Overview of international
wave measuring buoy networks

Webinar organized by Cerema in collaboration with

Perspective from Italy

The Italian wave buoys network (RON)

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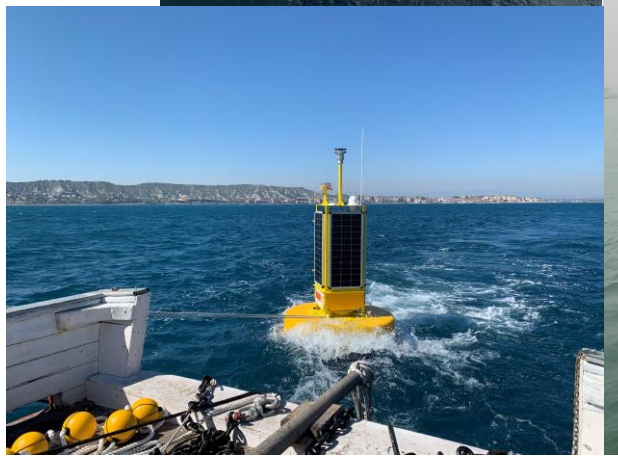
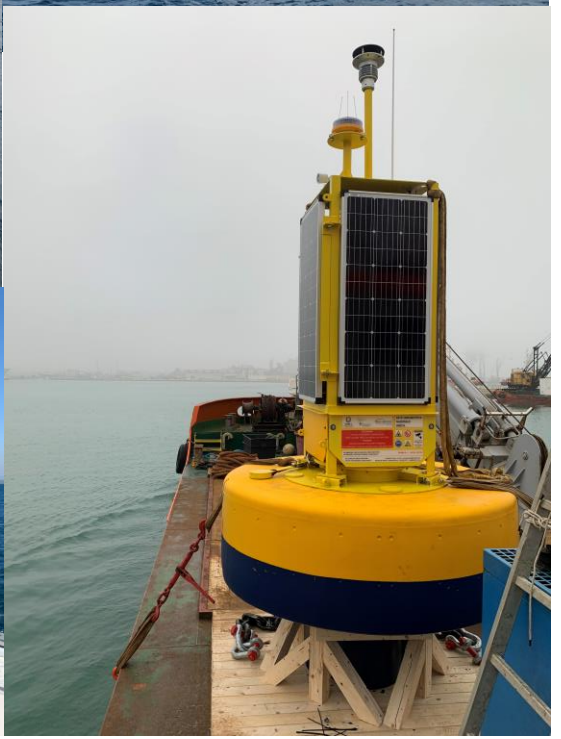

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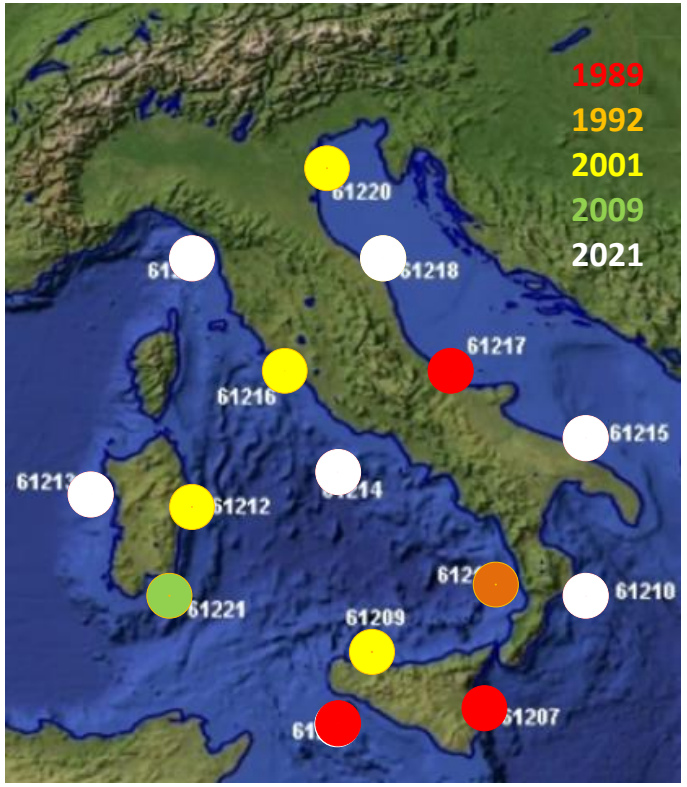
Outlines

-The evolution of the Italian wave buoys network RON

- The present RON network:
  - -Data transmission
  - -Data distribution

- Needs and priorities, gaps and barriers identified, possible initiatives

Evolution of the Italian wave buoys network RON



BUOY CODE	SHORE STATION	LATITUDE	LONGITUDE	Depth (meters)
61207	CATANIA	37°26'24'N	15°08'48'E	90
61208	MAZARA	37°31'05'N	12°32'00'E	85
61209	PALERMO	38°15'30'N	13°20'00''E	145
61210	CROTONE	39°01'25'N	17°13'12'E	80
61211	CETRARO	39°27'12'N	15°55'06'E	100
61212	SINISCOLA	40°37'00'N	09°53'30'E	130
61213	ALGHERO	40°32'55'N	08°06'25'E	85
61214	PONZA	40°52'00'N	12°57'00'E	115
61215	MONOPOLI	40°58'30'N	17°22'40'E	85
61216	CIVITAVECCHIA	42°14'41'N	11°33'14'E	62
61217	ORTONA	42°24'24'N	14°32'12''E	72
61218	ANCONA	43°49'26'N	13°43'10'E	70
61219	LA SPEZIA	43°55'45'N	09°49'40'E	85
61220	VENEZIA	45°20'00'N	12°31'00'E	17
61221	CAGLIARI	39°06'54'N	09°24'18'E	150

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Evolution of the Italian wave buoys network RON

1989 - 2001

Wavec Datawell

Interval between recordings: 3 hrs o ½ hrs (over a threshold)
1,28 Hz **sampling frequency**
Data Analysis on 20 minutes recording

1999-2001

Waverider Datawell

Interval between recordings: ½ hrs
4 Hz **sampling frequency**
Solid state sensors
Data Analysis on 26 minutes recording
Satellite tracking via Inmarsat D+

2002-2008

Triaxys Axis

2009 -2014

Watchkeeper Axis

2021...

WMO GTS
BUFR (FM94-Version 4)
Abbreviated Header:
IOBD23 LIIB
Originating Centre: 80 (ROMA)
Originating Subcentre: 0

WMO	61214	61221	61208	61209	61210	61211	61212	61216	61217	61218	61219	61213	61215	61207	61220
	• Ponza	• Cagliari	• Mazara	• Palermo	• Crotone	• Cetraro	• Siniscola	• Civitavecchia	• Ortona	• Ancona	• Spezia	• Alghero	• Monopoli	• Catania	• Venezia

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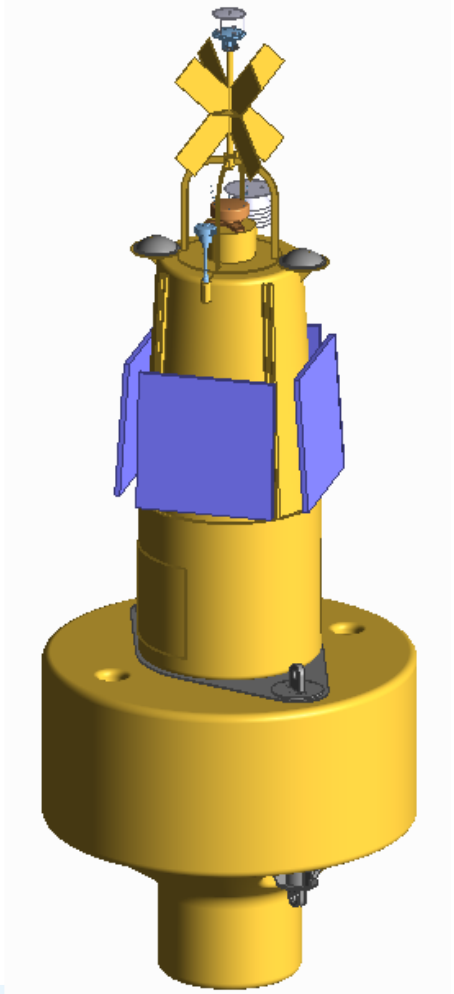
The present RON network

The Italian Wave Buoys Network (RON) has been revamped at the beginning of 2021 after a long period of stop. **Seven** new buoys have been moored along the Italian coast at the same location where the previous buoys were moored.

Scope

•Support:

- coastal engineering and security
- safety of navigation
- research, climatology studies
- monitoring sea state
- improving model forecast



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The present RON network

Real-time monitoring:
- offshore
  - -Meteorology
  - -Buoys
- onshore:
  - -Meteorology
  - -Tide gauges

Mooring depth≅ 100 m

Meteorological	• wind speed • wind direction • wind gust • air temperature • barometric pressure • relative humidity
Water	• sea surface temperature • significant and maximum wave height • wave period and direction
Image	Video Monitoring
Position (GPS)	• Latitude, longitude
Data transmission	• Satellite (Iridium) • AIS • soon on GTS

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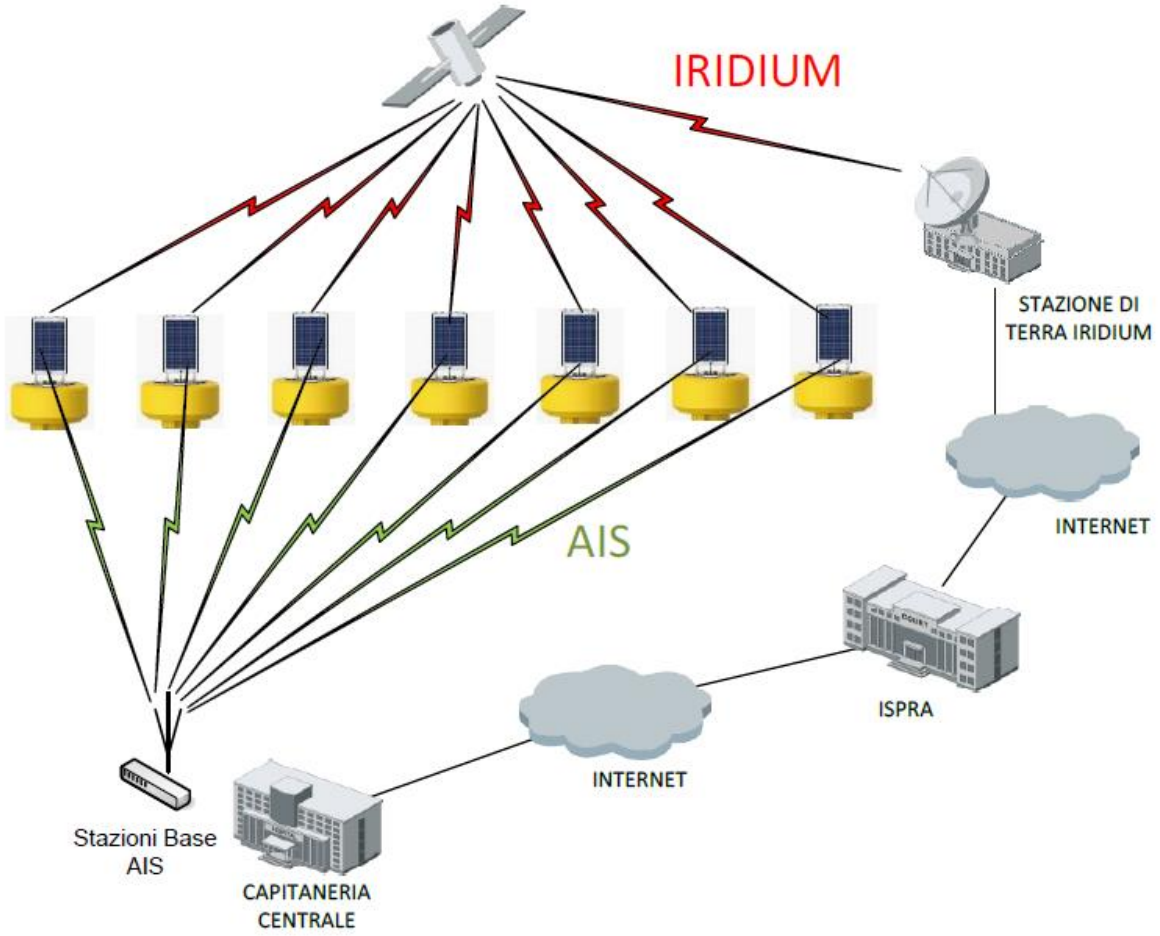
The present RON network: Data Transmission

Principal channel through AIS radio VHF

Second channel through IRIDIUM modem satellite



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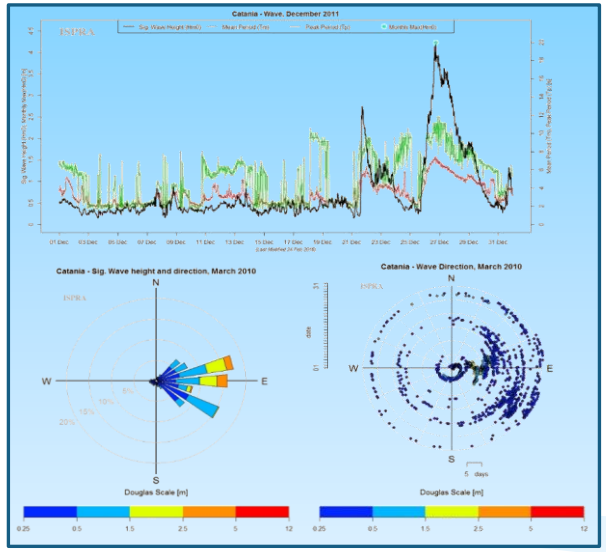
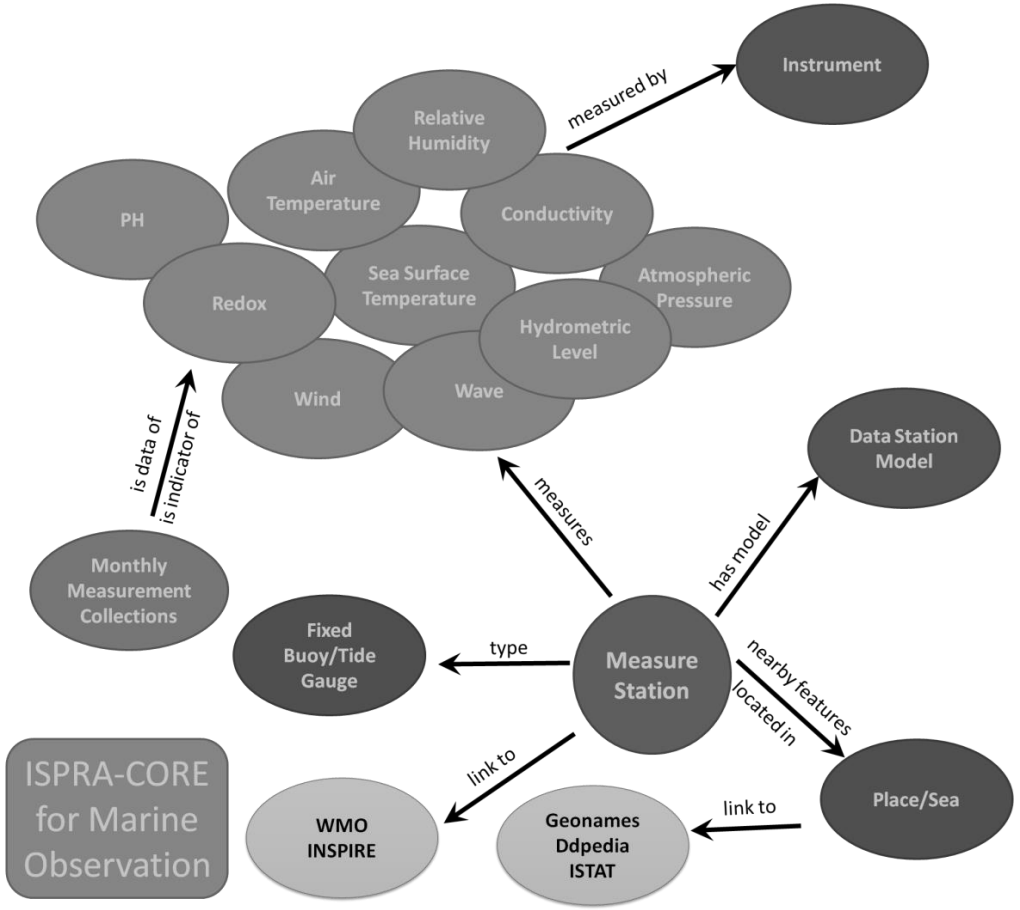
The present RON network: Data Distribution

Real time data of RON are available at the website: ***www.mareografico.it***
Historical data of RON network are distributed in F.A.I.R. way through ***http://dati.isprambiente.it***





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Needs and priorities, gaps and barriers identified, possible initiatives

Needs and priorities:

- *Converging on homogenized QC procedures*
- *Implementation of new monitored parameters (biogeochemical…)*

Major gaps and barriers identified:

- *Sensors long term maintenance (human resources and high costs)*
- *Sensors obsolescence*
- *Data transmission problems*

Possible initiatives

- *Converging to low cost solutions for maintenance and sustainability of fixed platforms*

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Rijkswaterstaat Ministerie van Infrastructuur en Milieu

CDIP coastal data information program

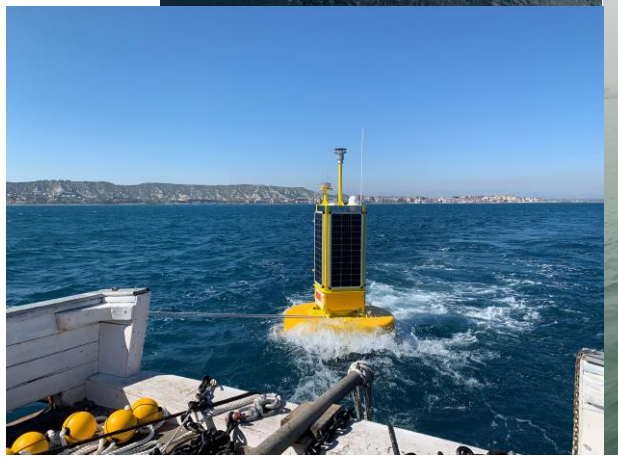
National Oceanography Centre

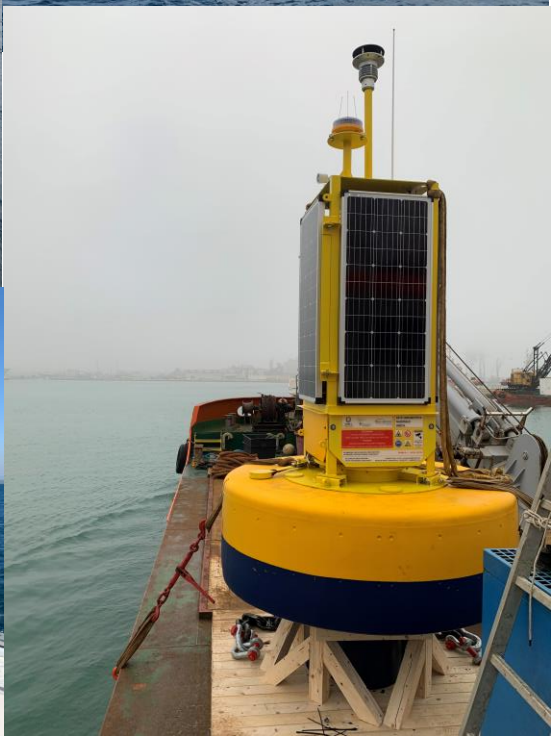
ISPRA Italian National Institute for Environmental Protection and Research

Vlaanderen verbeelding werkt

FMI

Vegagerðin





Thank you

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