



SMART SOLUTIONS FOR THE SHIPPING INDUSTRY

TECHNOLOGICAL SOLUTIONS FOR AUTOMATION, SAFETY AND MONITORING
IN PORTS AND SHIPS

SICK
Sensor Intelligence.

Salvatore Squillaci
Sick Spa

Measure



Integrate



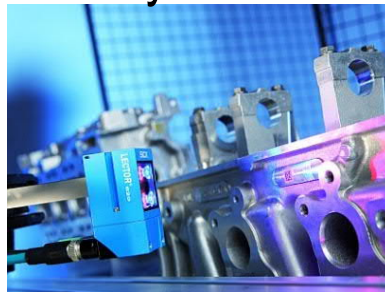
Detect



Safety & Security



Identify & Track



THE RIGHT SENSORS FOR EACH INDUSTRY

IMPROVE THE EFFICIENCY AND PRODUCTIVITY

Factory Automation



Process control & emission monitoring



Logistic automation

FROM THE INDUSTRIAL APPLICATION TO THE SEA (FORTH AND BACK)



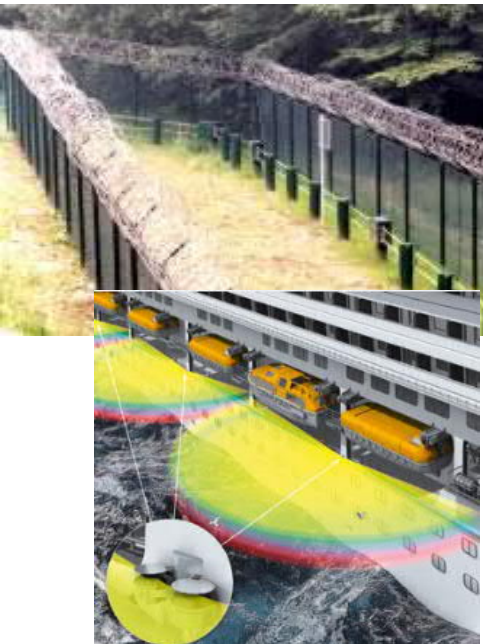
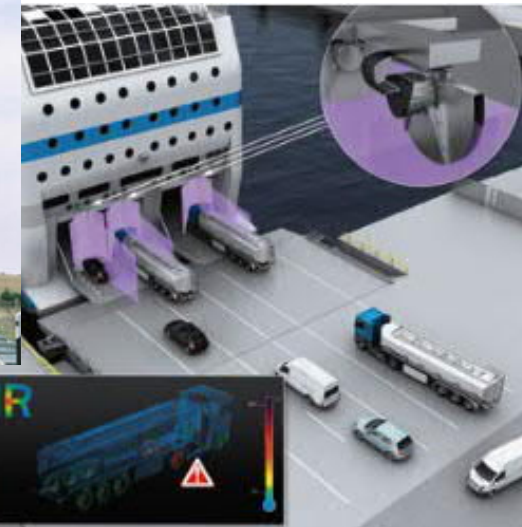
Exhaust gas monitoring



Building security



Vehicle classification



Vehicle automation



Engineering



Service



MARITIME INDUSTRY?

HOW TO INCREASE THE EFFICIENCY, SAFETY AND RELIABILITY?

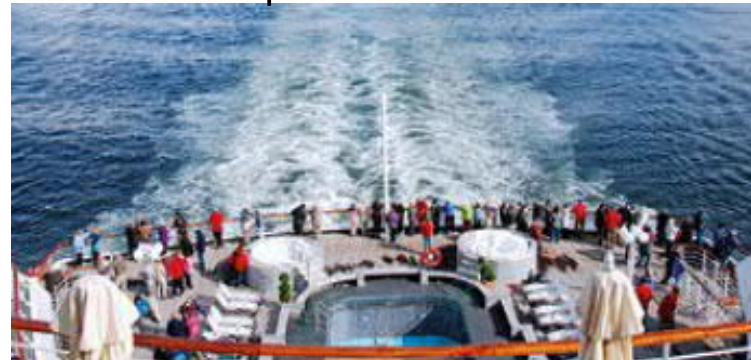
Process and emission monitoring



Early detection of hazards



People detection



Load & unload



Service & Maintenance



PROCESS & EMISSION CONTROL MONITOR & OPTIMIZE



SB100

FWE200DH



Continuous monitoring of dust/soot

FLAWSIC100

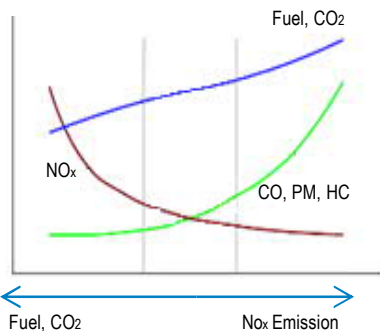


Exhaust gas flow



MARSIC

Continuous monitoring of CO_2 , SO_2 , NO , NO_2 , CO , CH_4 , NH_3 , O_2 , H_2O
Integrated selfcheck function available

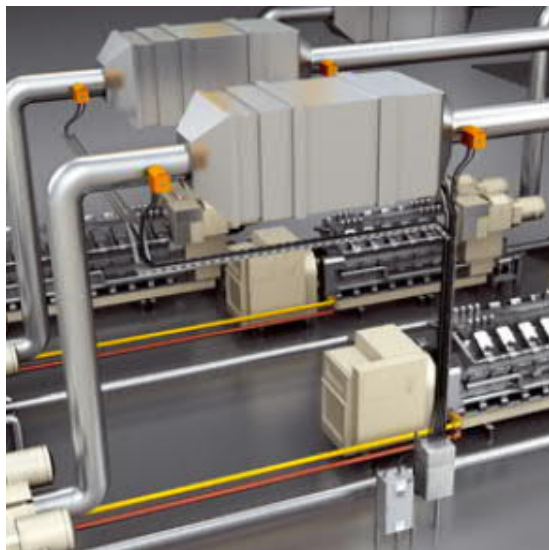


COMBUSTION OPTIMIZATION & GAS CLEANING

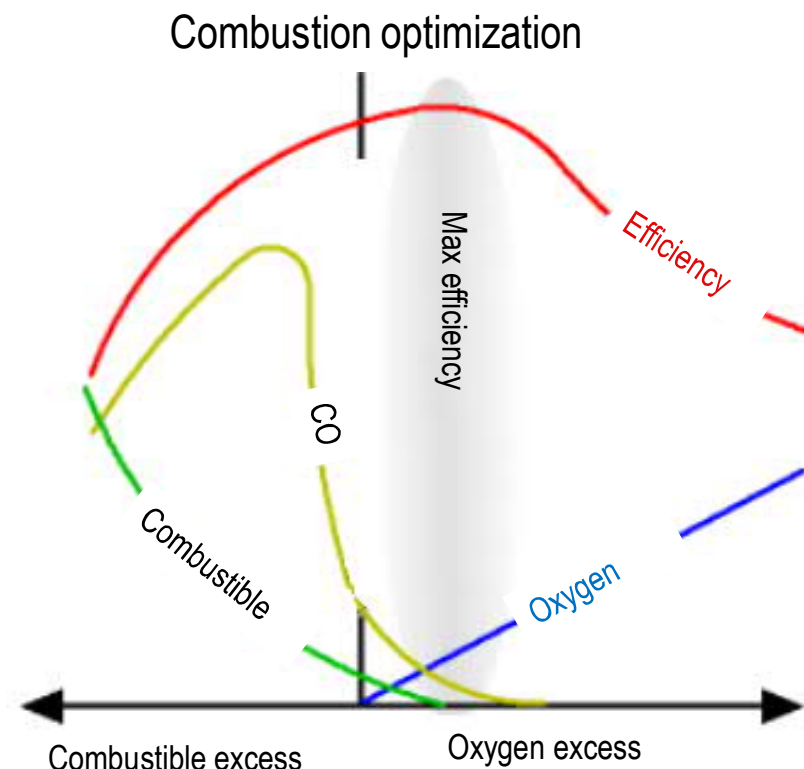
EMISSION MINIMIZATION



Measurement of SO_x emission at scrubber inlet/outlet



Measurement of NO_x emission at SCR inlet/outlet



LNG & DUAL FUEL ENGINES EMISSION MINIMIZATION

Measurement of natural gas consumption



FLOWSIC600XT



Methane slip control at LNG and dual-fuel engines



MARSIC

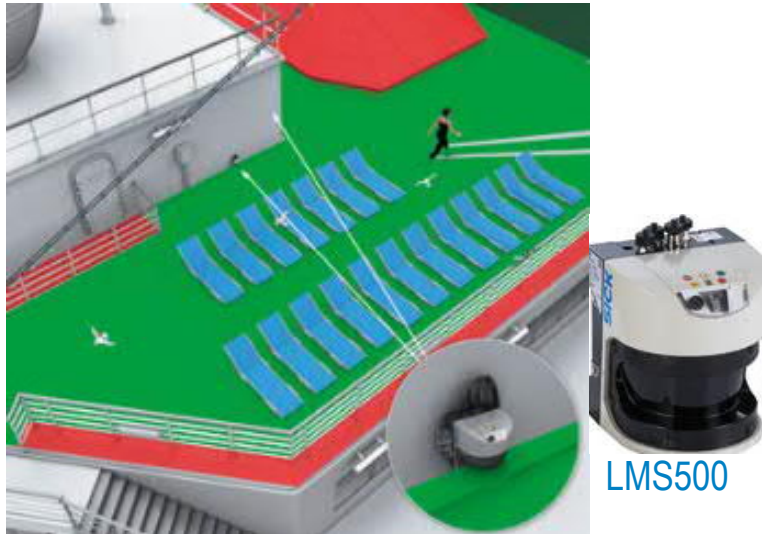
SMART DETECTION OF PEOPLE BESIDE AND ON SHIPS

SECURITY AND FLOWS MONITORING

Non-contact access control



Securing access areas on ships



“Man overboard” detection



Detection of people flow onboard



EARLY DETECTION OF HAZARDS BEFORE SHIPS LEAVES THE PORT



Detection of vehicles with fire risk



Detection of vehicles with hazardous materials

Detection of unbalanced shaft & wear



Collision avoidance system

LOADING AND UNLOADING

SAFE & EFFICIENT

Safe loading of bulk material



BULKSCAN



TRANSIC100 LP

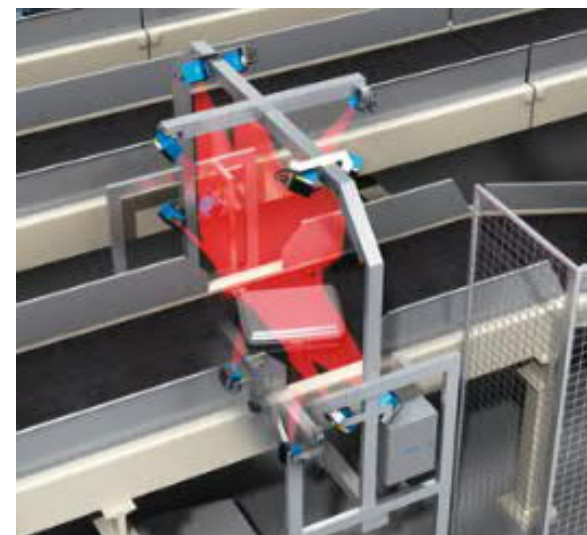


Inerting of tanks and cargo holds on ships

Self-check-in: Automated baggage identification



CLV65x

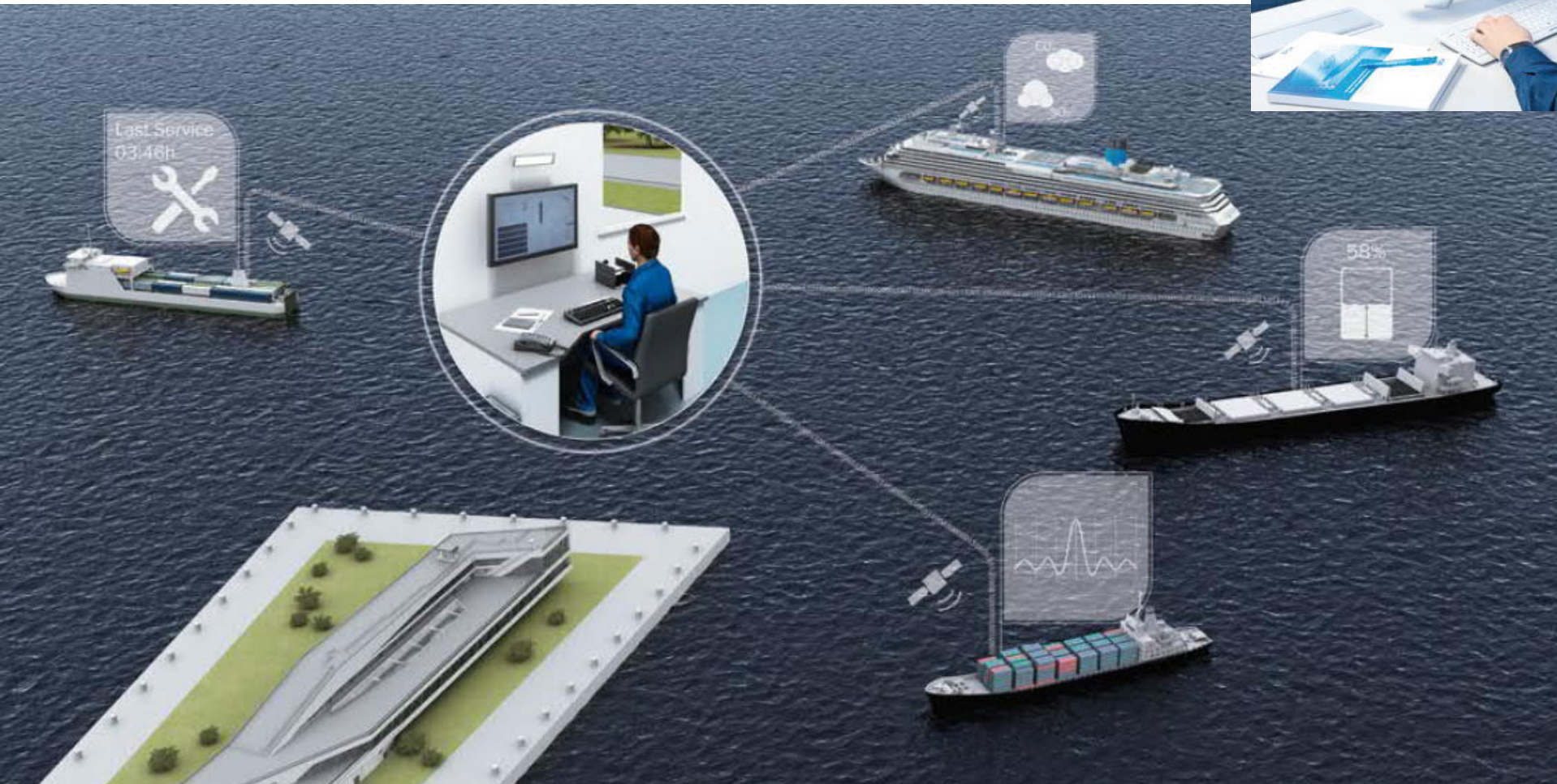


ALIS

Handling: Automated baggage identification

NOT JUST MEASURE DATA COLLECTION & SHARING

Everything under control ...
... whenever the ships are!!!!



INDUSTRY 4.0

FURTHER BENEFIT FROM THE SENSORS

Required Check

- Error source?
- Ottiche pulite?
 - wear?
 - Damage?
 - available spare?



Today

MARSIC



"Source energy level too low"

Measure
Status

PLC

"Maintenance request"

- Reaction time?
- Knowledge?
- Contact person?
- Availability?



Tomorrow

MARSIC



"MARSIC, DeNOx 1, S/N 13138038. sender energy level 30%, to be replaced within 5 weeks, part order number 2051033."



ERP

P/N 2051033 is on stock!

OR

P/N 2051033 not in stock, automatically ordered will be available @ Genova port in 3 days non è a stock

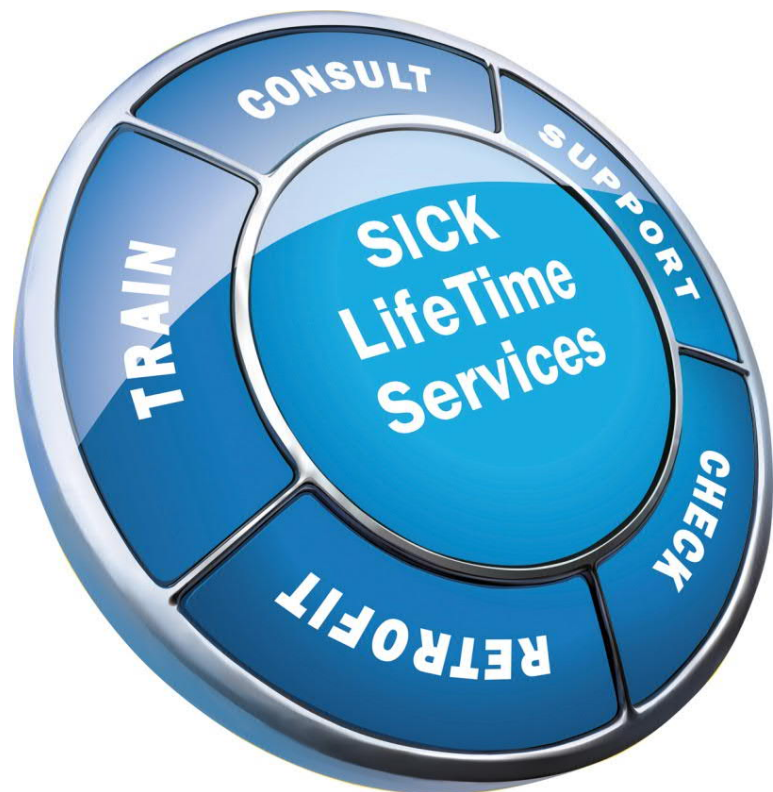


"I'm MARSIC, S/N 13258025: during maintenance @ DeNox1 please plan the yearly maintenance on Scrubber1?"

Spare parts are on stock."

PRODUCTS, SYSTEMS ...

... AND SERVICE ARE THE KEY FOR THE EFFICIENCY



Consulting & Engineering



Service activities
on-site or remote



Check & optimization
Safe & regularly inspected

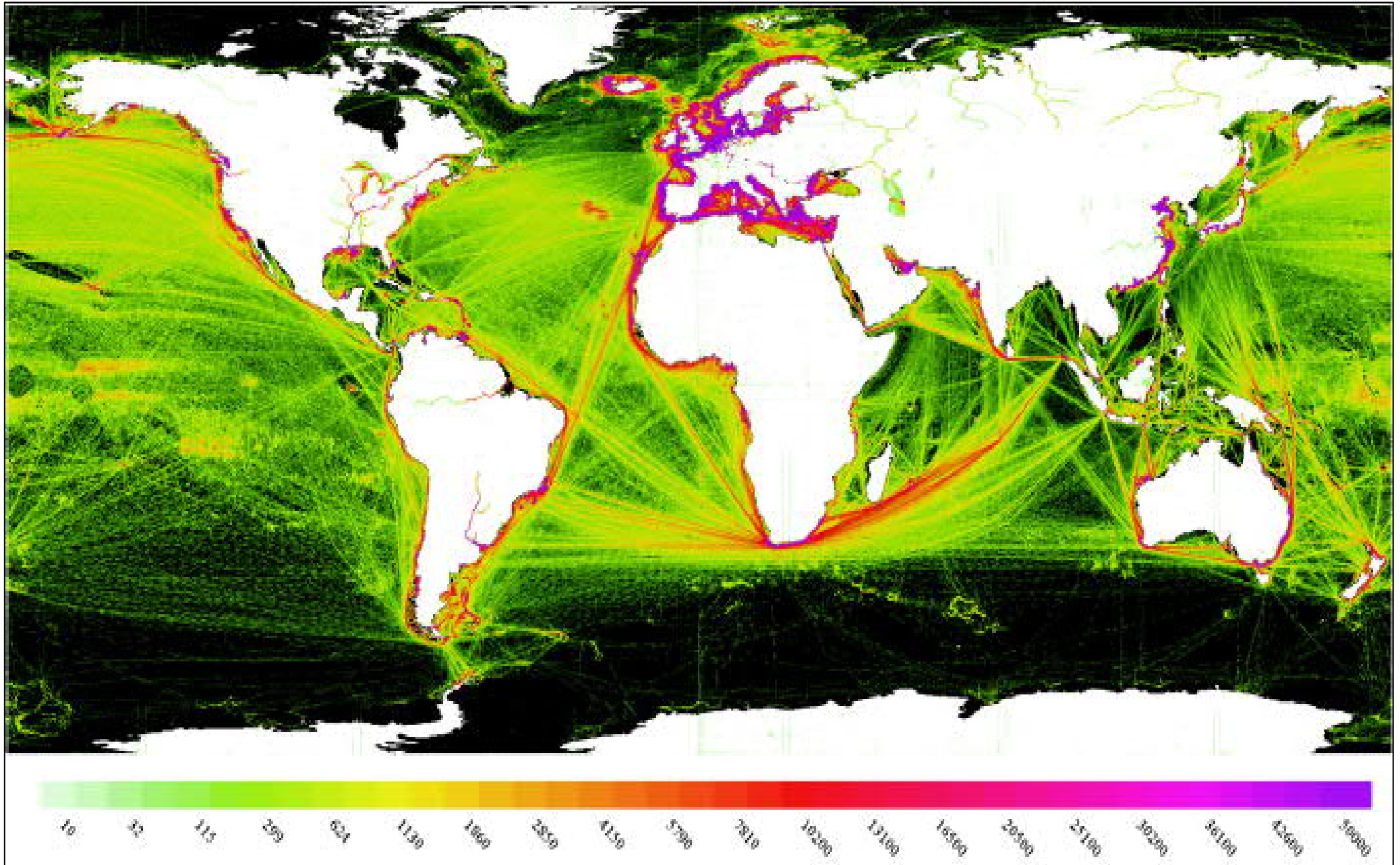


Upgrade and retrofit



Training and education

SICK WORLD WIDE CLOSE TO THE MARINE TRAFFIC





THANK YOU FOR YOUR ATTENTION

SICK
Sensor Intelligence.

For further information

+39 349 4209 409

salvatore.squillaci@sick.it

www.sick.it