



# Ca' Foscari University of Venice

**PROJECT ACRONYM AND TITLE:** EMERGE - Evaluation, control and Mitigation of the EnviRonmental impacts of shippinG Emissions

**FUNDING PROGRAMME:** Horizon 2020 - MG

**CALL:** H2020-MG-2018-2019-2020

**SCIENTIFIC FIELDS:** Maritime

**HOST DEPARTMENT:** DAIS -Department of Environmental Sciences, Informatics and Statistics

**SCIENTIFIC RESPONSIBLE:** Antonio Marcomini

**FINANCIAL DATA:**

Project total costs	Overall funding assigned to UNIVE
€ 7.493.885,00	€ 402.267,50

**ABSTRACT:**

The objectives of EMERGE are (i) to quantify and evaluate the effects of potential emission reduction solutions for shipping in Europe for several scenarios, and (ii) to develop effective strategies and measures to reduce the environmental impacts of shipping. EMERGE objectives will be achieved through real-world test cases involving measurements and modelling on actual vessels, along main shipping routes and in sensitive European marine regions. Given our unique capabilities, the EMERGE consortium is the only group that can model real world emissions of shipping to air and water for the whole of Europe. The project will collect and synthesize experimental evidence on waste streams to water and emissions to air originating from ships, for different emission control technologies. The measurements will focus on abatement techniques and will include emissions to, and concentrations in water, air and marine biota. The project will especially investigate how effectively available scrubbers reduce the effects of key pollutants. EMERGE includes five geographical case studies, in different ecologically vulnerable regions, and a mobile onboard case study. The case study regions are (i) Eastern Mediterranean (ii) Northern Adriatic Sea, (iii) the region surrounding the Lagoon of Aveiro, (iv) the Solent Strait and (v) the Öresund Strait. The mobile onboard case study will be deployed in various European sea regions. EMERGE will develop an integrated modelling framework to assess the combined impacts of shipping emissions on the aquatic and atmospheric environments, and the effects on marine ecosystems. The assessment will include the benefits and costs of control and mitigation options affecting water quality, air pollution exposure, health impact, climate forcing and bioaccumulation of pollutants. EMERGE will provide recommendations and guidance for stakeholders and decision-makers on cost-beneficial options for sustainable use of shipping on the medium and long term.

Planned Start date	Planned End date
01/02/2020	31/12/2024

**PARTNERSHIP:**

<b>1. ILMATIETEEN LAITOS, the Coordinator</b>	<b>FI</b>	<b>Coordinator</b>
<b>2. IVL SVENSKA MILJOEINSTITUTET AB</b>	<b>SE</b>	<b>Partner</b>
<b>3. CHALMERS TEKNISKA HOEGSKOLA AB</b>	<b>SE</b>	<b>Partner</b>
<b>4. ARISTOTELIO PANEPISTIMIO THESSALONIKIS</b>	<b>EL</b>	<b>Partner</b>
<b>5. INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE</b>	<b>AT</b>	<b>Partner</b>
<b>6. THE UNIVERSITY OF HERTFORDSHIRE HIGHER EDUCATION CORPORATION</b>	<b>UK</b>	<b>Partner</b>
<b>7. PANEPISTIMIO AIGAIUO</b>	<b>EL</b>	<b>Partner</b>
<b>8. UNIVERSIDADE DE AVEIRO</b>	<b>PT</b>	<b>Partner</b>
<b>9. UNIVERSITY OF SOUTHAMPTON</b>	<b>UK</b>	<b>Partner</b>
<b>10. UNIVERSITA CA' FOSCARI VENEZIA</b>	<b>IT</b>	<b>Partner</b>
<b>11. METEOROLOGISK INSTITUTT</b>	<b>NO</b>	<b>Partner</b>
<b>12. GOETEBORGS UNIVERSITET</b>	<b>SE</b>	<b>Partner</b>
<b>13. OULUN YLIOPISTO</b>	<b>FI</b>	<b>Partner</b>
<b>14. FUNDACIO INSTITUT CATALA DE RECERCA DE L'AIGUA</b>	<b>ES</b>	<b>Partner</b>
<b>15. DANAOS SHIPPING COMPANY LIMITED</b>	<b>CY</b>	<b>Partner</b>
<b>16. MARITIME INSTITUTE OF EASTERN MEDITERRANEAN - MAR.IN.E.M.</b>	<b>CY</b>	<b>Partner</b>
<b>17. THE BALTIC MARINE ENVIRONMENT PROTECTION COMMISSION</b>	<b>FI</b>	<b>Partner</b>
<b>18. CREATIVE NANO PC</b>	<b>EL</b>	<b>Partner</b>