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Observatory for waterborne air pollution in the Eastern Mediterranean

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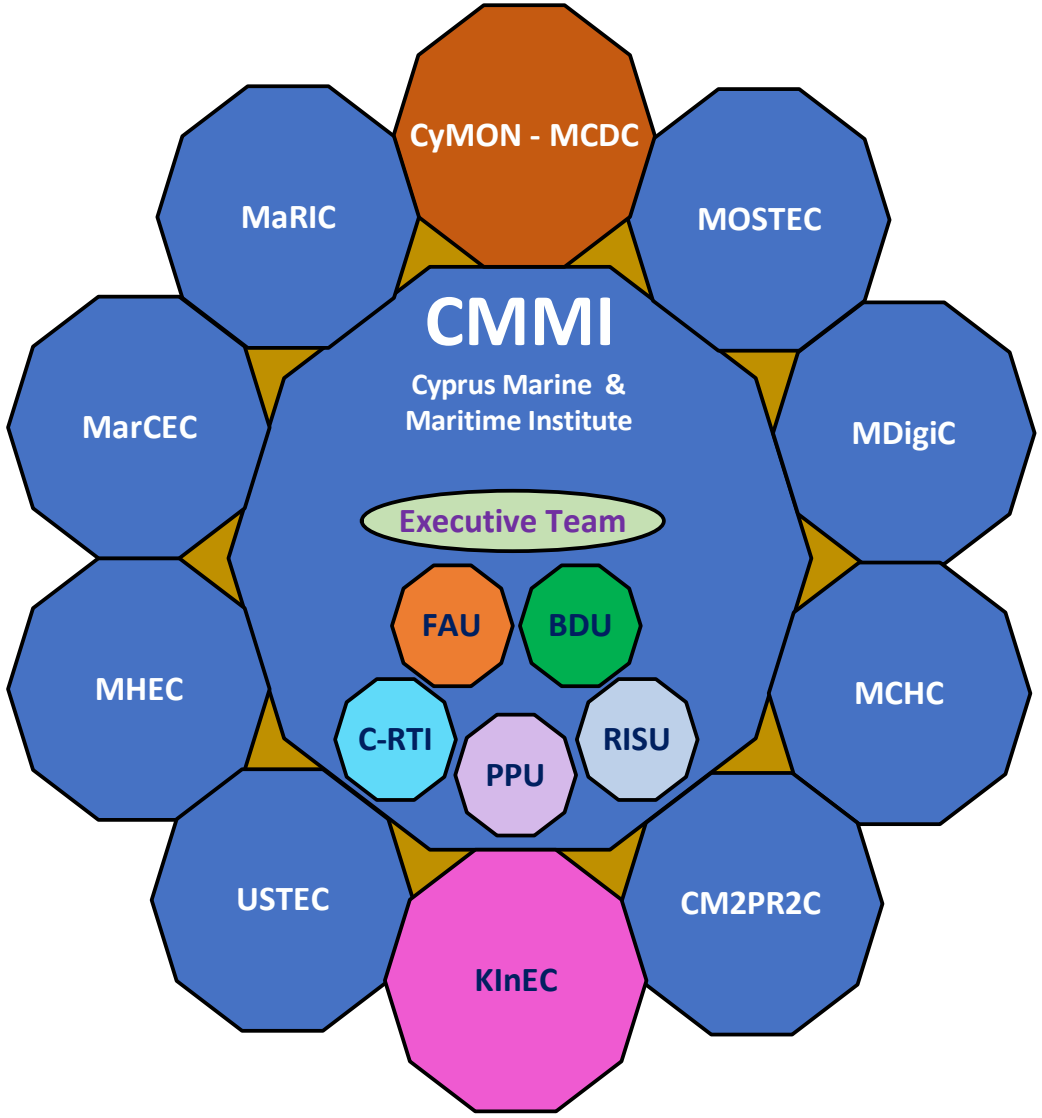
The CMMI R&D structure



The Ten CMMI Centres

1. Knowledge, Innovation & Entrepreneurship Centre (KInEC)
2. Cyprus Marine Observation Network – Mission Control & Data Centre (CyMON – MCDC)
3. Marine Robotics Innovation Centre (MaRIC)
4. Maritime Digitalization Centre (MDigiC)
5. **Marine & Offshore Science, Technology & Engineering Centre (MOSTEC)**
6. Marine & Coastal Ecosystems Centre (MarCEC)
7. Maritime Human Element Centre (MHEC)
8. Marine Cultural Heritage Centre (MCHC)
9. Centre for Marine & Maritime Policy Research & Regional Cooperation (CM2PR2C)
10. Underwater & Seabed Technologies Centre (USTEC)

Cyprus Decarbonisation Hub (CDH)

https://www.cmmi.blue/cyprus-decarbonisation-hub-cdh/

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The Cyprus Decarbonisation Hub (CDH)

The Cyprus Marine and Maritime Institute's Decarbonisation Hub is led by MOSTEC and supported by KInEC, MaRIC, and MDigiC.

The Cyprus Decarbonisation Hub (CDH) aims to:

- Support the Green Transition and the Green Deal
- Develop new research/laboratory infrastructure and creative capital in Cyprus
- Develop local know-how in new critical technology sectors
- Enhance the sustainability and competitiveness of the industrial, commercial, transport, energy, and construction sectors
- Develop renewable energy sources and increase their percentage of the national energy balance
- Strengthen the efforts in restraining the effects of climate change
- Promote the shipping industry's objectives concerning the decarbonisation targets that have been set for 2030 and 2050

CDH initiative

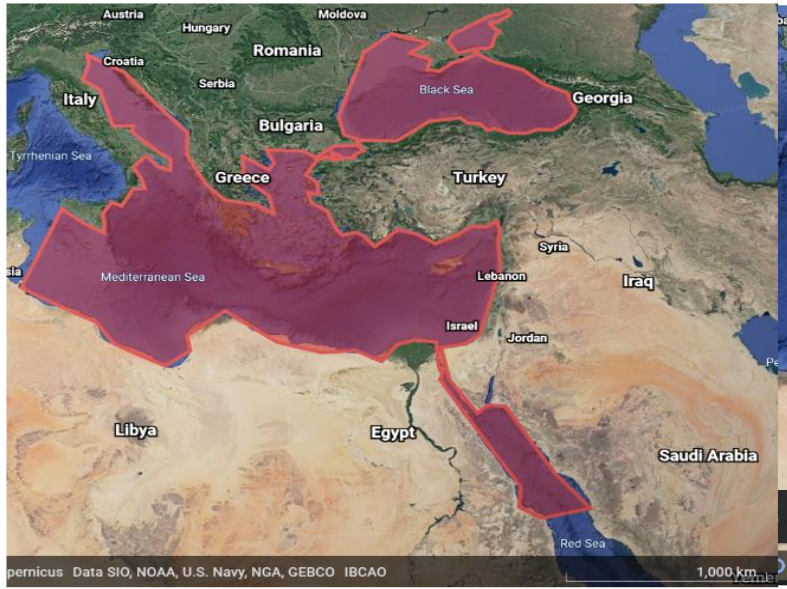
Creation of an Observatory to monitor air pollution

- **The shipping sector** is crucial for international trade (approximately 80–90% of the trade occurs through shipping) and is vital to the world economy. Shipping represents approximately 3% of global Green House Gas (GHG) emissions.
- **Monitoring of waterborne atmospheric pollution monitoring** aims at supporting decarbonization activities, raise social awareness and motivate research innovation and technology development activities.

Observatory's target applications

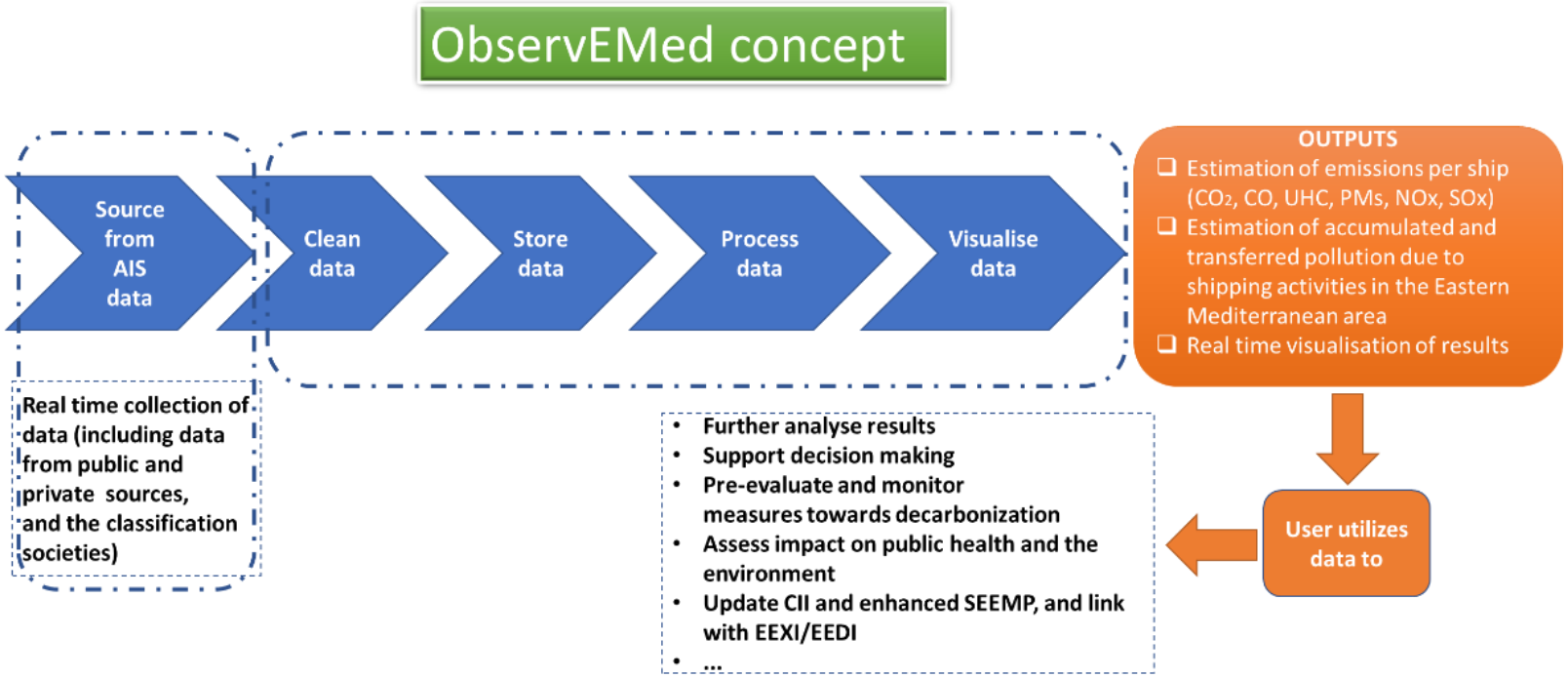
- Real-time monitoring of commercial ships in all their routes in the Eastern Mediterranean, including local sea routes.
- Presents the effect and impact of transported atmospheric pollution to the Eastern Mediterranean countries by calculating the GHG emissions and utilising meteorological models to estimate dispersion.
- Can be used as an evaluation platform for decarbonization measures/incentives that have been or will be taken, contributing to the amelioration of climate change effects.

Schematic of the regions to be covered

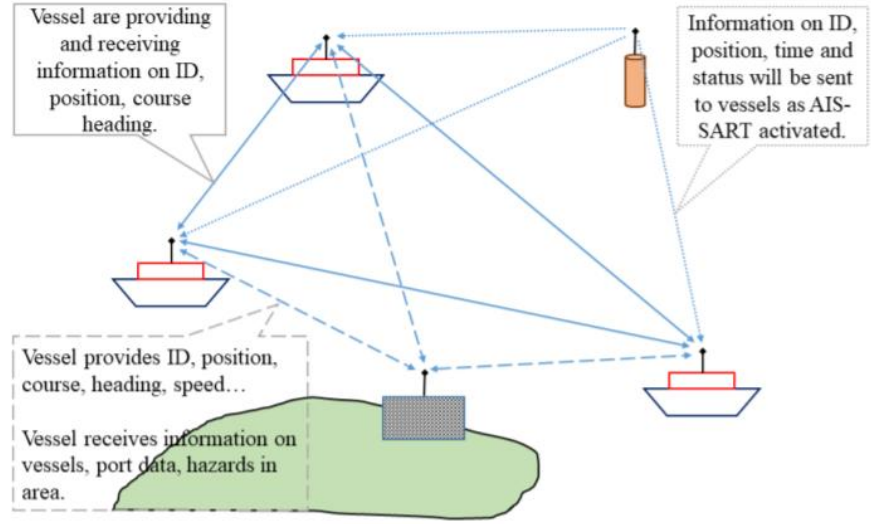


Schematic of the "special monitoring zone" of pollution from ships around Cyprus

The concept

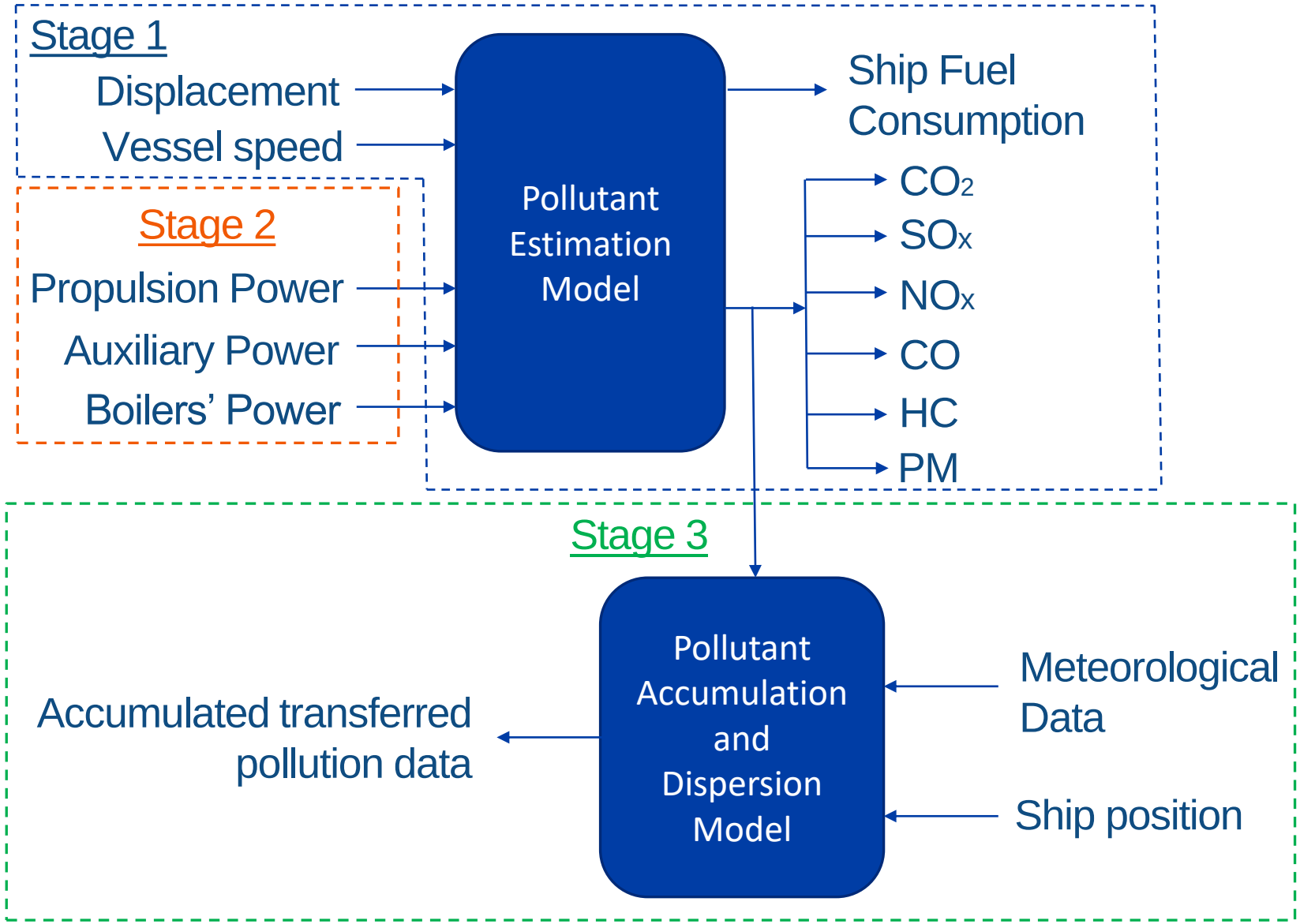


In ObservEMed, a software platform will collect, process and analyse the data in real time - Vessel real time monitoring via platforms such as AIS



Observatory's tangible goals

The observatory will monitor in real-time the CO_2 emissions in three stages with increasing modelling complexity and fidelity:



Conclusions

- CMMI established the Cyprus Decarbonisation Hub with the primary goal being research and innovation in decarbonisation.
- The Observatory calculates the gas emissions and, utilizing meteorological models, assesses their impact on the countries of the Eastern Mediterranean.
- The Observatory supports the UN's Strategic Development Goals and the IMO's 2050 decarbonisation targets by helping understand the source of waterborne CO_2 emissions and the dispersion of harmful emissions in the Eastern Mediterranean, leading in taking necessary actions, either in policy, taxation or even business strategy.
- The Observatory will also be used to monitor the quality of the atmospheric environment in the case where the Mediterranean will be a SECA (Sulphur Emission Control Area) or ECA (Emission Control Area).

Tools that estimate and/or calculate and continuously monitor the CO2 emissions are required to support organisations that offer transportation services and regulatory bodies, such as the IMO, review and set their decarbonisation strategies.

Thank you for your attention

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