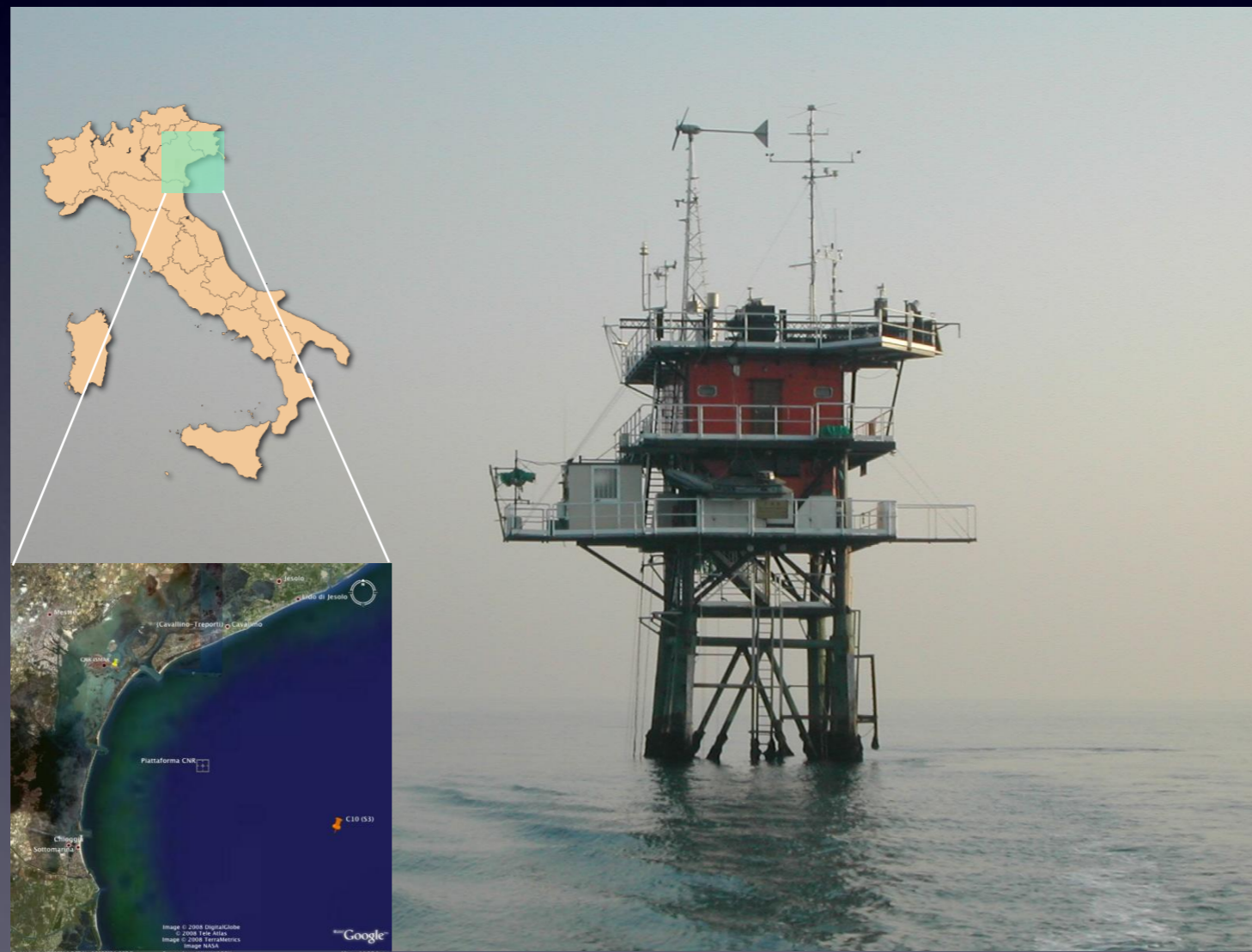


# Aqua Alta

Oceanographic Tower  
12°30'N 45°18'51"E

Institute of Marine Sciences  
National Research Council



[www.ve.ismar.cnr.it/piattaforma/](http://www.ve.ismar.cnr.it/piattaforma/)

November 1966



January 1970



March 1970



# Evolution in 40 years



# First Floor



# Second floor



# Third floor (terrazza)



mast



instrum. jrc



meteo  
City of Venice



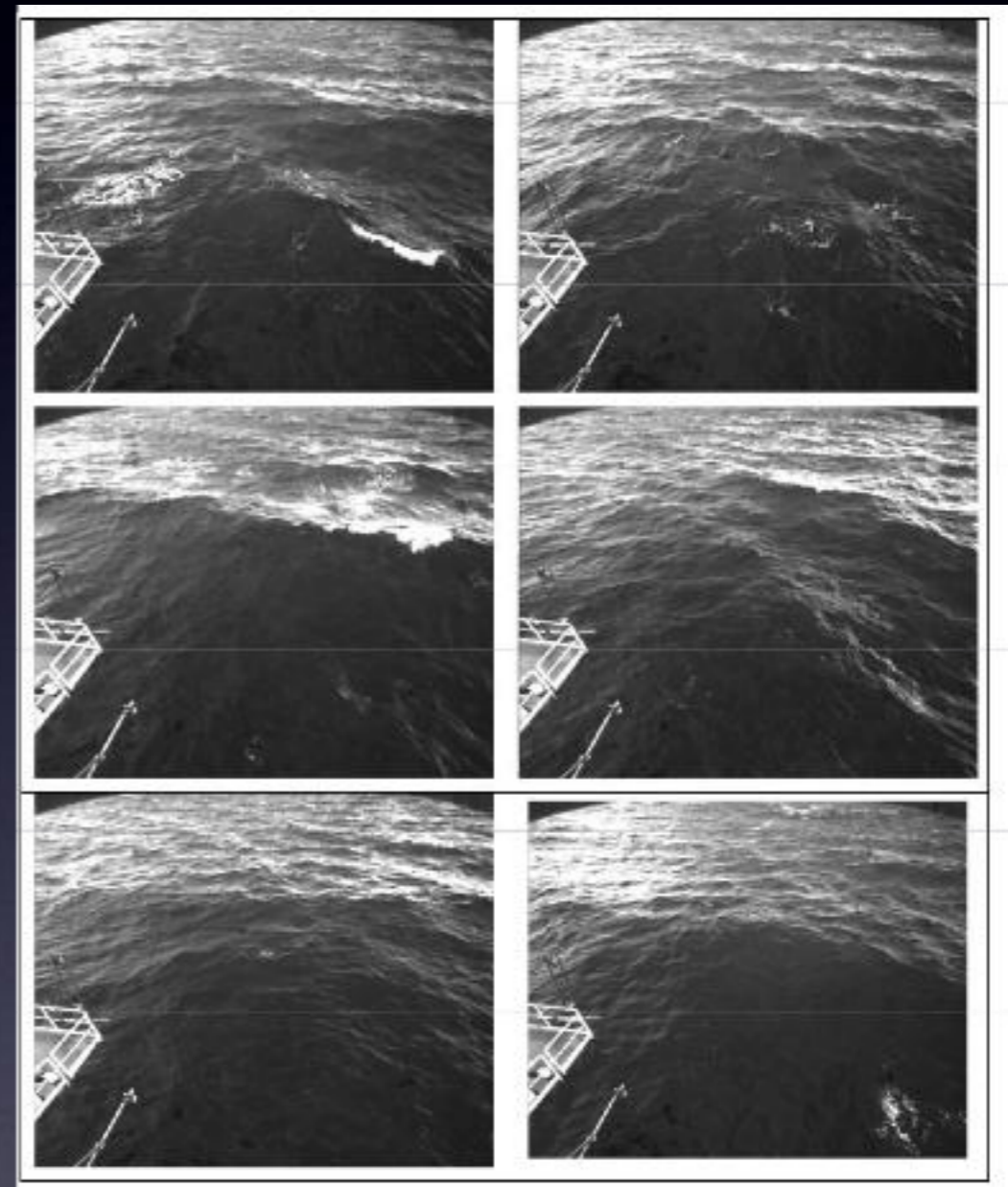
# Running activities

- City of Venice
  - meteo
  - tidal level
- APAT (Nat. Env. Agency)
  - meteo
  - tidal level
- JRC
  - bio optical, remote sensing sea truth



# Space-time extremes and nonlinear statistics

- Height  $\sim 12.5$  m msl
- baseline  $\sim 3$  m
- 2 Cameras
- 5 Megapixel (2456x2058)
- 5 mm focal length
- 10 fps
- Synchronization:  $\Delta t < 1000$   
s





# Awac deployment

- bottom-mounted
- 16 m depth
- around 30 m off the tower
- 40 m rs-232 cable linked
- serial - tcp converter
- tcp allows remote control



# Tower-Institute hyperlink

- experimental WiMAX
- First segment 8 NM
- Second segment 5 NM
- directional antennas with double polarization (horizontal and vertical). High throughput, nominal 54Mbps, real around 20Mbps) with low power consumption (around 6W).





# Piattaforma Acqua Alta

Oceanographic Tower

September 29, 2008

- Waves and currents
- Weather
- Research Projects
- Photo Album
- contact



## Welcome

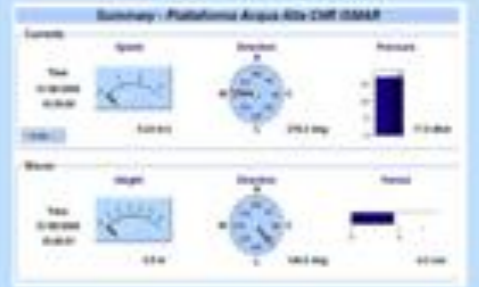
The "Acqua Alta" research tower was installed on January 1970 off the Gulf of Venice, Italy, by Micoperi for the CNR. This tower consists of a platform containing an instrument house, supported by a steel pipe structure, similar to that of an oil well derrick. The pipe structure is hammered 22 m into the bottom through each of its four hollow legs. The tower is situated in 16 m of water (MLLW). The Gulf of Venice site was chosen because it provided the best combination of desirable oceanographic features and practical operating convenience.

With the collaboration of [Consorzio Venezia Nuova](#) and [Magistrato alle Acque](#) the instruments have been upgraded and a broadband wireless bridge has been installed so all the instruments can be controlled remotely and real time data are available with no delays.

## News

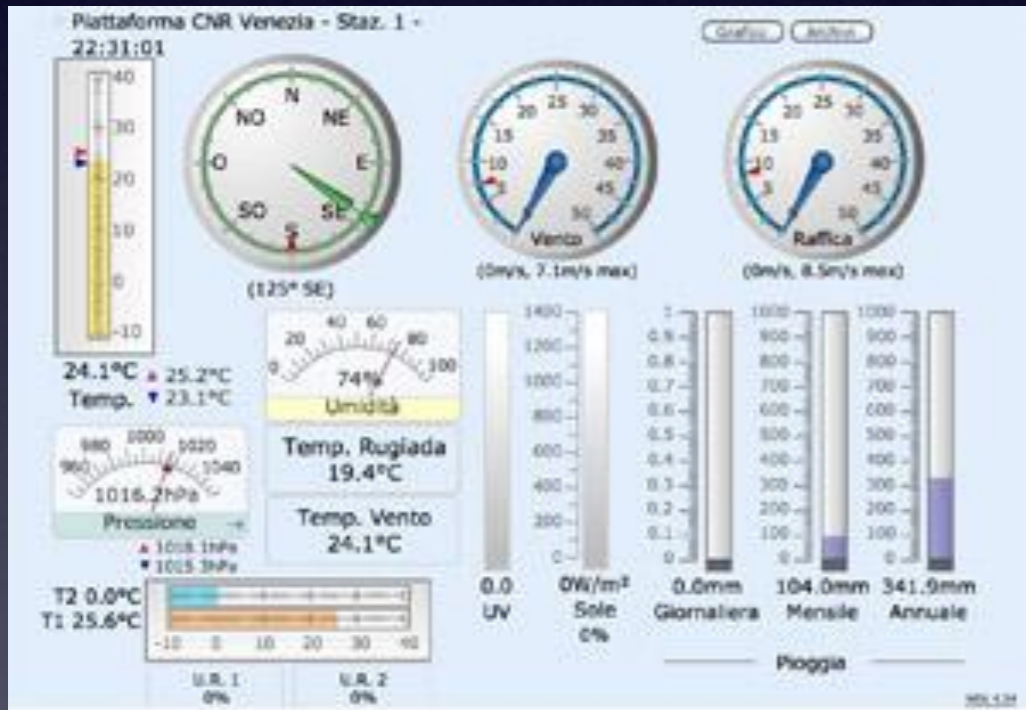


New graphic interface for weather display  
[Read more >](#)

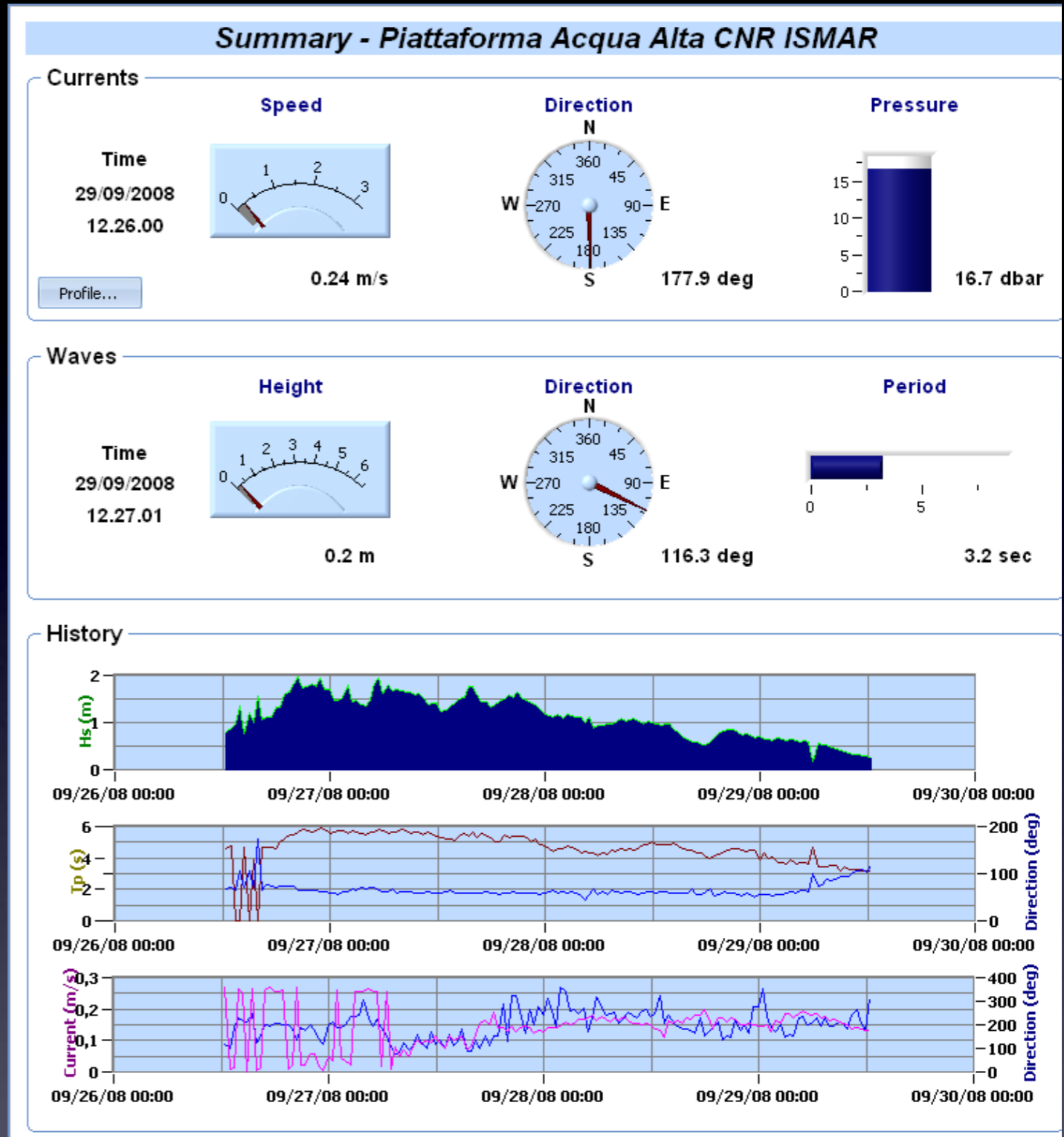


Real time wave and currents display  
[Read more >](#)

real time  
data web  
publishing



meteo



onde

# Web access by Google analytics



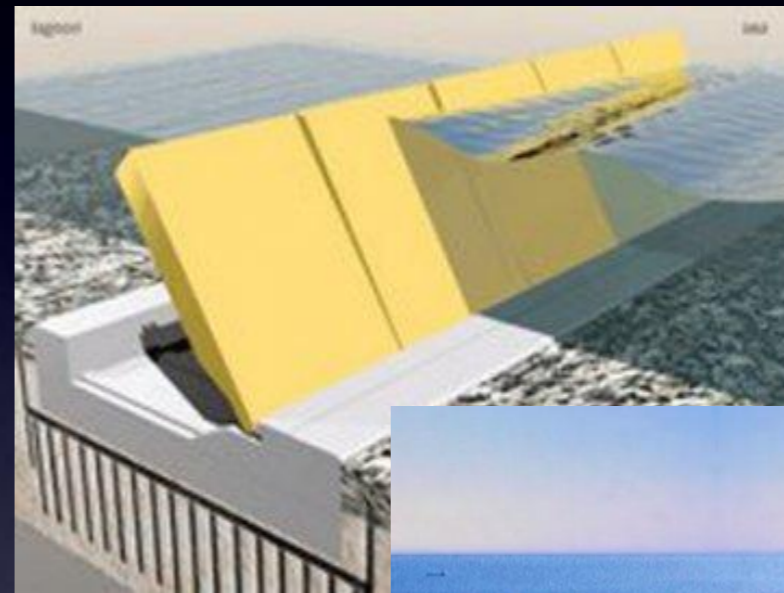
More than 200,000 contacts since september 2009  
around 1500 contacts per day with peaks over 4000  
during storms.

More than 20 Mbs upload bandwidth (mostly due to  
webcam streaming)

# Venice High Tides a “Glocal” issue



*Venice, CNR Institute, 1 december 2008*



*Couple of days ago*



Plattaforma Oceanografica "Acqua Alta"

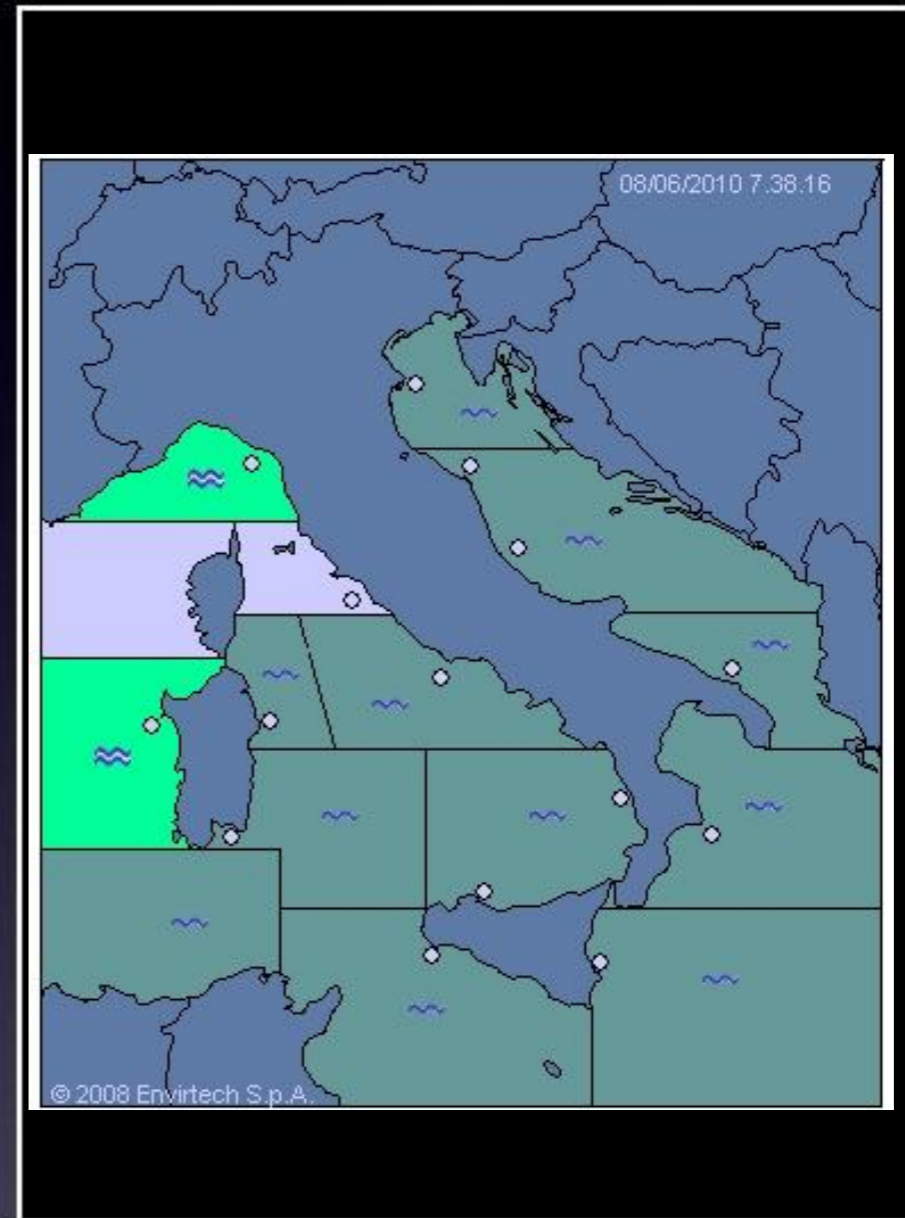
 2.9°C	 95%	 40.7 kts da NE	 3.6 mm	 1010.2 hPa
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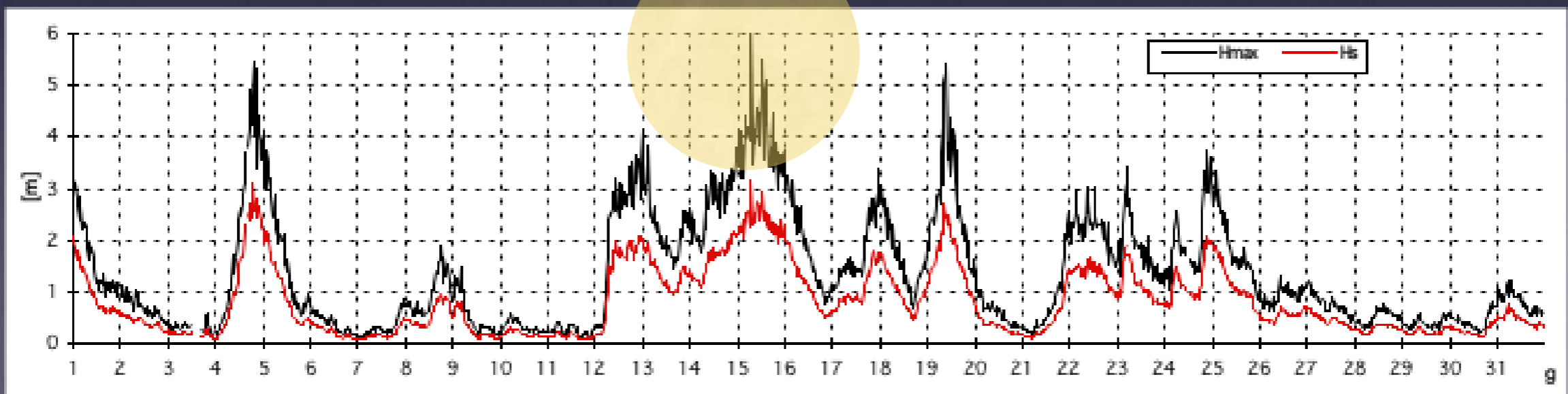
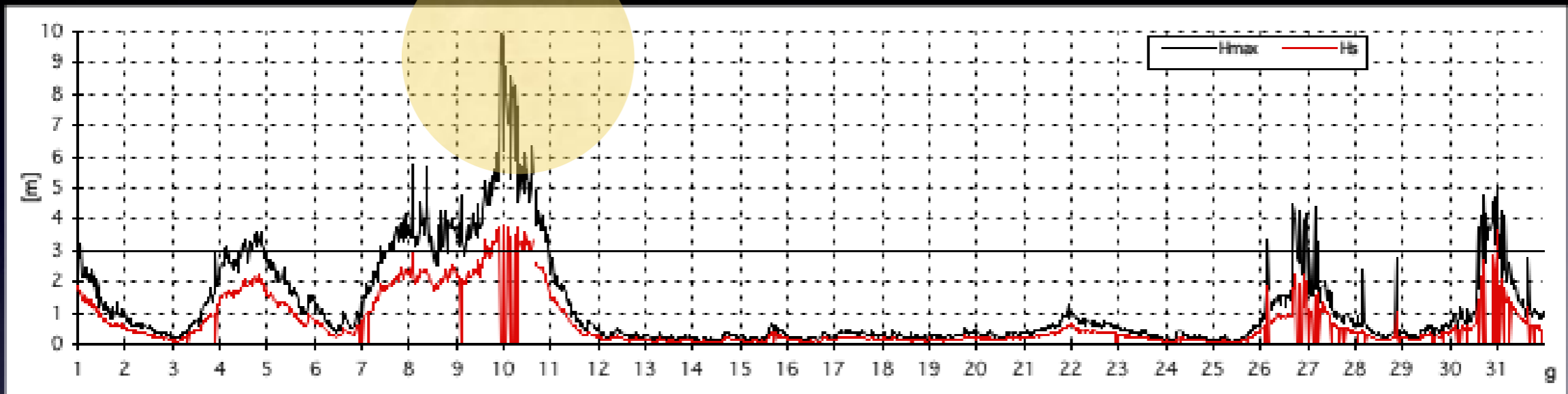
# RON

National Ondametric Network

15 Axys Watchkeeper



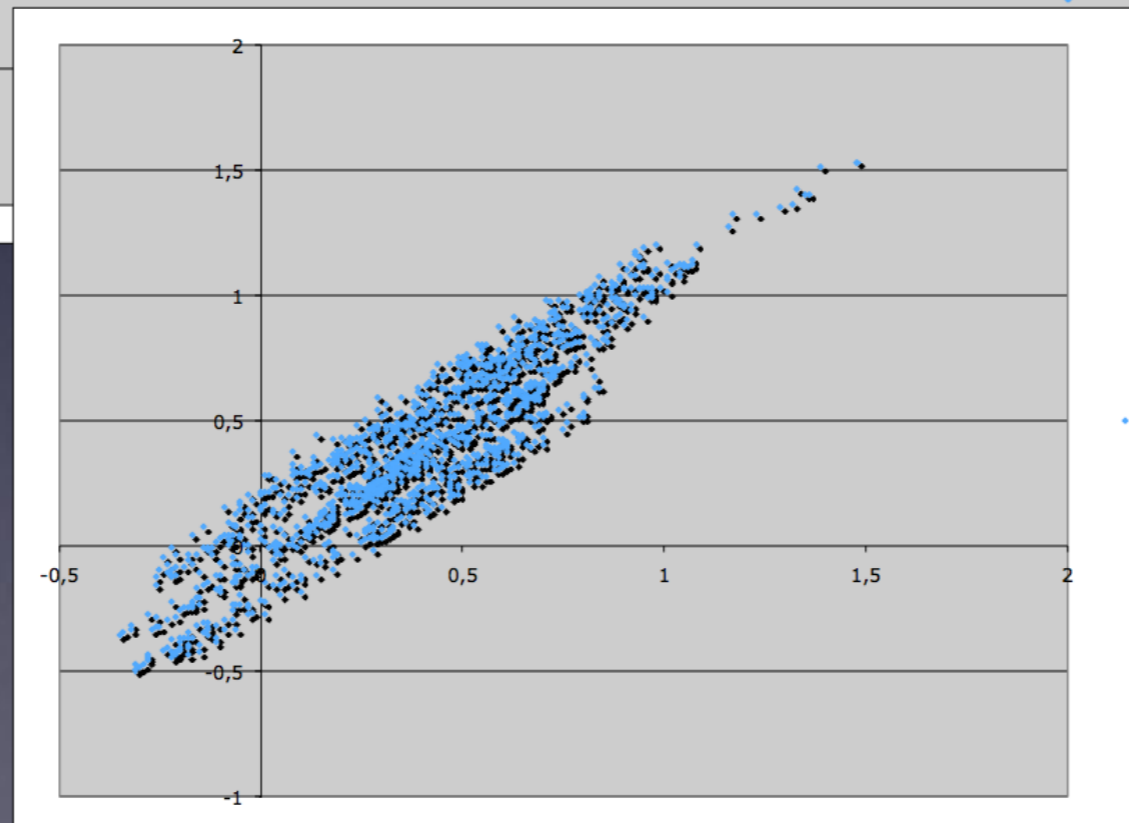
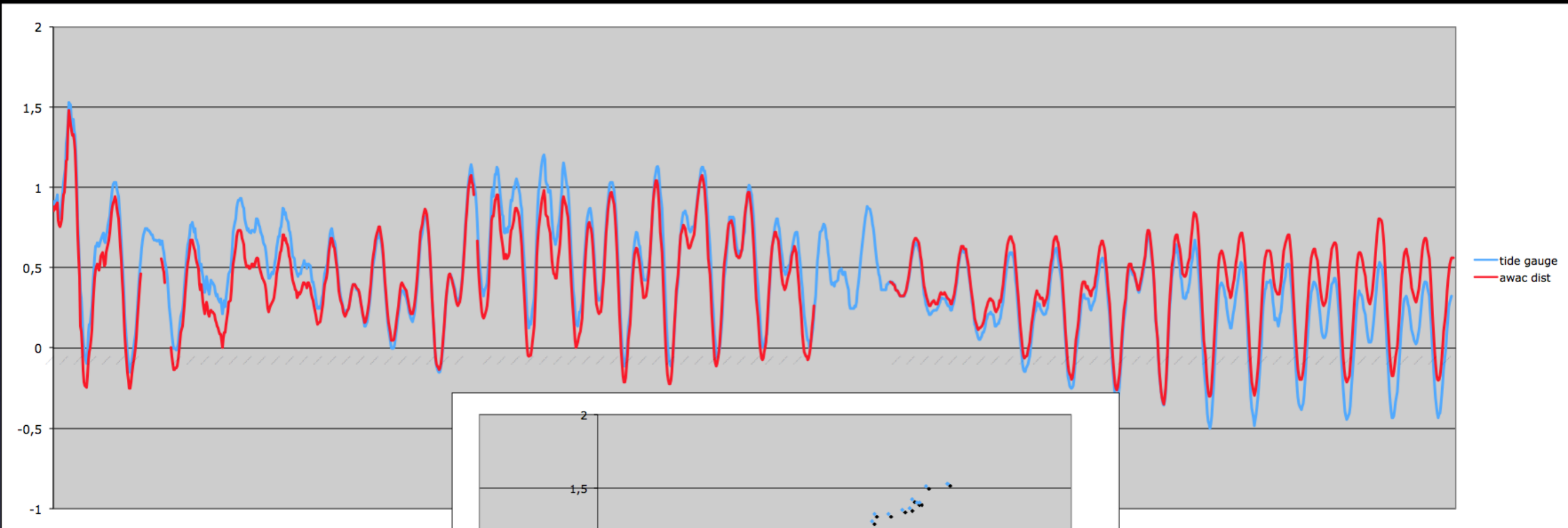
# Freak waves?



# Webcams helps



# AWAC as tidal gauge



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AWAC

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Tidal gauge

# AWAC performance

Wind



Wave height



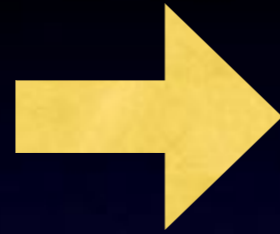
# AWAC vs other systems

# Awac strenght & weakness

- reliability (after some upgrades)
- Responsive support
- very low maintenance needs. Fouling has low influence on readings
- seawate still lacking manuals
- very low maintenance needs
- in the last months we're experiencing lots of "bad detects" during storms setups

# perspectives

Instruments testing



Welcome Nortek!

Collaboration for calls



FP7 Infrastructure

Thanks for your  
attention

and thanks to

Ketil

Øistein

Jardar

Torstein

Terje

and all the Nortek staff