

PROJECT

## SCIPPER

# SHIPPING CONTRIBUTIONS TO INLAND POLLUTION PUSH FOR THE ENFORCEMENT OF REGULATIONS

**Funding:** European (Horizon 2020)

**Duration:** May 2019 - Apr 2022

**Status:** Ongoing

**Total project cost:** €5,060,307

**EU contribution:** €4,987,619



[CORDIS RCN : 221848](#)

### Objectives:

SCIPPER will implement available and innovative techniques for monitoring the compliance of individual ships to existing sulphur and future NO<sub>x</sub> and PM air pollution regulations. Using five field measurement campaigns, one mirror campaign in Hong Kong and long-term monitoring data SCIPPER will assess the suitability, operational capacity, and cost-effectiveness of various monitoring methods. The techniques identified include on-board, on-shore in situ and optical remote, airborne, and satellite systems: assessment will be demonstrated in ports (Gothenburg, Hamburg or Rotterdam and Marseille) and in the shipping lanes of the North and Baltic Seas, English Channel and Mediterranean. Where available this will be carried out in parallel to established official monitoring methodologies.

Bilateral knowledge exchange to ports in Asia, Australia and the US will be enabled through the consortium's extensive network of contacts, thereby advancing the global impact of EU initiatives.

New innovations to be tested by SCIPPER include:

- on-board and airborne sensors to measure black carbon and ultrafine particles;
- a new ultra-sensitive 'sniffer' SO<sub>2</sub> method and;
- the potential use of satellite observations for monitoring individual vessel NO<sub>x</sub> and SO<sub>2</sub> emissions.

Measurements will also be used to develop relevant emission factors, required by emissions inventories and Air Quality (AQ) simulation models. AQ models will be enhanced to simulate secondary aerosol formation as the emission plume ages in the atmosphere. Using these advanced simulation tools, SCIPPER will quantify the environmental and health impacts of varying degrees of regulatory compliance for selected test cases.

The overall objective of SCIPPER is to provide authorities with:

- fundamental technical information in developing their enforcement approaches and
- modelling tools and monitoring techniques in order to quantify the environmental benefits of successful enforcement.

### Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

**Other programmes:** LC-MG-1-1-2018 InCo flagship on reduction of transport impact on air quality

### Lead Organisation:

**Aristotelio Panepistimio Thessalonikis**

**Address:**

KEDEA BUILDING, TRITIS SEPTEMVRIOU, ARISTOTLE UNIV CAMPUS  
54636 THESSALONIKI  
Greece

**Organisation Website:**

<http://www.auth.gr>

**EU Contribution:** €456,086

**Partner Organisations:**

**Ivl Svenska Miljoeinstitutet Ab**

**Address:**

Valhallavaegen  
100 31 Stockholm  
Sweden

**Organisation Website:**

<http://www.ivl.se>

**EU Contribution:** €443,830

**Plymouth Marine Laboratory**

**Address:**

Prospect Place, The Hoe  
Plymouth  
PL1 3DH  
United Kingdom

**EU Contribution:** €297,295

**Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek Tno**

**Address:**

ANNA VAN BUERENPLEIN 1  
2595 DA DEN HAAG  
Netherlands

**Organisation Website:**

<http://www.tno.nl>

**EU Contribution:** €470,750

**Helmholtz Zentrum Muenchen Deutsches Forschungszentrum Fuer Gesundheit Und Umwelt Gmbh**

**Address:**

Ingolstaedter Landstrasse 1  
85764 Neuherberg  
Germany

**Organisation Website:**

<http://www.helmholtz-muenchen.de>

**EU Contribution:** €244,780

**Frauenhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.v.**

**Address:**

Hansastrasse 27C  
80686 MUNCHEN  
Germany

**Organisation Website:**

<http://www.fhg.de>

**EU Contribution:** €245,444

**Ministerie Van Infrastructuur En Waterstaat****Address:**

RIJNSTRAAT 8  
2500 EX DEN HAAG  
Netherlands

**Organisation Website:**

<http://www.rijksoverheid.nl/ministeries/ienm>

**EU Contribution:** €119,270

**Aeromon Oy****Address:**

PASILANRAITIO 5  
00240 HELSINKI  
Finland

**EU Contribution:** €97,438

**Helmholtz-Zentrum Geesthacht Zentrum Fur Material- Und Küstenforschung Gmbh****Address:**

MAX PLANCK STRASSE 1  
21502 GEESTHACHT  
Germany

**Organisation Website:**

<http://www.gkss.de>

**EU Contribution:** €334,675

**Exactearth Europe Limited****Address:**

SANDHILLS FARM BRAINTREE ROAD WETHERSFIELD  
BRAINTREE ESSEX  
CM7 4AG  
United Kingdom

**EU Contribution:** €157,028

**Tampereen Korkeakoulusaatio Sr****Address:**

KALEVANTIE 4  
33100 TAMPERE  
Finland

**EU Contribution:** €397,866

**Bundesamt Fur Seeschiffahrt Und Hydrographie****Address:**

Bernhard-Nocht-Strasse 78  
20359 HAMBURG  
Germany

**Organisation Website:**

<http://www.bsh.de>

**EU Contribution:** €231,375

**Atmosud Provence Alpes Cote D'azur****Address:**

146 RUE PARADIS LE NOILLY PARADIS  
13294 MARSEILLE  
France

**EU Contribution:** €336,000

**Ilmatieteen Laitos****Address:**

Erik Palmenin aukio 1  
00560 HELSINKI  
Finland

**Organisation Website:**

<http://www.fmi.fi>

**EU Contribution:** €419,108

**Universite D'aix Marseille****Address:**

Boulevard Charles Livon 58  
13284 Marseille  
France

**EU Contribution:** €270,153

**Explicit Aps****Address:**

ARGENTINAVEJ 12  
2800 KGS LYNGBY  
Denmark

**EU Contribution:** €96,367

**Chalmers Tekniska Hoegskola Ab****Address:**

-  
41296 GOTHENBURG  
Sweden

**Organisation Website:**

<http://www.chalmers.se>

**EU Contribution:** €370,156

**Technologies:**

Aircraft operations and safety  
Air quality measurements

**Development phase:** Research/Invention

**STRIA Roadmaps:** Other specified

Water transport (sea &

**Transport mode:** inland)

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Environmental/Emissions aspects

**Geo-spatial type:** Other