INTEGRATED ENVIRONMENTAL MONITORING OF THE TARANTO PORT AREA:
Implementation and long-term management of an area monitoring network to control the overall quality status of the Taranto port land-sea system.

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Implementation and long-term management of an area monitoring network to control the overall quality status of the Taranto port land-sea system.

Contractor:

ambiente s.p.a. consulenza & ingegneria *esperienza per l'ambiente* · T&A TECNOLOGIA & AMBIENTE · cisa s.p.a. · studio EFFEMME chimica applicata

PAC Infrastrutture e Reti 2014-2020

Ministero delle Infrastrutture e dei Trasporti

Service partly financed with PAC Infrastrutture e Reti 2014-2020 – Linea di azione 5 dell'Asse D, co-financed by the European Union.

Amount Financed: € 8.865.312,29
Total service amount: € 10.595.377,03

Project manager: Ing. Gianluca SEMITAIO
Environment and energy efficiency section – ADSP MI

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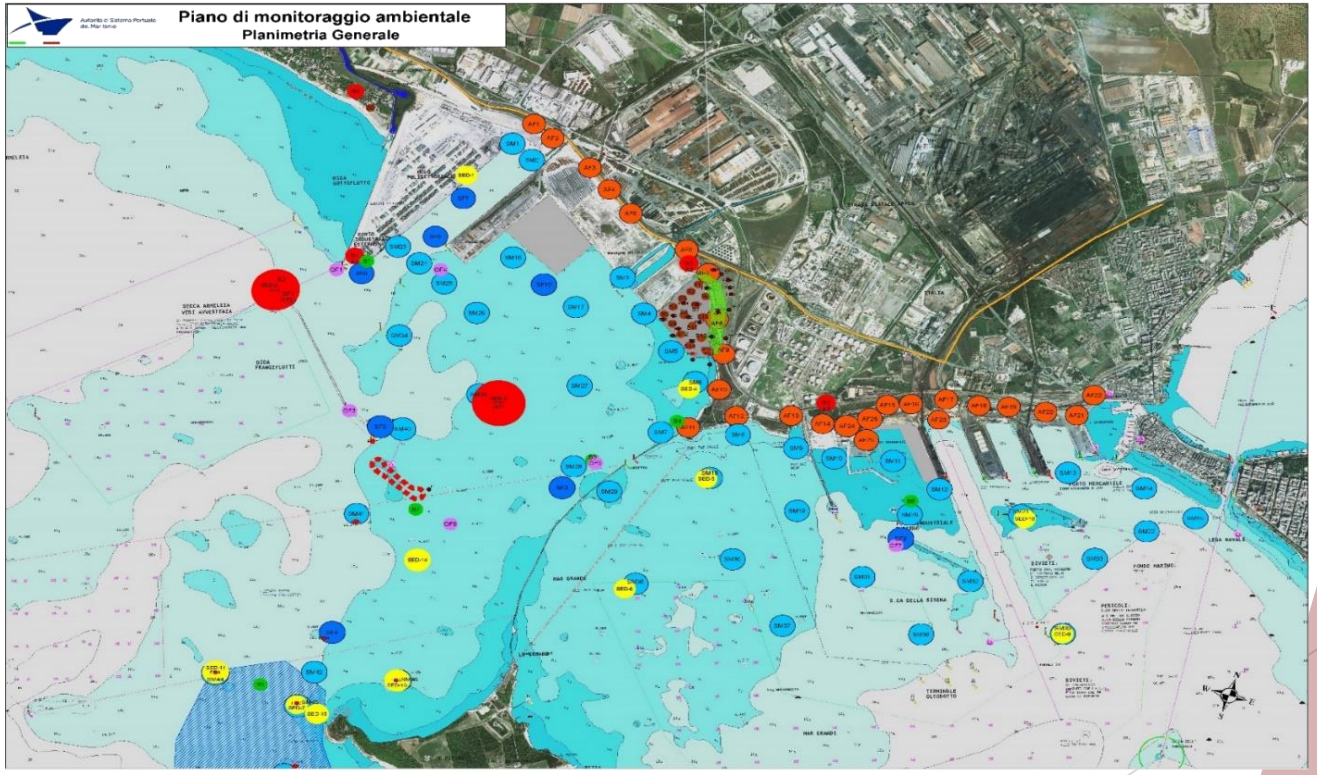
INTEGRATED ENVIRONMENTAL MONITORING OF THE TARANTO PORT AREA

In general, the monitoring activities involve, depending on the environmental matrix, the use of sensors/measuring stations and/or the collection of samples (in double portions) to be subjected to analysis (by a laboratory with UNI CEI EN ISO/IEC 17025:2018 quality certification) to determine the chemical/biological/ecotoxicological parameters of interest.

- **Sea Water**
- **Underground Water**
- **Air**
- **Noise**
- **Soil**
- **Sediments**
- **Flora and Fauna**
- **Filter Feeders**
- **Benthos**



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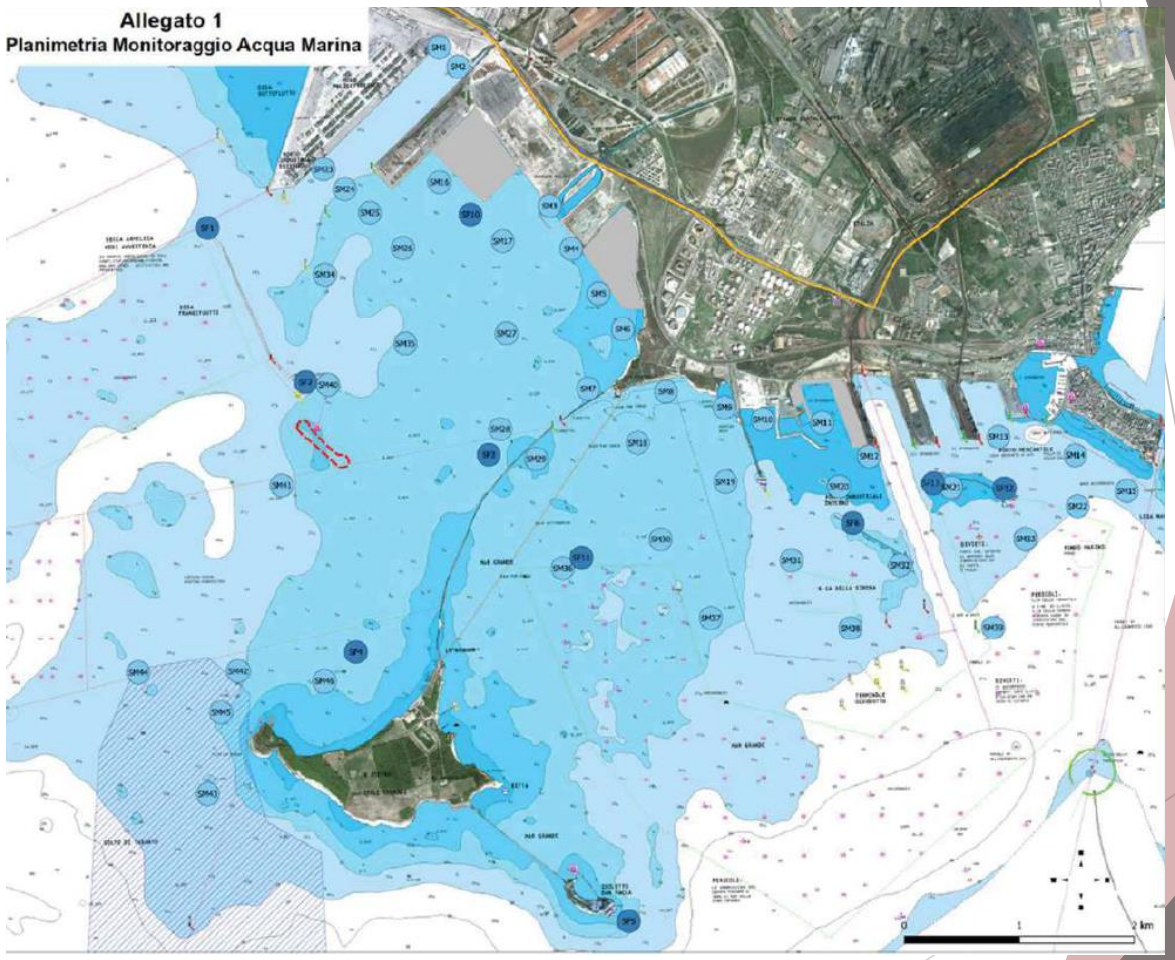
SEA WATER MATRIX

10 FIXED STATIONS (SF1,SF2,SF3,SF4, SF5,SF6,SF10,SF11, SF12 E SF13)

46 MOBILE STATIONS (DA SM1 A SM46)



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SEA WATER MATRIX

10 FIXED STATIONS

Measurement of depth, pH, temperature and conductivity (from which salinity is derived), dissolved oxygen, redox potential, chlorophyll(a) and turbidity

Detection of current direction and speed

Water sampling with determination of the following parameters: : TSS and TOC (on the as-is), microbiological analysis (including Escherichia coli, Total Coliform Bacteria, Streptococcus Faecalis, Salmonella, Clostridium perfringens Spores), ecotoxicological assays, metals (in particulate and dissolved forms), hydrocarbons C<12 and C>12 (particulate), PAHs (total and speciation, with particular reference to benzo(J)fluoranthene and benzo(a)pyrene) and PCBs (total and speciation) at high resolution (particulate), Organotin Compounds (OTCs), including TBT (particulate)

SEA WATER MATRIX

10 FIXED STATIONS

SEA WATER MATRIX

46 MOBILE STATIONS

Measurement of depth, pH, temperature and conductivity (from which salinity can be derived), dissolved oxygen, redox potential, chlorophyll(a) and turbidity

Detection of current direction and speed

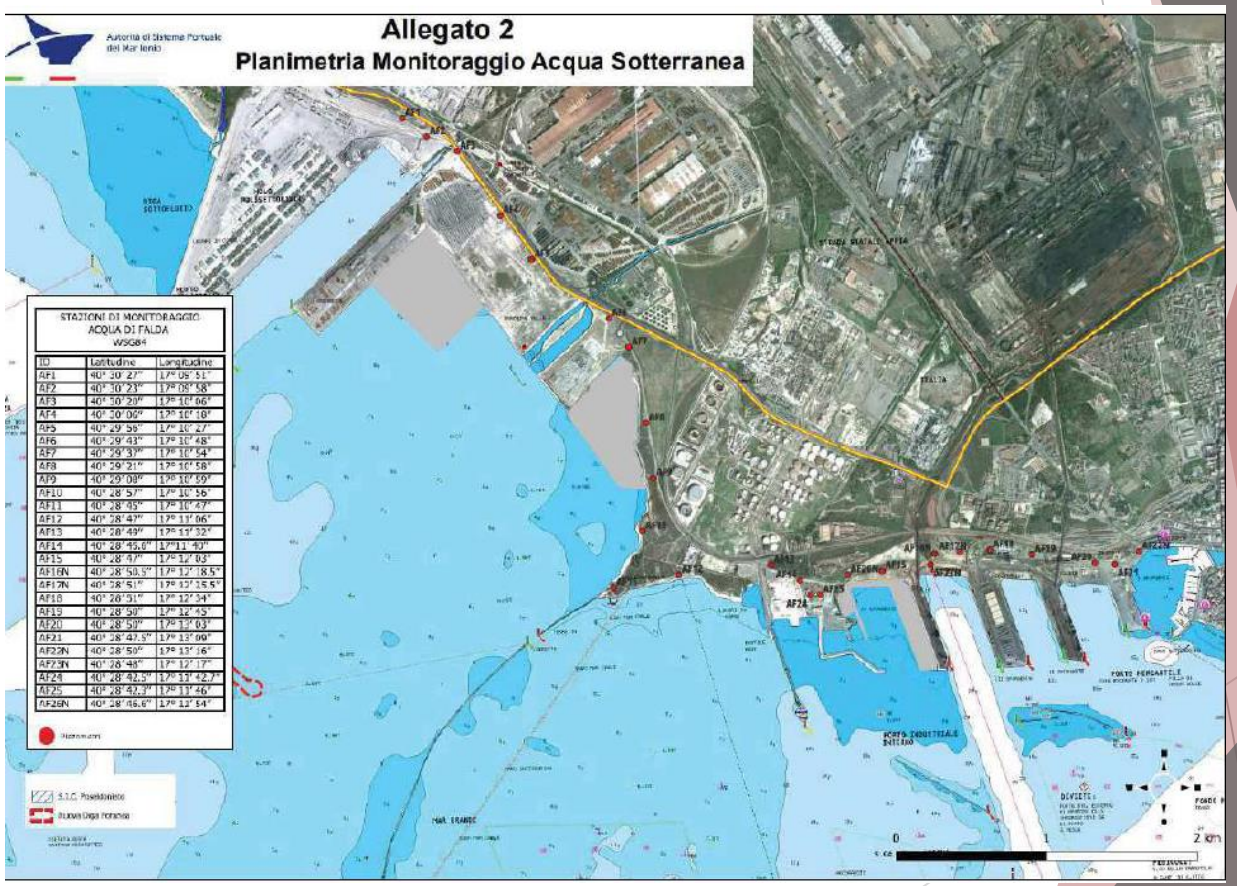
Water sampling with determination of the following parameters: TSS and TOC (on the as-is), microbiological analysis (including Escherichia coli, Total Coliform Bacteria, Streptococcus Faecalis, Salmonella, Clostridium perfringens Spores), ecotoxicological assays, metals (in particulate and dissolved forms), hydrocarbons C<12 and C>12 (particulate), PAHs (total and speciation, with particular reference to benzo(J)fluoranthene and benzo(a)pyrene) and PCBs (total and speciation) at high resolution (particulate), Organotin Compounds (OTCs), including TBT (particulate)

UNDERGROUND WATER MATRIX

26 PIEZOMETERS

Measurement of depth, pH, temperature and conductivity (from which salinity can be derived), dissolved oxygen, redox potential, chlorophyll(a) and turbidity

Collection of samples for chemical, physical and microbiological analyses



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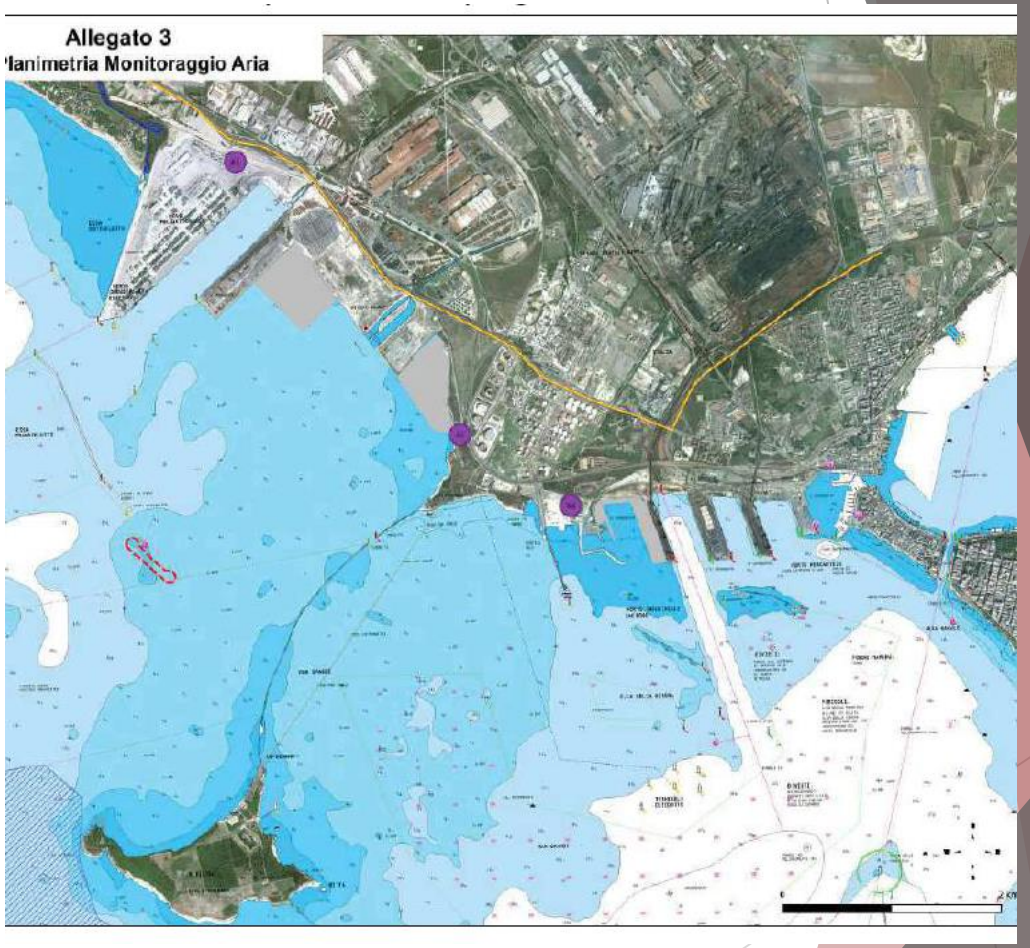
UNDERGROUND WATER MATRIX

AIR MATRIX

3 FIXED STATION

Detection of PM10 and PM2,5, SO2, NO/NO2/NOx, CO, O3 and BTEX with automatic analyser

Meteorological Parameters



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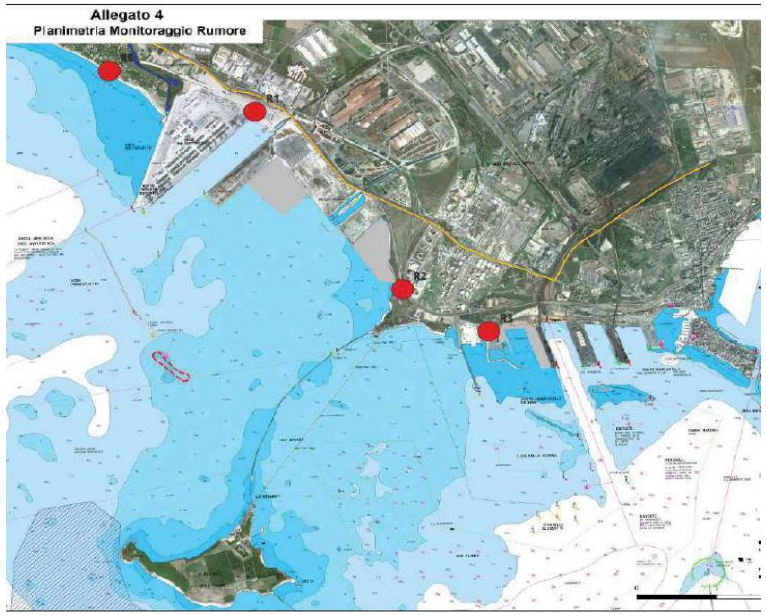
AIR MATRIX

3 FIXED STATION

NOISE MATRIX

4 CONTROL UNITS

Sound pressure level monitoring, Leq(A), percentile levels, Lmax and Lmin, background noise levels, peak level, sound level time history, direction of a noise source



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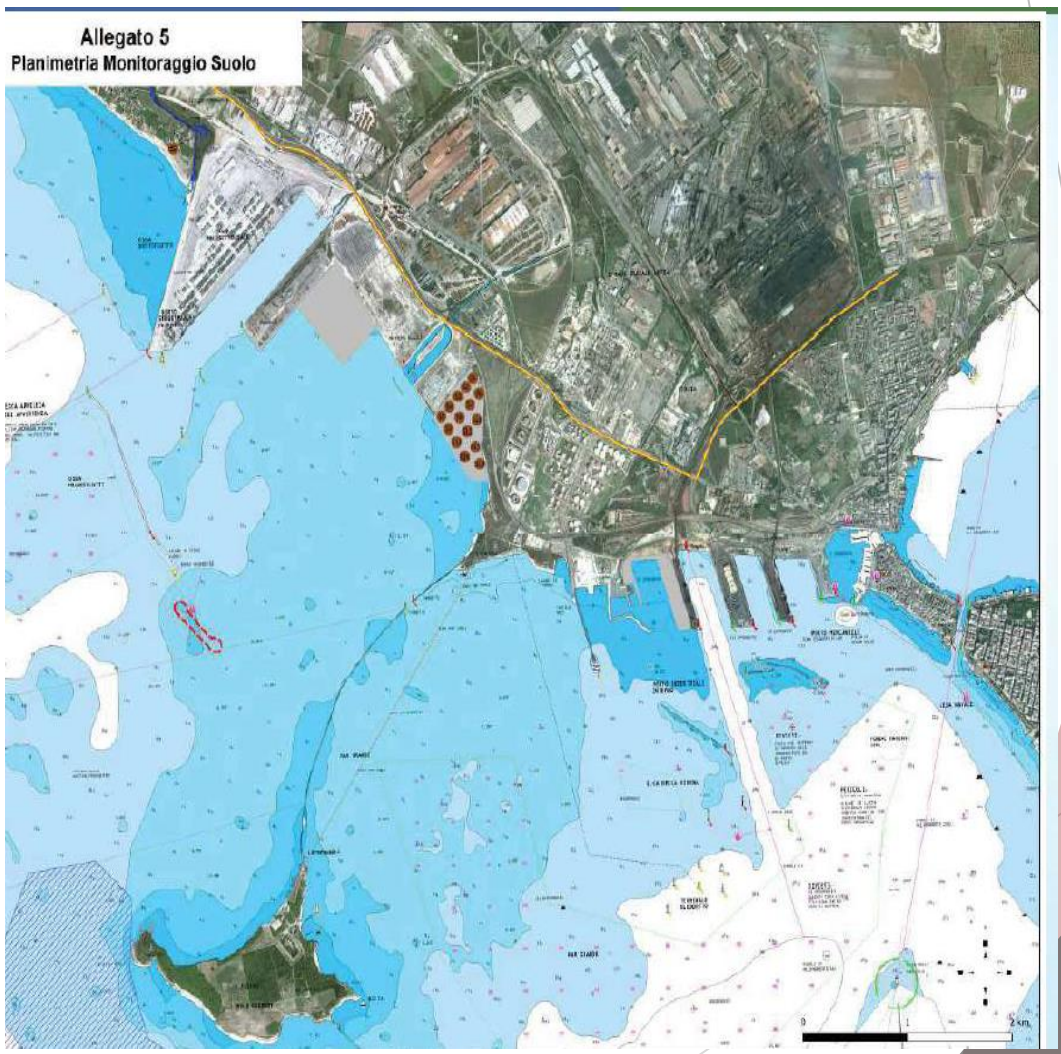
SOIL MATRIX

Monitoring shoreline evolution and beach profiles in the stretch along the coast west of the Multipurpose Pier

Monitoring the renaturalisation of the reclaimed water basin west of Punta Rondinella



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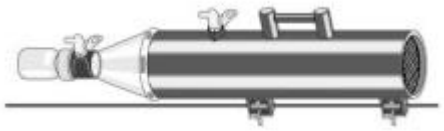
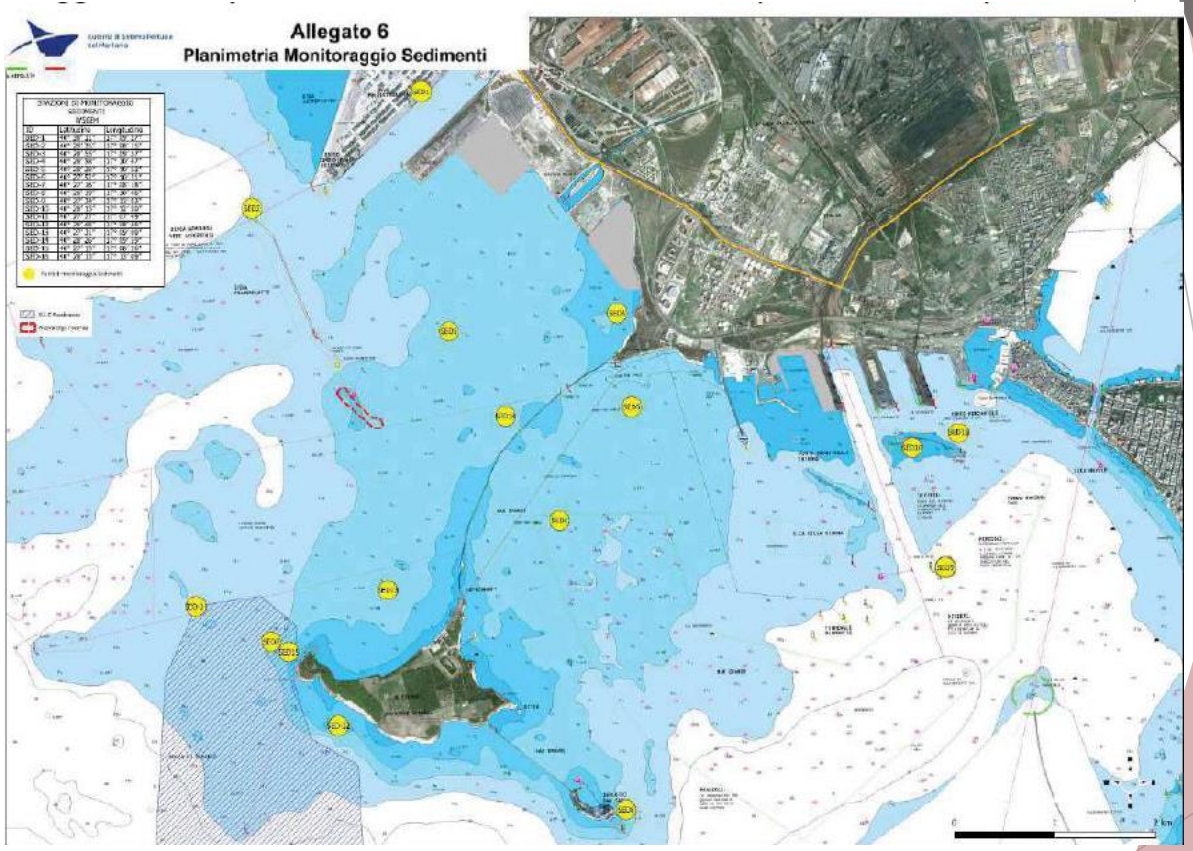
SEDIMENTS MATRIX

Collection of samples at 10 points for chemical analysis

Determination of "sedimentation rates", acute toxicity phenomena (using ecotoxicology tests) and particle-size distribution, metals, hydrocarbons, PAHs, PCBs, organotin compounds, TOC, pH, ORP and nutrients





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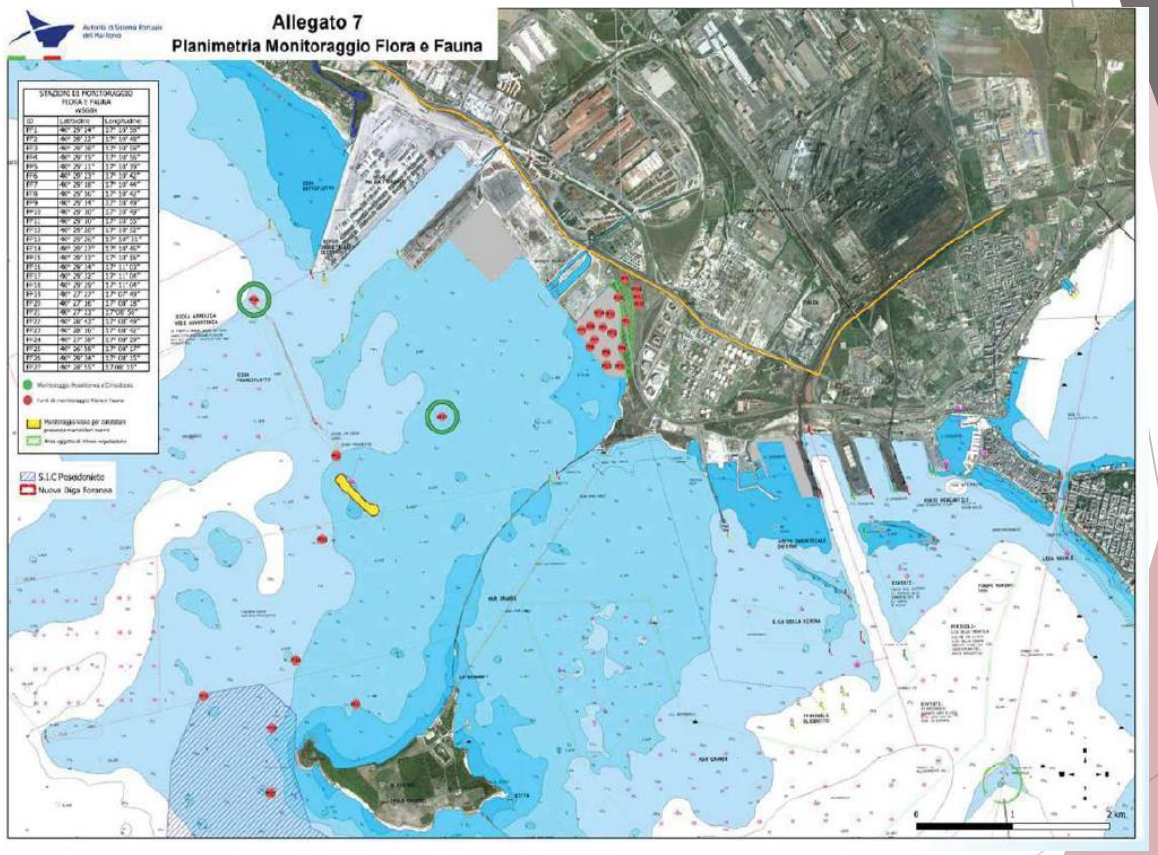
FLORA AND FAUNA MATRIX

- Vegetation Measurement
- Floristic Analysis and Phytosociological Mapping
- Qualitative-quantitative analysis of phyto-zooplanktonic populations
- Fish population monitoring
- Monitoring SIC POSIDONIETO "Isola di San Pietro - Torre Canneto"
- Posidonia and Cymodocea measurement in areas



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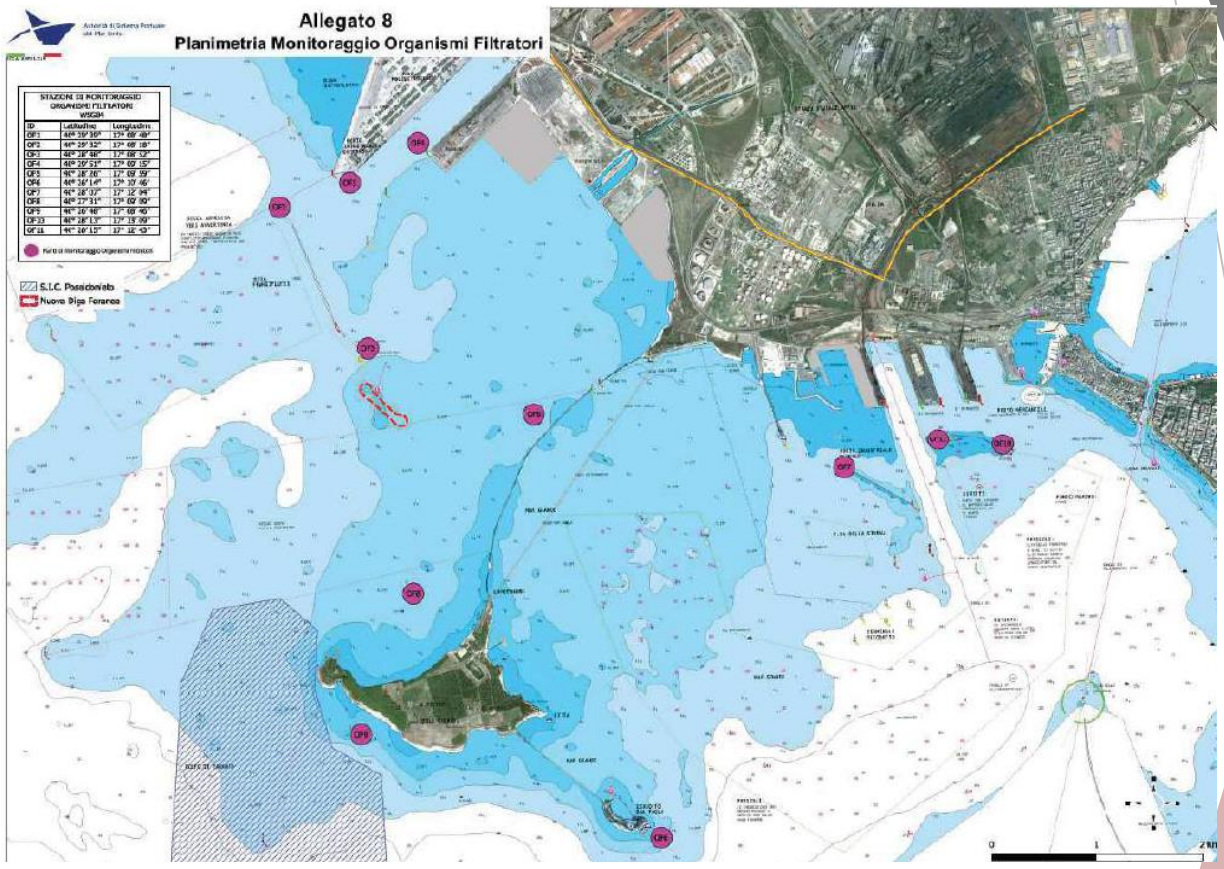
MATRIX FILTERING ORGANISMS

Implementation of the Mussel Watch system and sampling for chemical analysis



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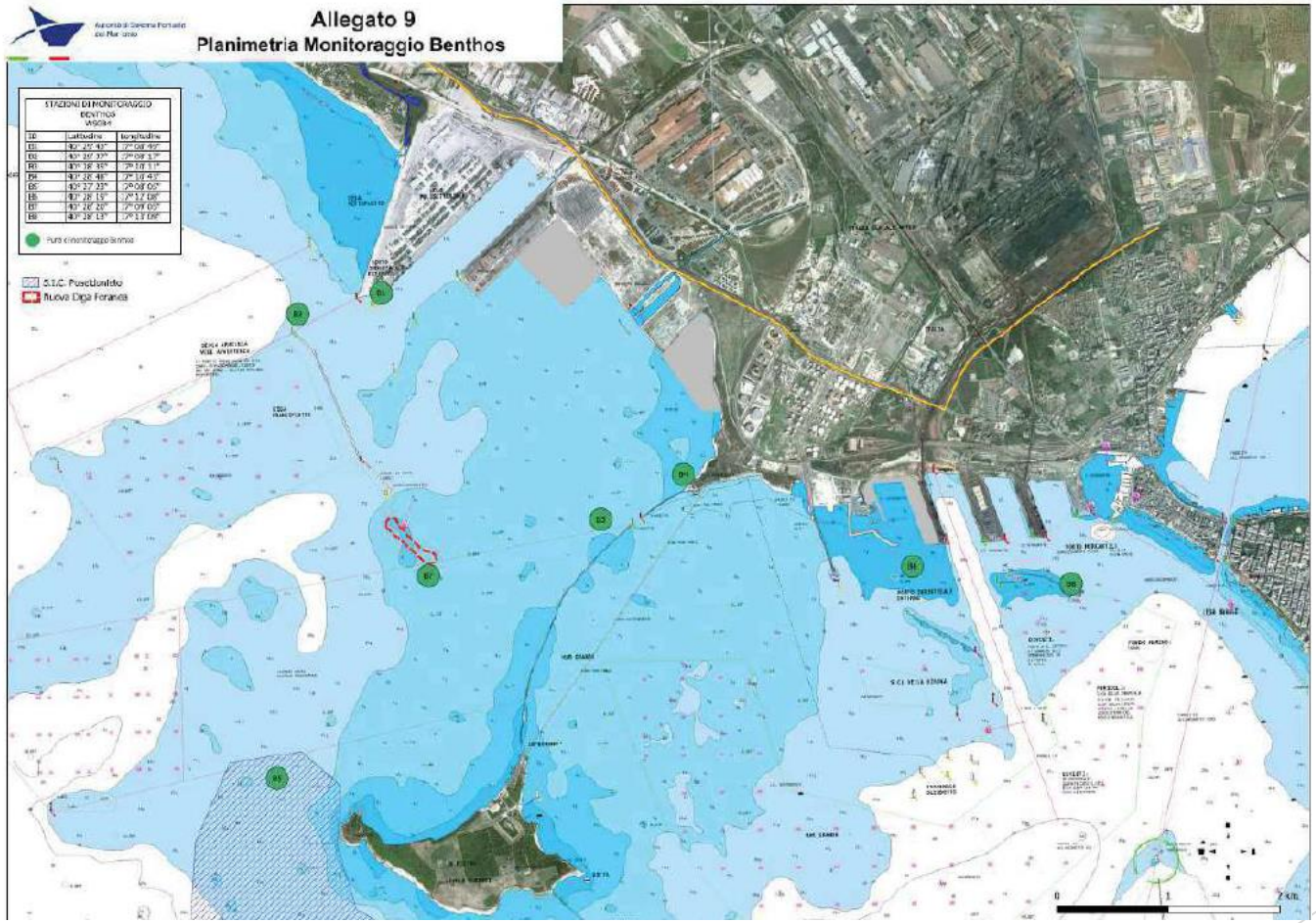
BENTHOS MATRIX

Sampling for recognition and counting of present biocoenosis



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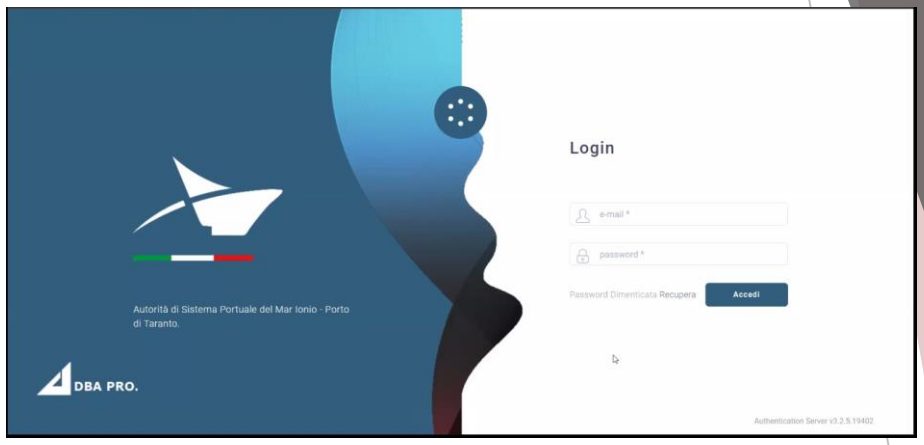
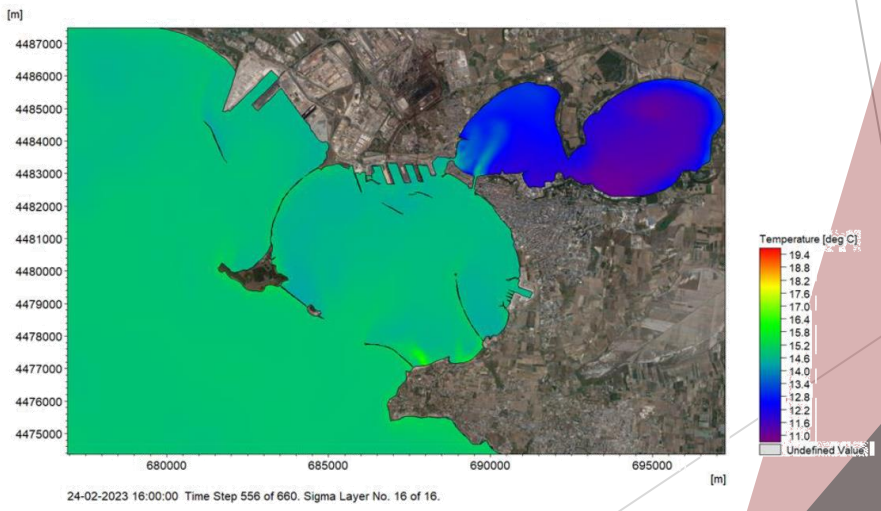
Monitoring data management

The Contractor shall design, implement and set up a data management system through a software platform integrated with all sensors in the port and to be prepared. On the platform, the Contractor shall enter both all georeferenced data, in open and standard format, resulting from the tender service, and "other monitoring data" resulting from the implementation of the individual monitoring plans of the works in progress or, in any case, of the future works included in the annual lists.





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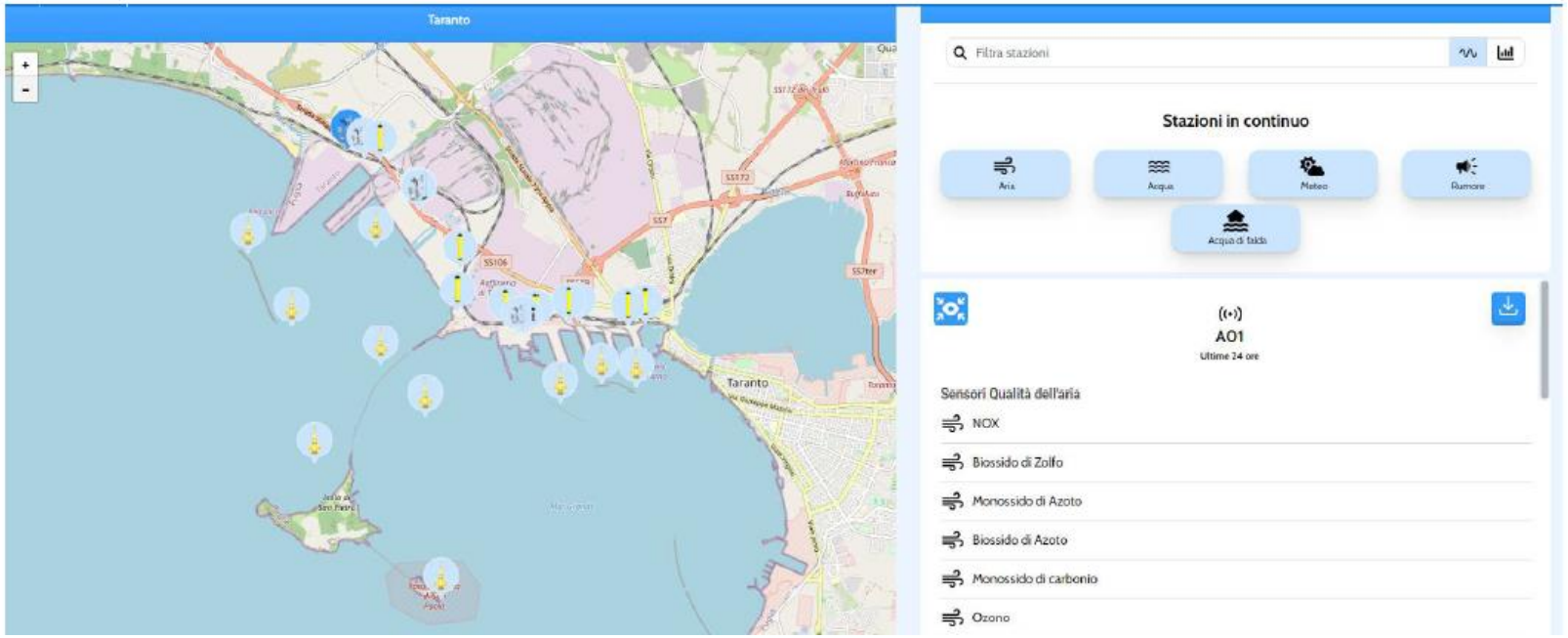
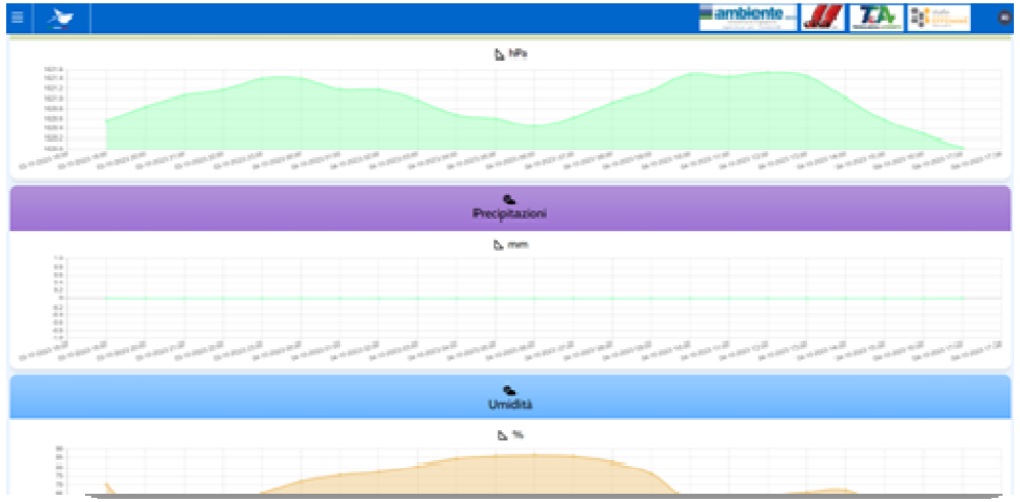
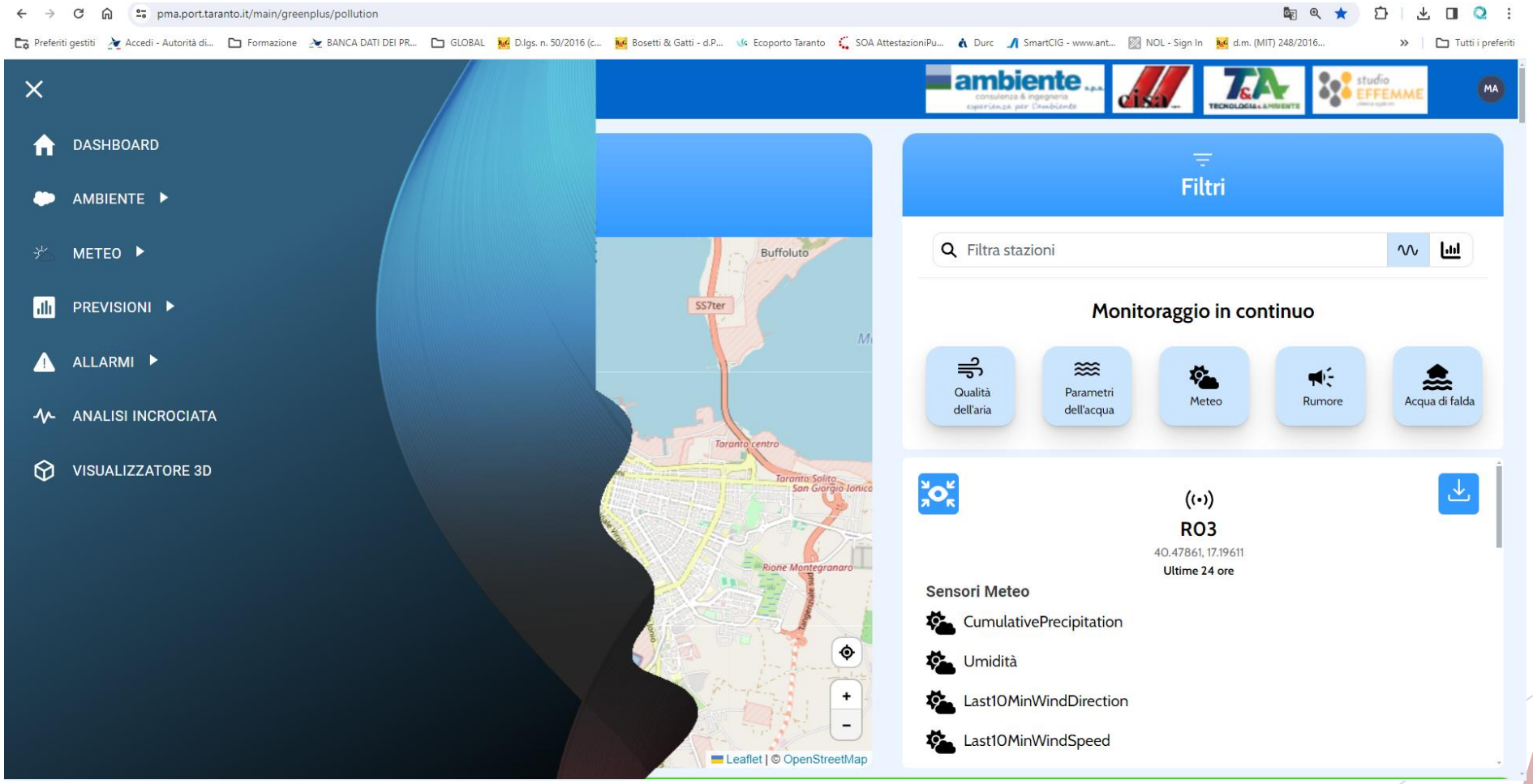
Monitoring data management

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