



# Proteus platform – Twente testbed

SUNRISE Second Open Call Launch Event



Information Society



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# SUNRISE

## *Building and Experimenting with the Internet of Underwater Things*

*Proteus Node &  
Un. of Twente Testing  
Facility*



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# Objectives of Proteus node platform

- Energy efficient research platform for:
  - Network protocol designers:
    - to test new protocols,
    - analyze impact of parameter changes on performance evaluation,
    - to (re)configure node/modem parameters
  - Scientists\end users:
    - to develop new applications,
    - to query data
- Being applied for heterogeneous applications of:
  - Shallow water (lakes, canals, harbors, ...)
  - High density
  - Short range
  - Long lasting (months)
- Low cost, small, easy to deploy platform



# Node HW

- ARM Cortex
- RF and acoustic communication
  - RF for configuration, debugging, and programming (433mhz)
  - Acoustic via proprietary modem (Transducer: WBT-3o transducer)
- Internal sensors: Accelerometer, temperature
- Possibility to connect to GumSTIX
- Versatile sensor interface
  - External via serial connection (RS232, ADC, SPI)
  - Externally powered
- Underwater connector to charge the battery and programming the system



# Proteus Testbed

- The waters at the campus of the University of Twente
  - Lakes, canals, pipes



# Proteus Testbed

- Available for test Q2 and Q3 2015
  - 6 proteus nodes in artificial lake
  - Positioning
  - Environmental sensing
    - Internal sensors (accelerometer and temperature)
  - Communication
    - Tradeoffs error control, bit rate, distance
- Access via SUNRISE Gate and Proteus GUI
- Possible extensions
  - Various external sensors

