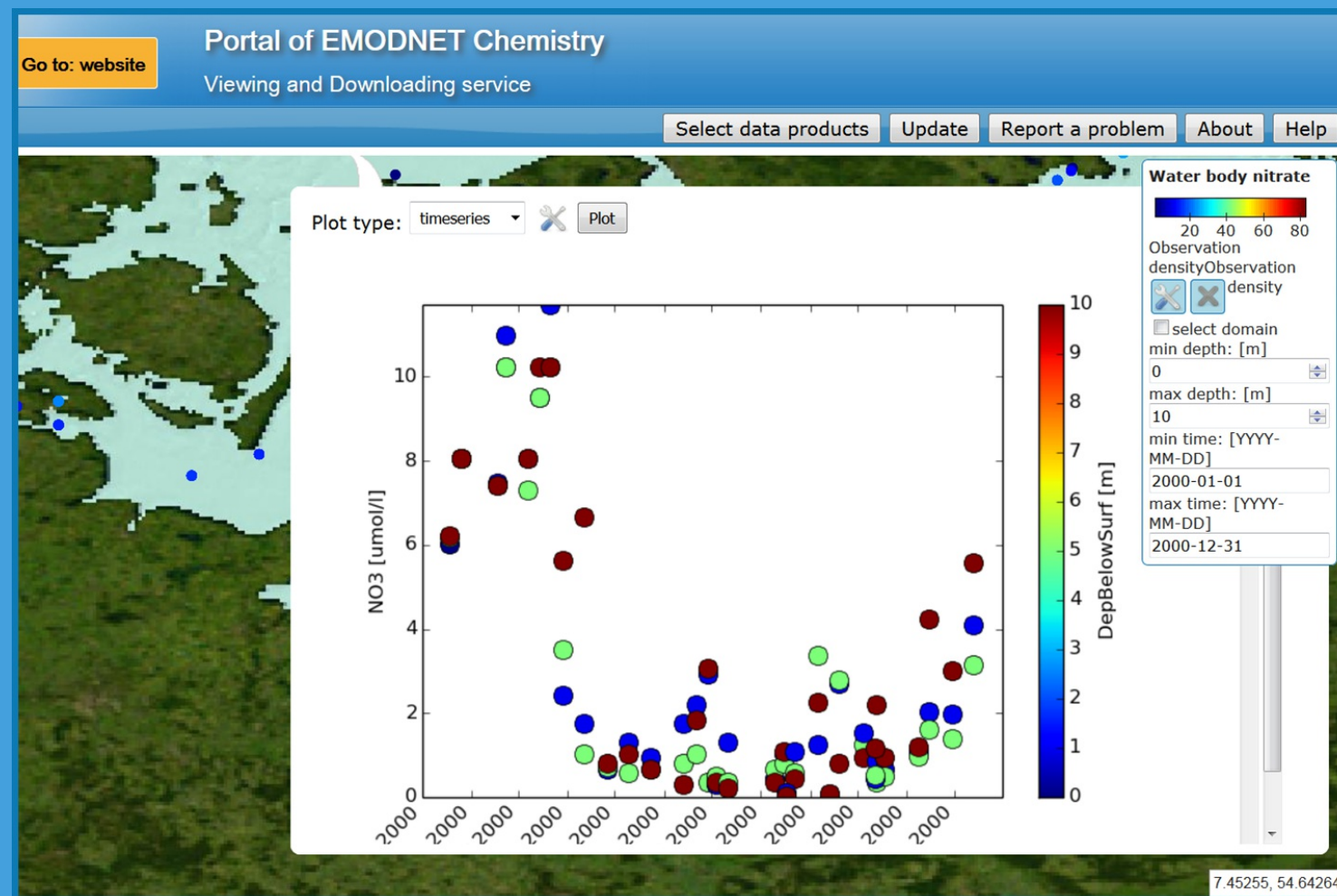
- Aqua-Monitor (Riga)
- <http://aqua-monitor.appspot.com/>



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Projects

- Work on Emodnet Chemistry II



SeaDataCloud

Role

- **Task WP10.2:** Developing advanced services for search, processing, analytics, quality, visualisation - Led by IFREMER, MARIS, ETT, Deltares, AWI, ULG, 52North, VLIZ, and EUDAT
- WP10.2.5: development of visualisation services (Deltares)
- Furthermore, work along with the WP8/9 decisions: standards and upstream services.

SeaDataCloud

Scope

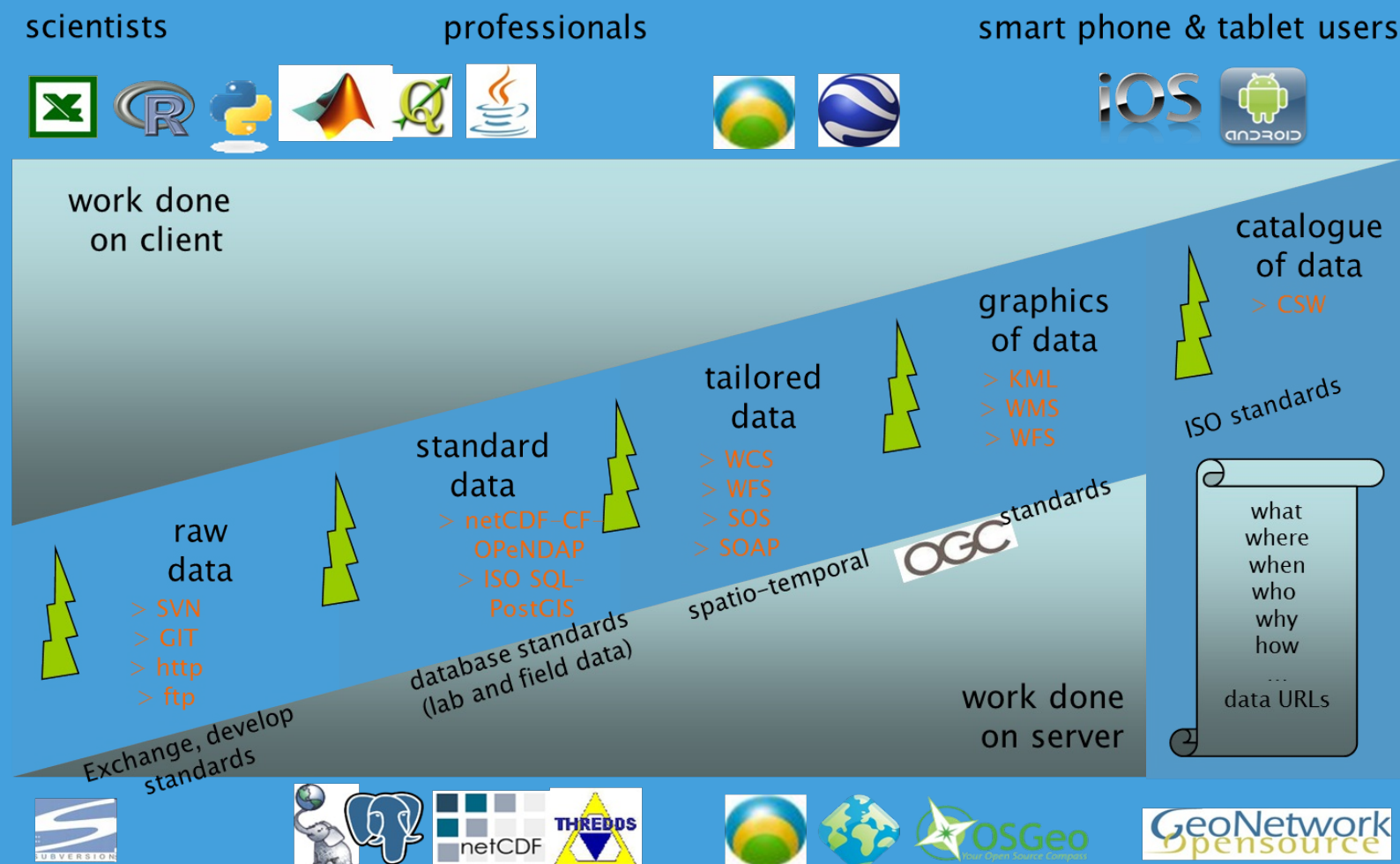
- Development of Services for Web visualisation of georeferenced data products (time-series, profiles, time-depth) for the EUDAT VRE users.
- Data analysis and data visualization via OGC Web Services



SeaDataCloud

OpenEarth

- OET experience
- Working with Data, Visualization, Open Standards
- <http://www.openearth.nl/>



SeaDataCloud

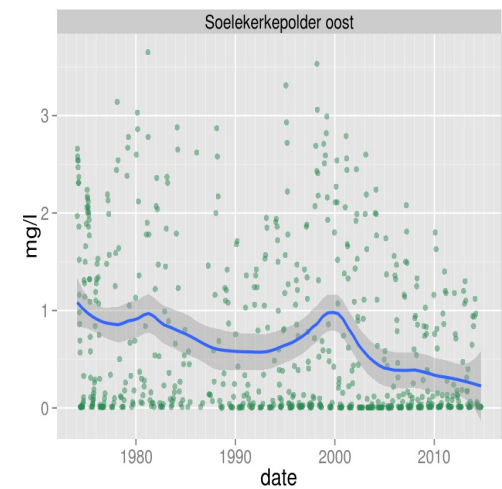
Interaction

- plot.ly
- R Shiny

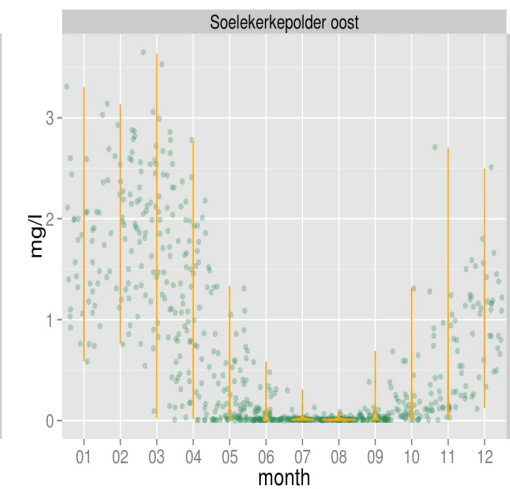
Metingen waterkwaliteit Veersemeer



Onderstaande grafieken zijn samengesteld uit metingen gedaan door Rijkswaterstaat binnen het MWTL programma. De site is bedoeld als demonstratie, en conclusies aan de hand van de gepresenteerde data en analyse zijn voor rekening van de gebruiker. Ruwe data zijn te downloaden van <http://live.waterbase.nl>



Trend: Tijdserie met jaarlijkse periodiciteit
 $y = a + b \cdot x + c \cdot \cos(2 \cdot \pi \cdot x) + d \cdot \sin(2 \cdot \pi \cdot x)$,
waarbij the trend door -b- wordt
gerepresenteerd - 90-percentile: 90
percentile of observations per
summer/winter per jaar en voor de
geselecteerde periode - Loess: curve met
in te stellen stijfheid voor
patroonherkenning



Boxplot of violinplot van de jaarlijkse
periodiciteit voor de geselecteerde periode

SeaDataCloud

Interaction

- Jupiter notebooks
- WPS
- BMI Basic model interface: interact with a computer model while running. [Example](#)

SeaDataCloud

Discussion

- Exchange ideas for visualizations
- Exchange cloud computing experiences
- Discussion on technical details (e.g. WPS, notebooks, containers, ugrid, BMI,)
- Implementation of Services in EUDAT VRE

Thanks. Questions?

