



Sea Sentries

Your personal lifeguard at sea

The Sea Sentries



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Ships have Situational awareness ...

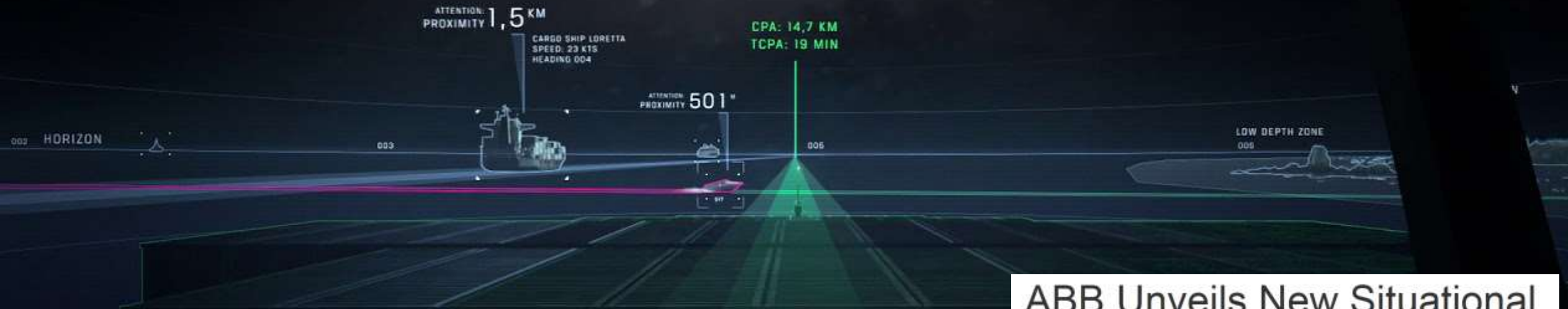


ABB Unveils New Situational Awareness Solution

Rolls-Royce Launches "Intelligent Awareness" Navigation System

Maersk to Test AI-Powered Situational Awareness System Aboard a Containership

... but **passengers** still struggle to



Evacuate in an emergency



Navigate onboard the ship



Locate friends and family

... and ship personnel still struggle to



**Notice passenger violence
and abuse**



**Know when and where staff
is needed**



**Learn passenger's individual needs
and behaviour onboard**



Our solution
increases **safety** and
passenger **awareness**

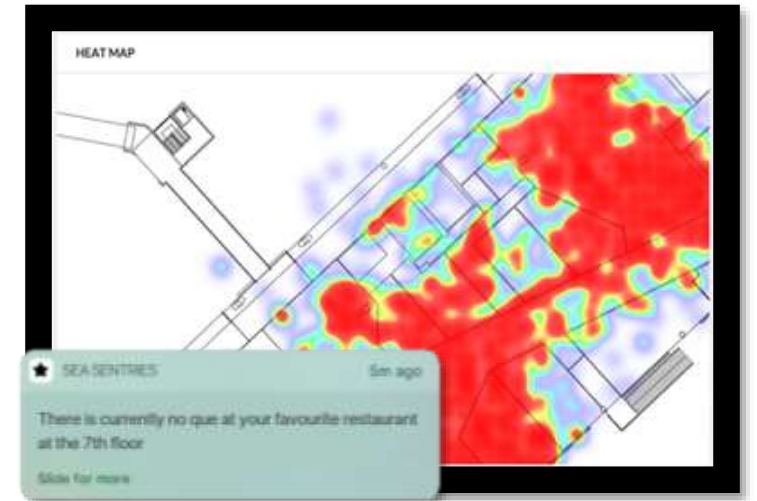
Solution: Interactive real-time map



**Positioning and navigation
onboard**



**Evacuation guidance and
personal safety alarm**



**Activity monitoring and proactive
notifications**

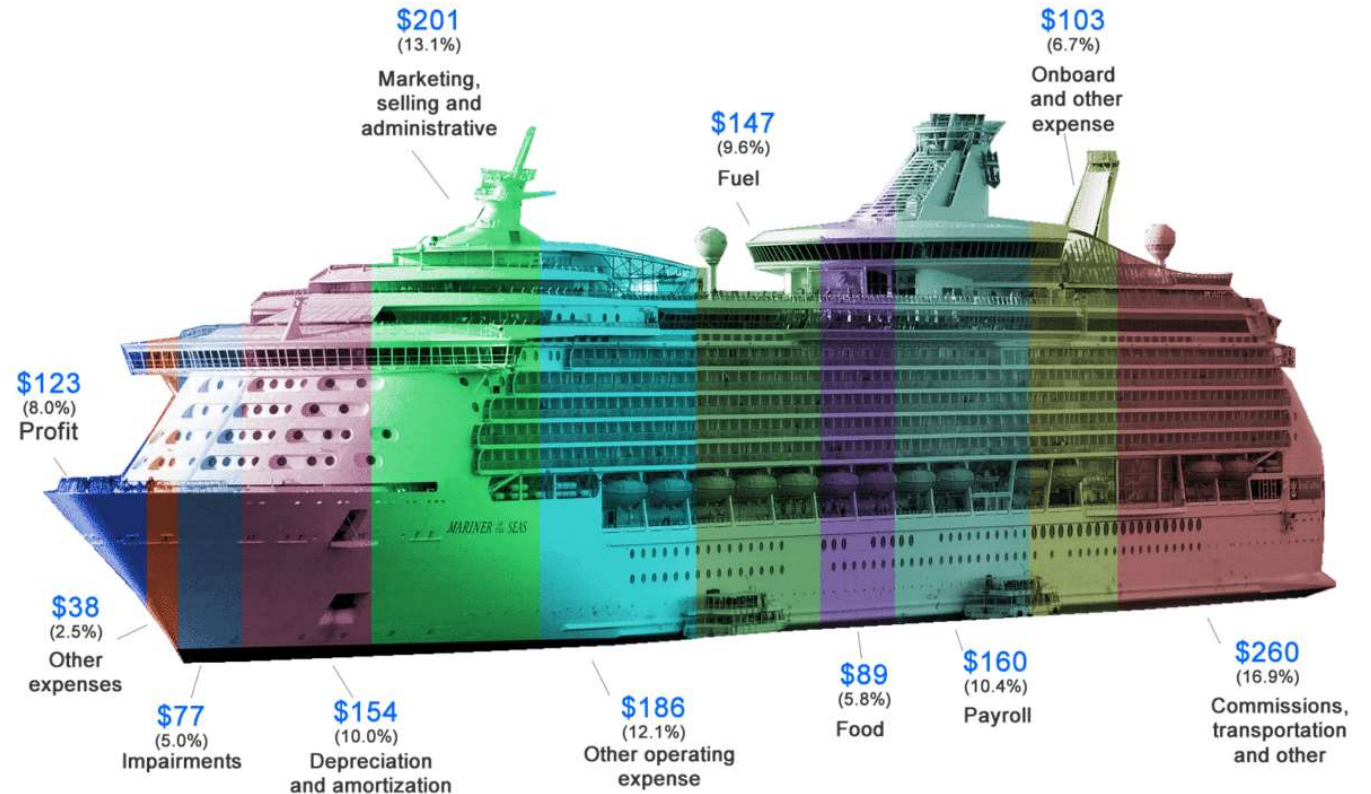
Improve operations

Personnel can monitor:

- Passenger's activity to improve service quality

Ship operators can use:

- Passenger's data to refine future operations



Royal Caribbean Income Statement Breakdown (2015)

Technical feasibility

- **Phone signals + WIFI / Bluetooth beacons** for precise positioning
 - **Phone's internal sensors and markers** when no connectivity available
 - **RFID cards / Bluetooth bracelets** for children or passengers without phone
 - **Cameras, Thermal and Time of Flight sensors** for activity identification
- + Cameras, RFID cards and WIFI is already available on cruises
- Installation is ship layout specific

Ship installation



Multiple **Bluetooth beacons, cameras and markers** are installed on every deck of the ship to locate passengers

Financial feasibility

- + Off the shelf hardware and software makes solution cost effective
- + Low maintenance cost
- High initial installation cost low

New revenue sources:

- Improved safety increases customer and personnel satisfaction
- Bluetooth tags / bracelets can be bought separately for children
- Passenger behaviour statistics for personal offers and marketing

Future opportunities



- **Smart assistant / chatbot**

- Help passengers through natural language interaction and increase feeling of safety

- **Fully personalized cruise**

- Provide personal services based on passenger previous activity

- **Safety for personnel**

- Track personnel work patterns and identify inefficiencies and abnormal behaviour

- **Connect to vessel systems**

- Connect to e.g. air conditioning system to automate air conditioning based on people count

Next steps

1. Get in contact with an interested cruise line operator
2. Decide on most suitable indoor positioning solution and partner
3. Develop tailored integrations for emergency guidance and analytics





“We care and we believe that you have the right to have a personal lifeguard at sea”