# I²PANEMA

## Bringing the value of IoT to ports

**25 years** | ITEA 4 | 1998–2023

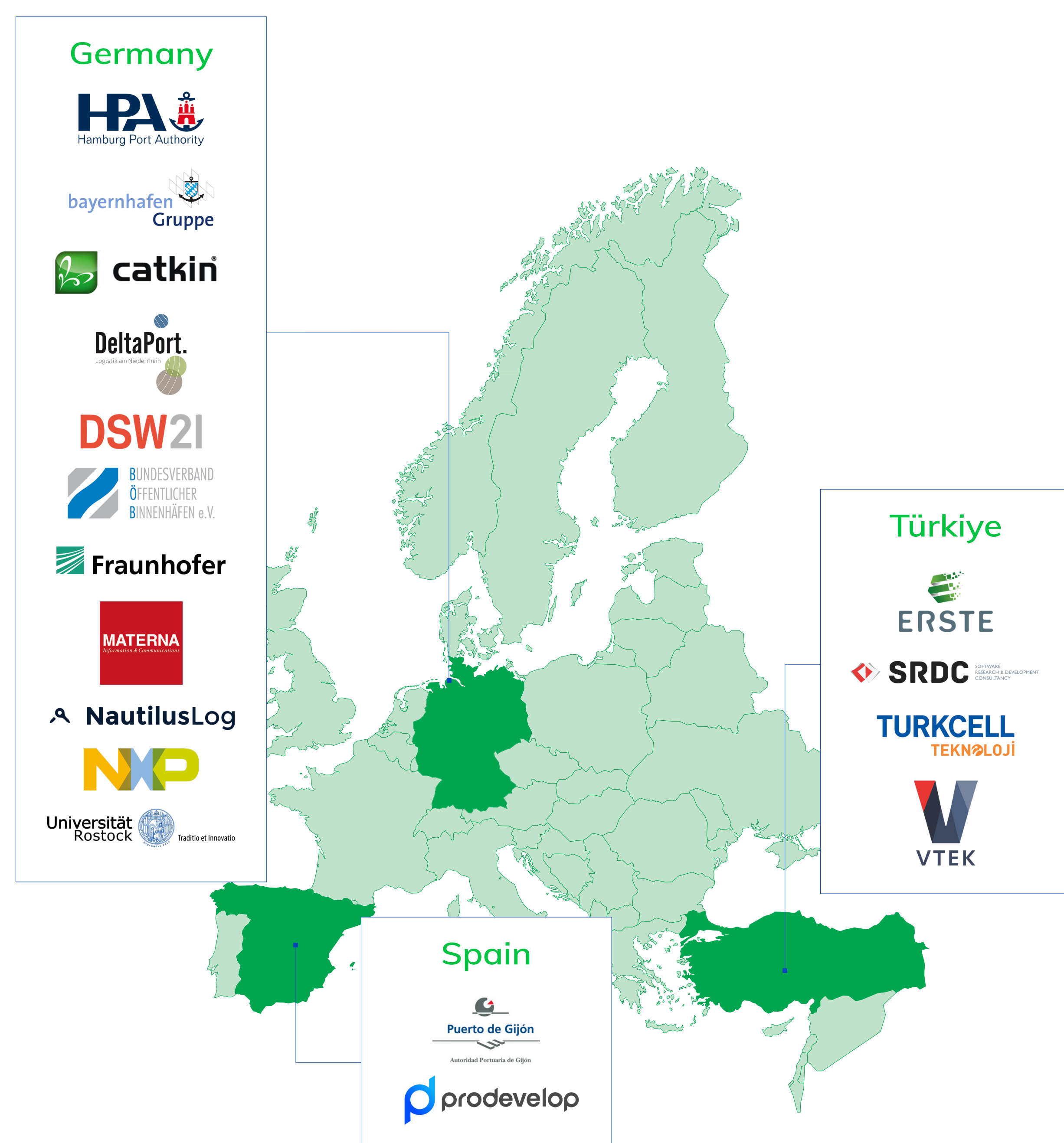## Project summary

By bringing Internet of Things (IoT) solutions and added-value services to the world of ports, the project I²PANEMA (Intelligent IoT-based Port Artefacts Communication, Administration & Maintenance) has made their operations more efficient and sustainable across various business cases.

## Consortium

**Germany**
HPA Hamburg Port Authority
bayernhafen Gruppe
catkin
DeltaPort.
DSW2I
BUNDESVERBAND ÖFFENTLICHER BINNENHÄFEN e.V.
Fraunhofer
MATERNA
NautilusLog
NXP
Universität Rostock

**Türkiye**
ERSTE
SRDC
TURKCELL TEKNOLOJİ
VTEK

**Spain**
Puerto de Gijón
prodevelop

## Project video

SCAN ME

https://bit.ly/459IsH3

© Photographed by Thies Raetzke

## Project duration
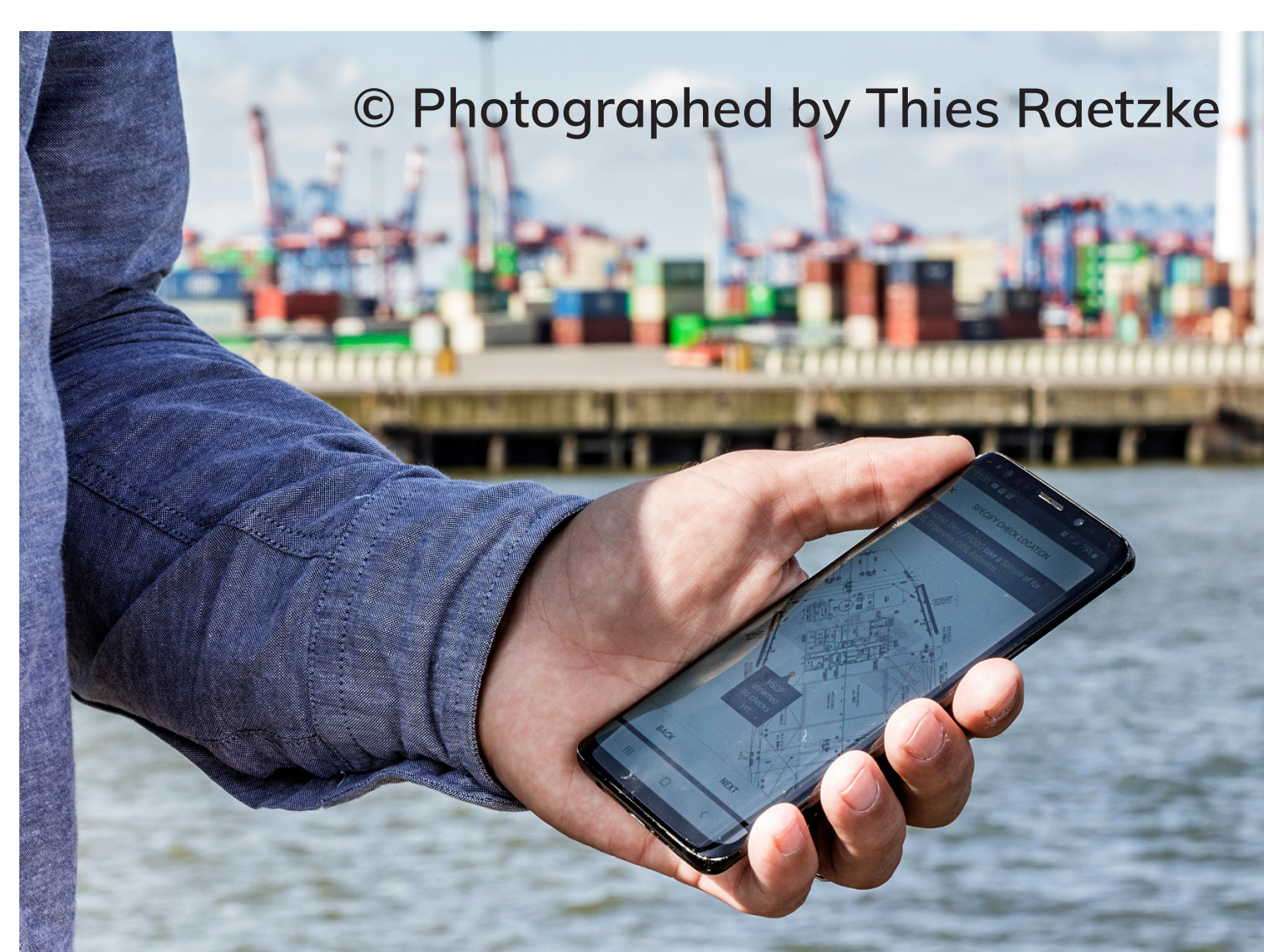
October 2018 - December 2022

## Key results

> Successful implementation of 8 demonstrator use cases; examples:
> > 'Sustainable port activities' (Port if Gijón, ESP)
> > 'RoRo Operations' (Safi and Assan Ports, TUR)
> > 'Noise Reduction/Cancelling' (Bayernhafen Nuremberg, DEU)

> In-depth STRIDE and DREAD security analyses and subsequent mitigations performed for all use cases

> CNA Innovation Award 2021 „Intelligence in Traffic and Logistics" for 'Noise Cancelling'

> New ISO Standard 4891: Smart Applications for Ships

> 4 new products and 2 enhancements of existing products; examples:
> > 'Container Localization' integrated with VTEK's TOS VPORT
> > Real-time environmental indicators enhanced with predictive alarms', Prodevelop
> > 'NB-IoT Service', Turkcell
> > Reference prototype implementation of the 'Smart Logbook application' according to the ISO 4891 standard, NautilusLog

## Contact

Franz-Josef Stewing
Materna - Germany
E: franz-josef.stewing@materna.de
T: +49 173 294 5608