

# Field Measurements of Ship-induced Waves and Currents in the Outer Ems

**Client:**

Wasser- und Schifffahrtsamt Emden



**Period:**

09/2009 – 12/2009

**Project Description:**

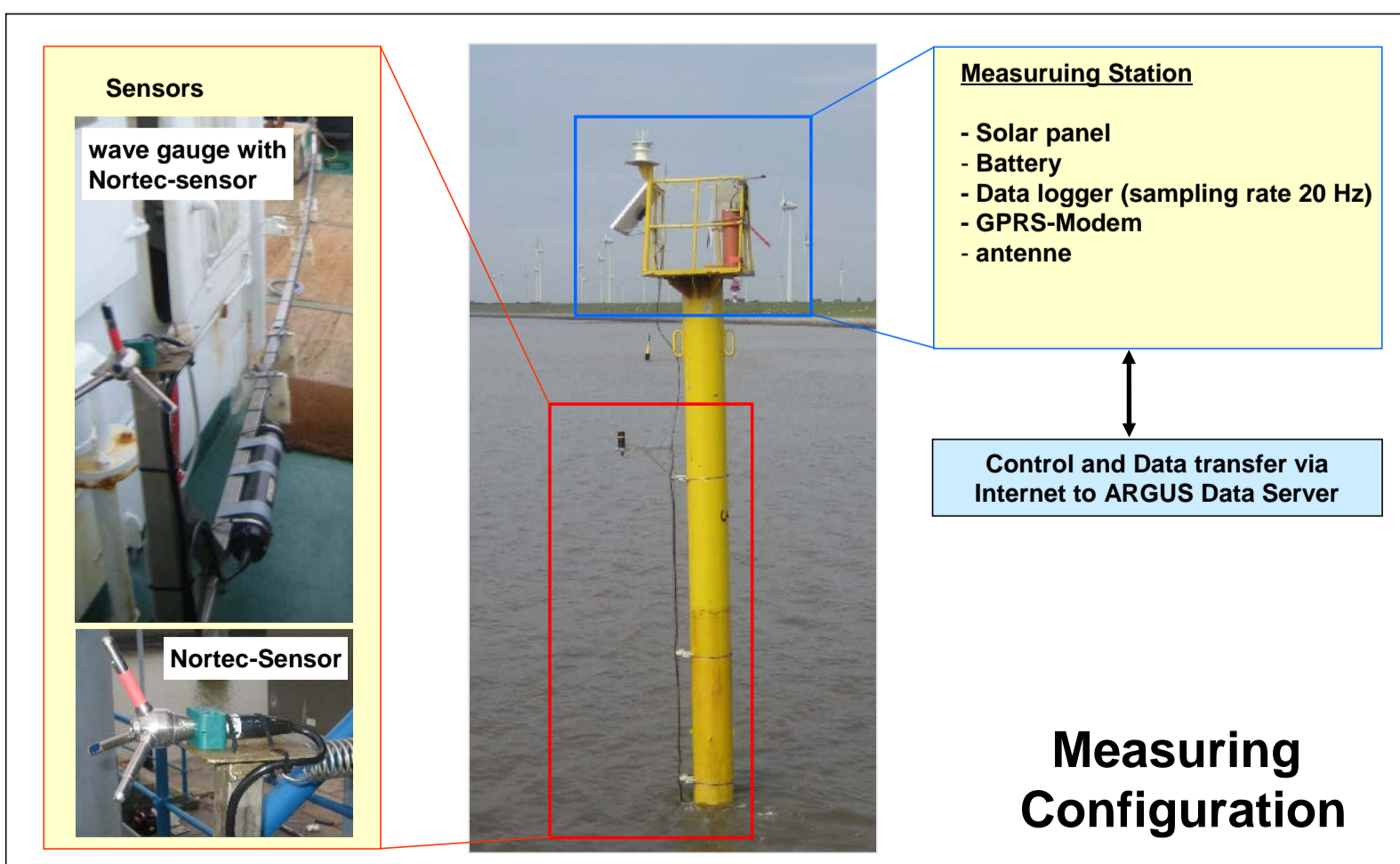
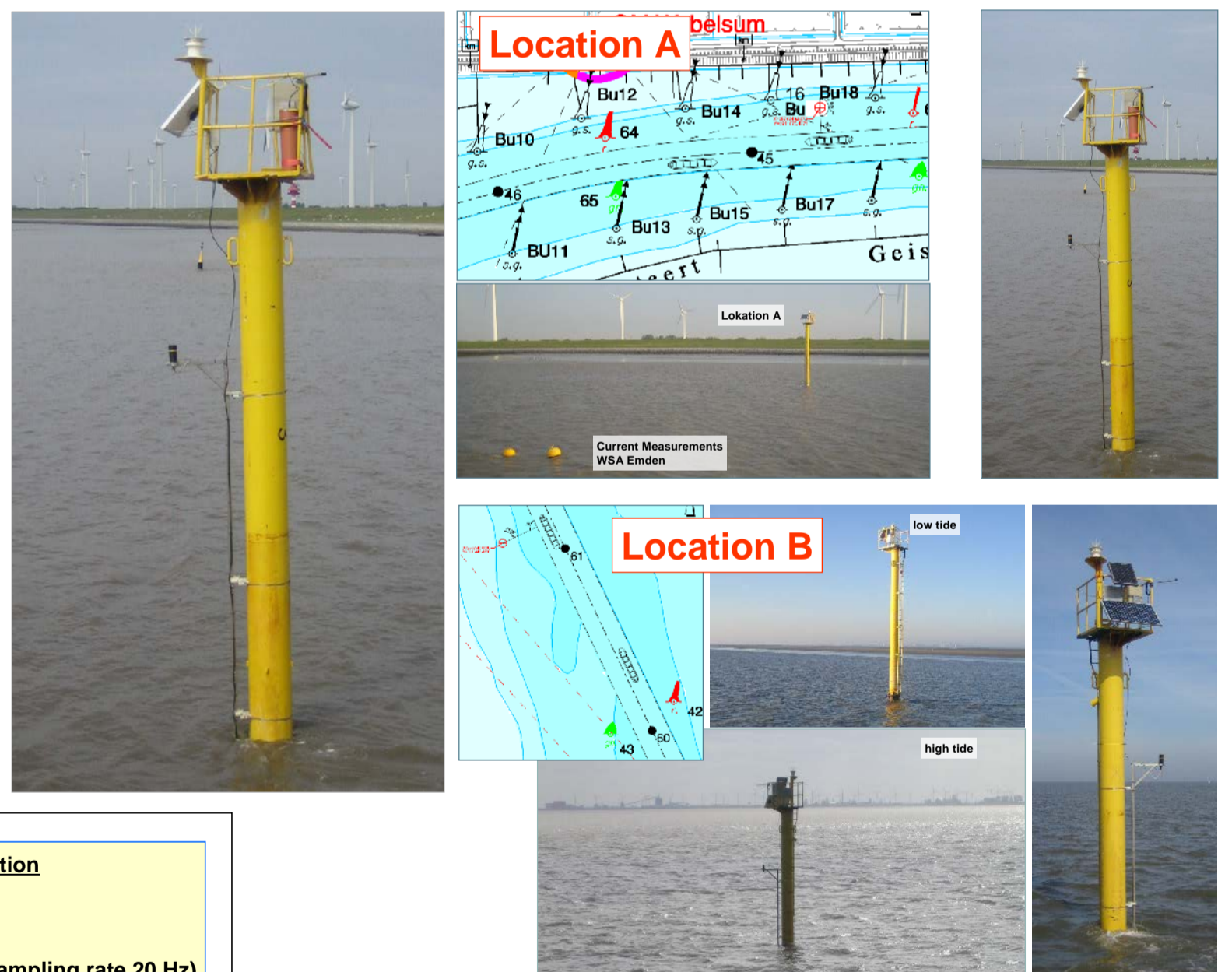
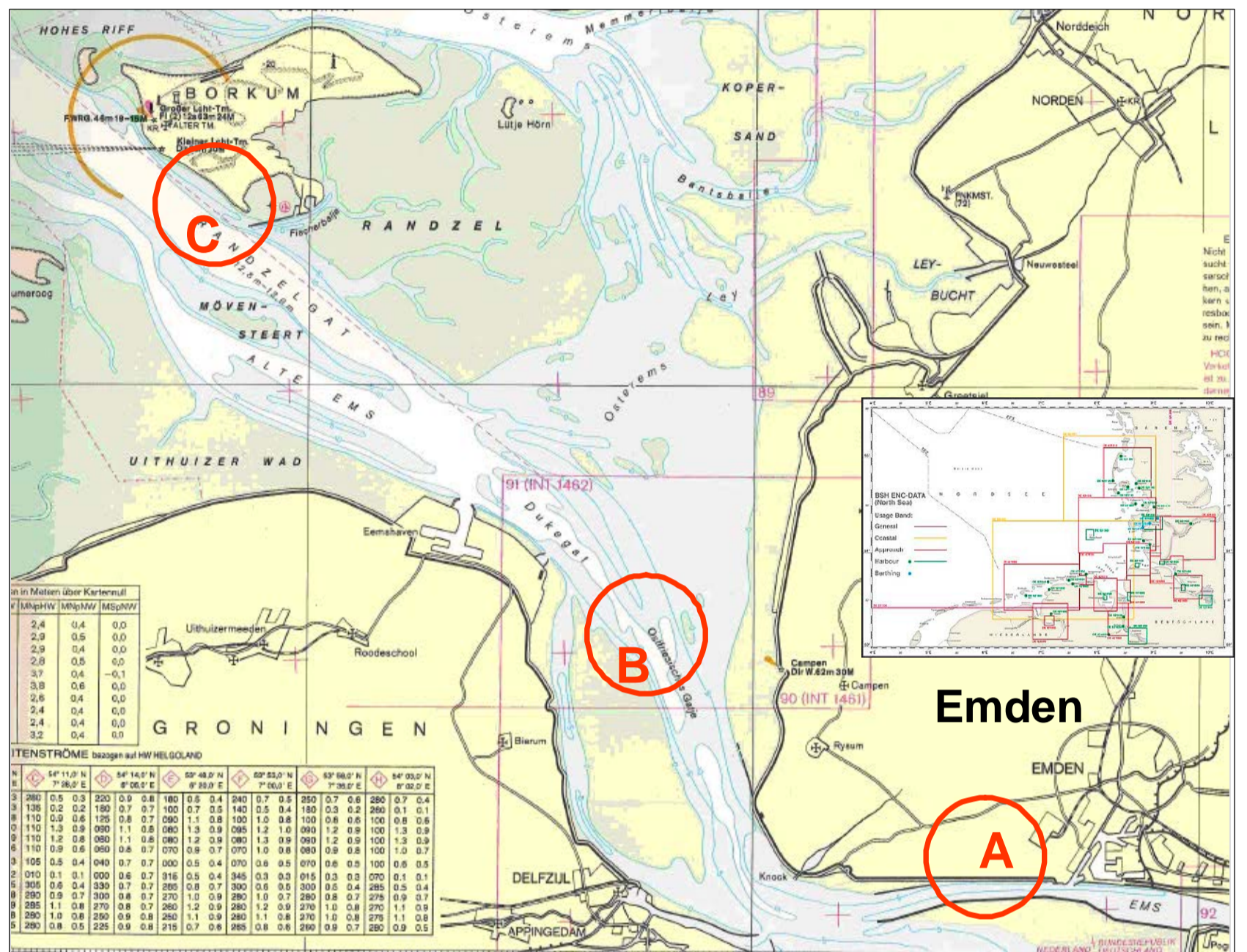
Within the actual planning process on the deepening of the Outer Ems measurements of ship-induced waves and currents at 3 location were conducted and analyzed.

**Measurement Requirements**

- n Independent Measuring Systems
- n Sampling Rate: 20 Hz
- n Measuring Period: 8 weeks
- n Data Transfer via UMTS
- n Data Storage with chronological Synchronism

**Performances:**

- n Planning and installation of instruments measuring waves and currents
- n Operation of 3 measuring locations
- n Documentation and data analysis
- n Analysis of results
- n Expert report





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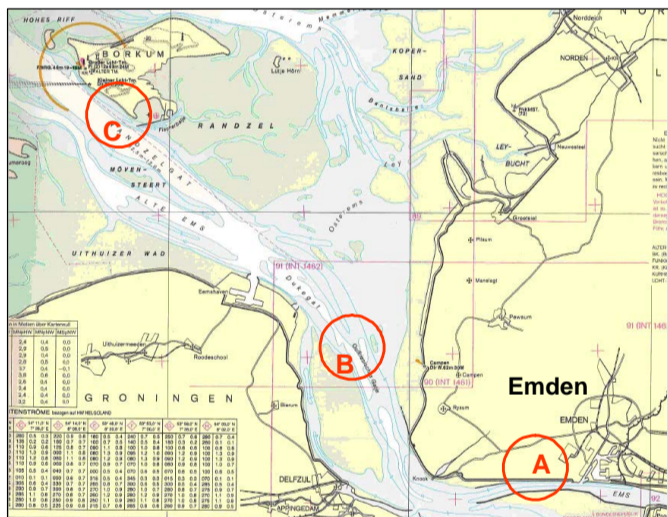
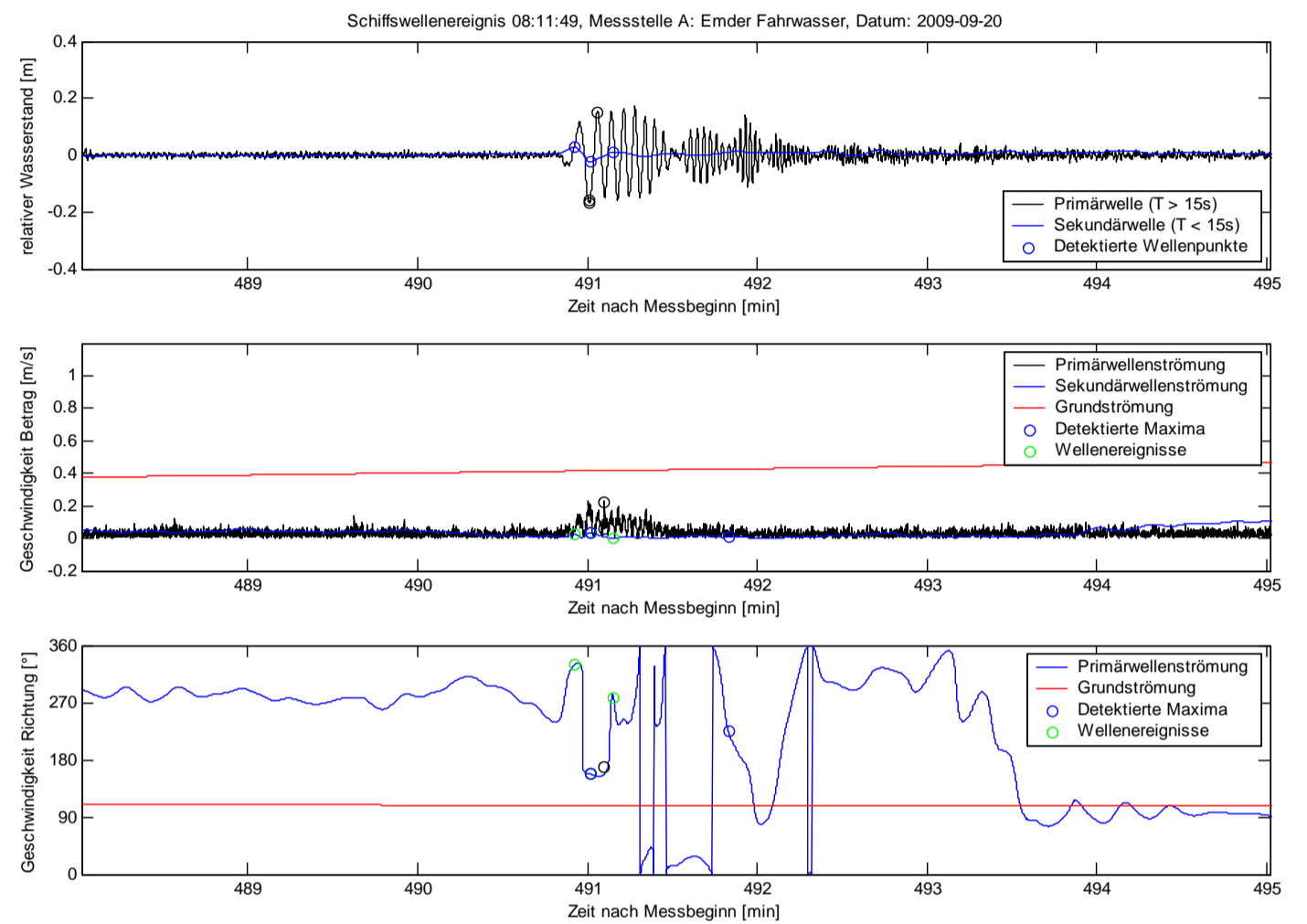
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Within the actual planning process on the deepening of the outer Ems measurements of ship-induced waves and currents at 3 location were conducted.

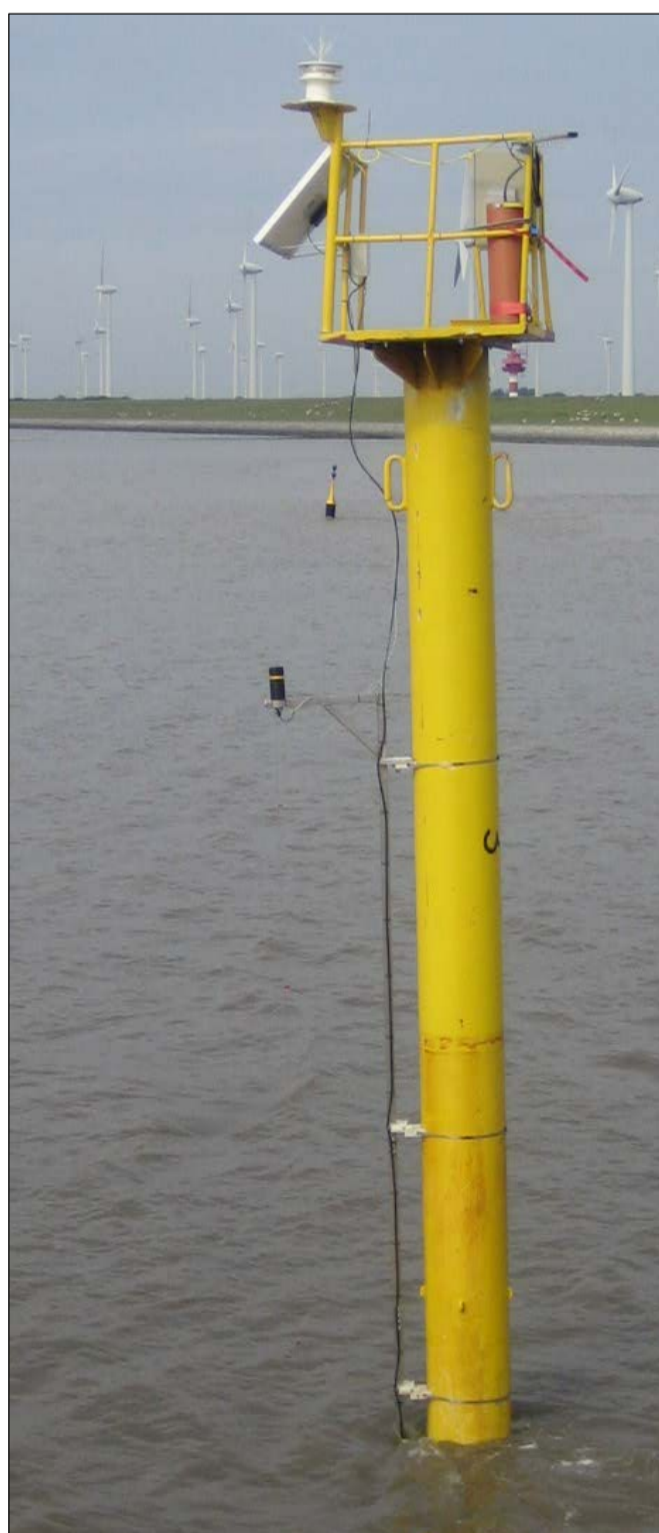
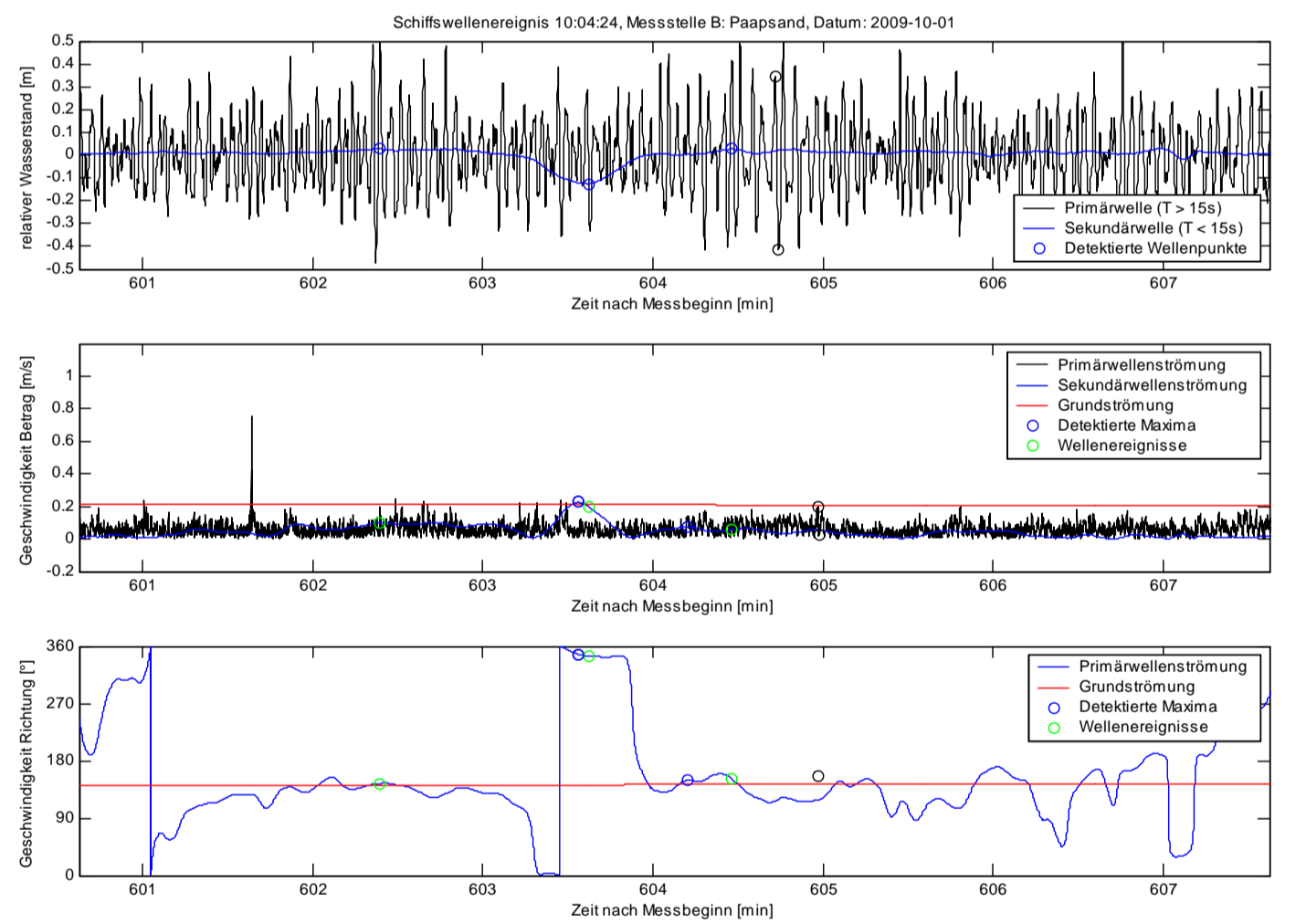
**Nordlicht**

- SOG: 31,3 kn
- Length: 39 m
- Width: 10 m
- Draught: 1,6 m
- Passage: 116 m



**Guardian Leader**

- SOG: 14,8 kn
- Length: 200 m
- Width: 32 m
- Draught: 8,9 m
- Passage: 202 m



**Muensterland**

- SOG: 13,5 kn
- Length: 78 m
- Width: 12 m
- Draught: 3,2 m
- Passage: 727 m

