

SMARTSHIP architecture, Modules and Use cases

SMARTSHIP 3rd Training session, Warsaw, 04/07/2023 **Presenter**: Fotis Oikonomou, DANAOS



The SmartShip project has received funding from the European Union's Horizon 2020 research and Innovation programme under the Marie Skłodowska-Curie Grant Agreement No 823916

Towards Green Shipping (Reducing GHG by 50% in 2050)





Towards Green Shipping (Reducing GHG by 50% in 2050)





OUR MODERN APPROACH: Data Driven Model

- *Re-Thinking. Monitor, Analyze, predict and improve operation in a cost effective manner*
- Life Cycle Multiparametric Analysis for decision making
- Sustainability and
 <u>Compliance</u>
- Circular Economy design

Architecture design and Use Cases



From Data Sourcing to Model deployment (DSS)





From Data Collection to Model Training

Sensors-Based Data Sourcing

Showcase #1: External Service





6

Showcase #2: Voyage Performance Monitoring and Weather Routing Optimization





Reporting Deviation





Fleet Performance Dashboard





Compliance Performance Analysis





Time series with voyage environmental performance





Circular By Design





✓ Emerging Class of Smart Assets: Maximize sustainable vessel utilization and ensure long-lasting durability of the asset



✓Value Driven: Extract value from the large amount of data generated by smart maritime assets. Effective flow of Information for natural capital rebuild



✓ Eliminate Waste: Through Re-Using of data and lean management in decision making for fleet operation and maintenance



✓ Green Thinking and Sustainability: Minimize energy consumption per unit by combining technologies effectively



✓Integrated Framework: Extends across the entire fleet and lifetime of the vessel. Values drivers are paired and efficiency is achieved through comparison analysis. Critical mission objectives are met.



