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# Set up of the Monitoring Network Flemish Coast

## Broersbank Project Task Contents

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# Monitoring Network Flemish Coast



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## Proposal



Existing wavebuoys  
(Monitoring Network  
Flemish Banks)

5 additional measuring locations



## Measuring Waves from Westhinder to near-shore (Broersbank)

- Already wavebuoys at Westhinder and Trapegeer (Monitoring Network Flemish Banks)
- Wavebuoys at 5 additional locations on transect Westhinder – near-shore



How to set up ?

- Integration in Monitoring Network Flemish Banks
- or
- Dedicated stand-alone Measuring Network

*Monitoring Network Flemish Banks: continuity, long-term, real-time,...*

*Proposal contents: experimental, temporary, no real-time,...*

# ***Monitoring Network Flemish Coast***



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**Final Decision :**

**Dedicated stand-alone  
“Monitoring Network Flemish Coast”**

**Measuring waves at 5 locations : 2 Directional  
and 3 Non-directional Wavebouys.**

***and use data from 2 or more locations of  
Monitoring Network Flemish Banks***

# Monitoring Network Flemish Coast

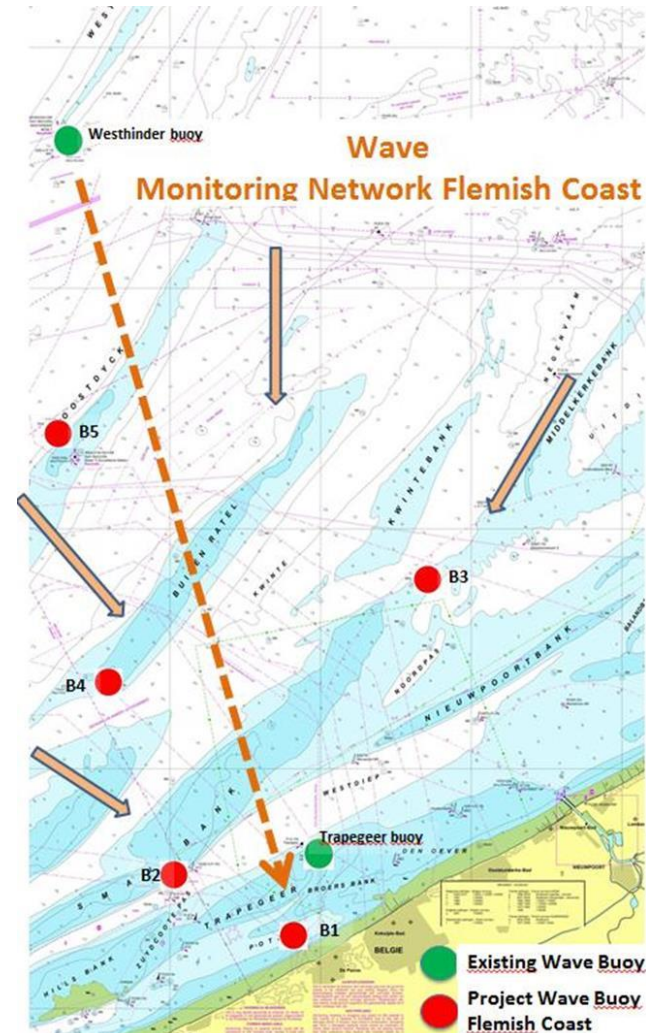


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## Proposal



## Realisation



## Tender - Public service contract

- Delivery of Wavebuoys
- Development and set up of the Monitoring Network : data communication, data storage, data delivery
- Operational exploitation & maintenance

## Tender - Public service contract

Data communication and data acquisition:

- Data communication by Iridium satellite and data storage on mem-card

  - (no VHF datacom ↔ Monitoring Network Flemish Banks)

- No ICT-hardware delivery

  - ICT-infrastructure to get the data transmitted by satellite a duty of the service provider



## Tender - Public service contract

- Follow-up dataacquisition, buoy-position,...
- Delivery and installation of an application for the end-users to get, view and store the data on the end-user pc-platform.
- End-users : MDK-Coastal Division, KULeuven, Flanders Hydraulics.

# *Realisation*



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**Public service contract**

**“THV Meetnet Kust”**

**a combination of**

**Cofely Fabricom and Radio Holland Belgium /  
Imtech**

**2013 - 2016**

# *Realisation*



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**Measurements started end November 2013 and  
and are stopped begin April 2016.**

**The famous 'Sinterklaas' storm of December 5-6  
2013 was included in the monitoring project.**



- Vessel :

Deployment of the Wavebuoys

Maintenance on sea

- Buoyage (protection collision / damage by ship traffic)

By DAB VLOOT

# *Operational Exploitation*



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## DAB Fleet

-Vessel with crew for wave buoy discharging, boarding and maintenance on sea

-Buoyage



# *Study Project by KULeuven*



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- \* Monitor the data delivery, check data quality, remove spikes and and suspicious (bad quality) data
- \* Set-up a database wave-data

# *Study Project by KULeuven*



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- \* Set-up a model suite :  
hydrodynamic model (Coherens)  
and spectral wave models (WAM &  
SWAN).
- \* Optimize this Model suite using the  
wave data delivered by the  
Monitoring Network Flemish Coast.

# *Study Project by KULeuven*



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- \* Quality Control: Model Results vs. Measurements & Quality Indicators**
- \* Forecast the effect of topping up an existing sandbank**
- \* Set-up an alternative Model suite: Telemac - Tomawac**



# *Study Project by KULeuven*



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**\* Deliver an optimal model suite that can deliver accurate wave data on the near-shore that can be used in a next phase to model/calculate the erosion of the foreshore and beaches and sediment transport.**

# ***Study Project by KULeuven***



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## **Final Goal**

**This optimal modelsuite(s) will in an next phase (*coupled with X-Beach ?*) allow to model the effect of intertidal areas and sand banks for the coast on the evolution of the coastline.**



# Monitoring Network Flemish Coast

## Broersbank Project

*Thanks*  
*Questions ?*