



A holistic
passenger
ship
evacuation
and rescue
ecosystem

PALAEMON project: 23.03.2023

Final Review | Piraeus, Greece and Online WP8 Application Field Trials, Evaluation and Outcomes

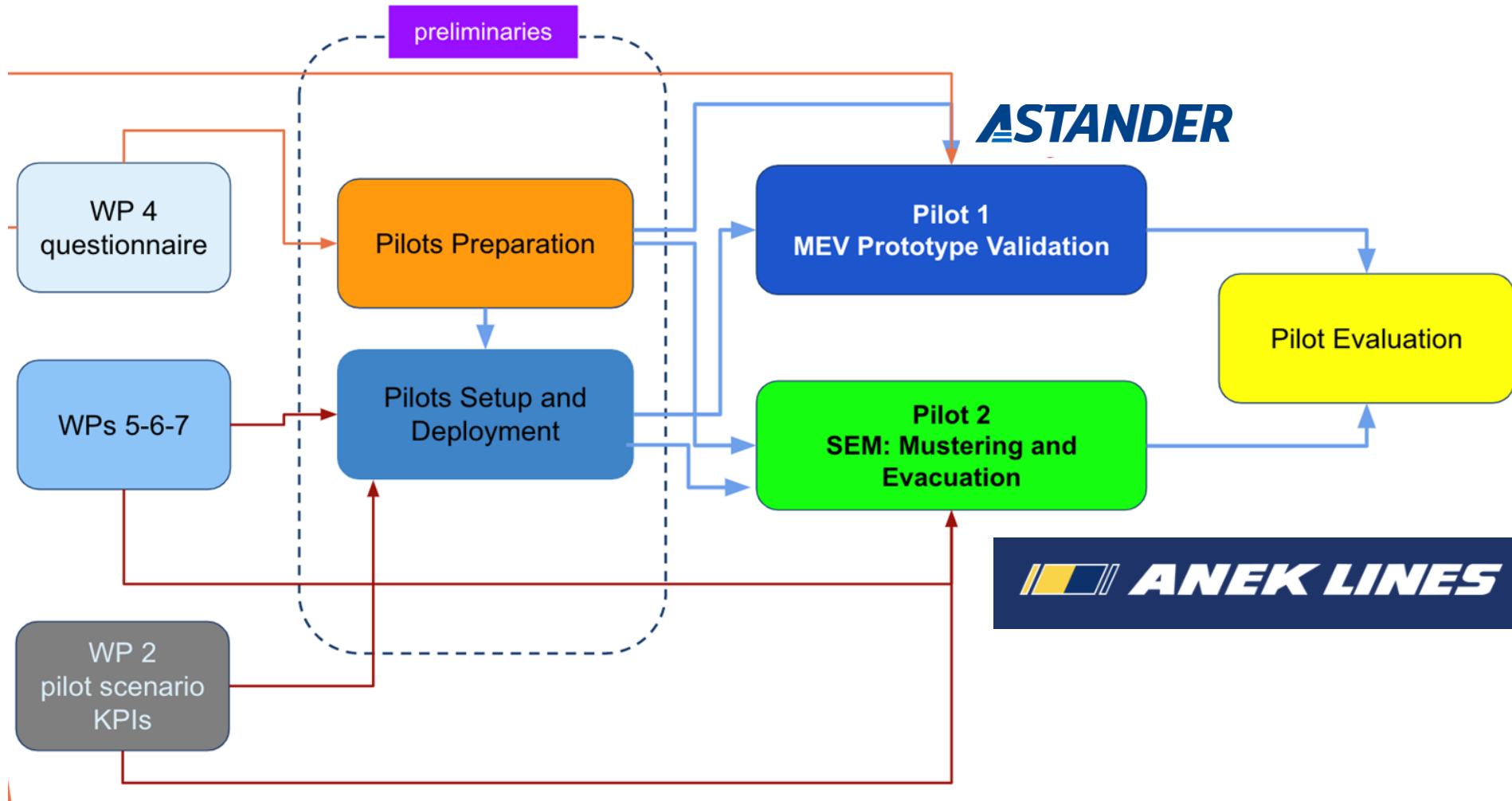
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Work Package 8

- ▶ Two-fold PALAEMON objectives
 - ▶ A mass centralised evacuation system, “based on a radical re-thinking of **Mass Evacuation Vessels (MEVs)**”
 - ▶ An **intelligent ICT ecosystem** of critical components “providing real-time access to and representation of data to establish appropriate evacuation strategies for optimising the operational planning of the evacuation process on damaged or flooded vessels”
- ▶ WP8: Prove the **feasibility** and level of **maturity** of the outcomes of previous WPs through demonstration and testing in a relevant ship environment: in a **shipyard - on a passenger ship**
 - ▶ In Spain, **in the shipyard of Astander**, where the **PALAEMON MEV** construct has been tested through simulations and trails in close sea
 - ▶ In Greece (**Port of Piraeus**) where **an operational version of PALAEMON Data Ecosystem** supporting the needs of the evacuation operations has been successfully deployed onboard of a passenger ship provided by **ANEK Lines**, an international shipping company, operating in the South of Europe, and end-user member of the Consortium (**ELYROS F/B**).

WP6 structure: preparation action - pilot action - evaluation



ICT pilot action: Insert some automation & process monitoring to improve evacuation control and efficiency

- ▶ We proved the feasibility and maturity of an ICT technology-assisted evacuation process
- ▶ The problem to-be-solved:
 - ▶ “Incomplete information”
 - ▶ Lack of real-time process monitoring mechanisms on the side of emergency responders
- ▶ **Evidence: of Failure Missing passengers...**
 - ▶ **Days after the accident, the authorities** could not form a clear view of what is going on: “.. until everyone is counted and identified we won't have one”...
 - ▶ Earlier on, when the fire broke out. “the ship's commander went around the cabins (!) and brought the passengers together on a single desk. Then he gave the order to abandon ship...”

Five 'missing' passengers found alive after ferry blaze in Greece

Elite forces and frogmen sent in to help rescue operation on Euroferry Olympia, which was headed to Italy

Helena Smith in Athens, and Lorenzo Tondo in Palermo

Fri 18 Feb 2022 19:58 GMT



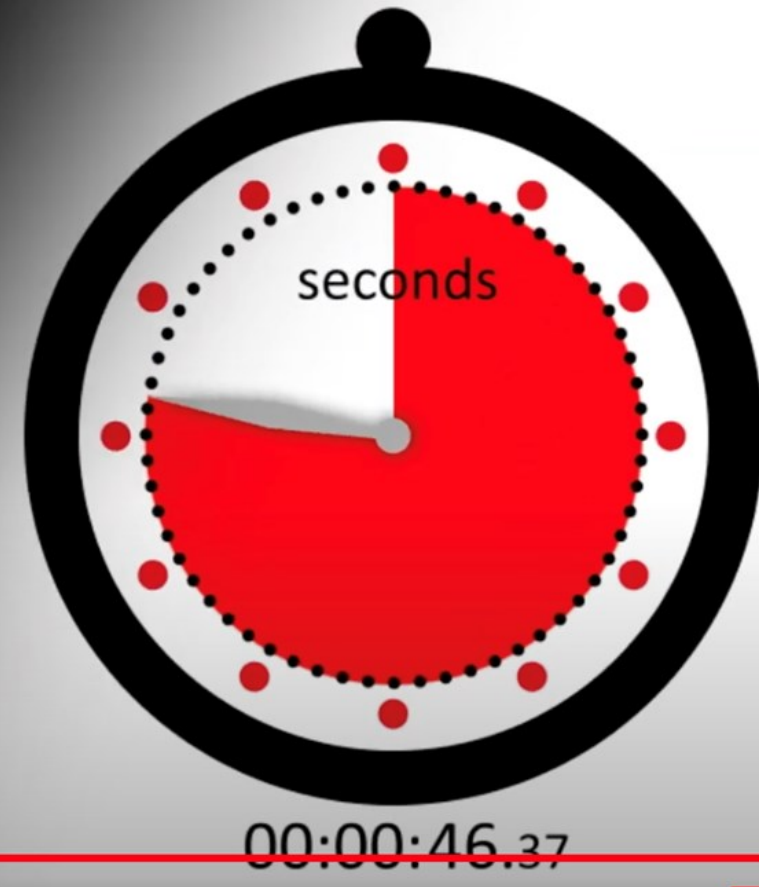
📷 Greek emergency services await the arrival of the ferry's passengers after a fire broke out on the vessel. Photograph: Eurokinissi/Rex/Shutterstock

Five out of 14 people feared missing after a ferry burst into flames have been found alive onboard, Greek media reported.

Evidence of good results

The Information Dissemination Time denotes the time required for the emergency alert system to reach the passengers

49 seconds: previous measurements from simulations and trials

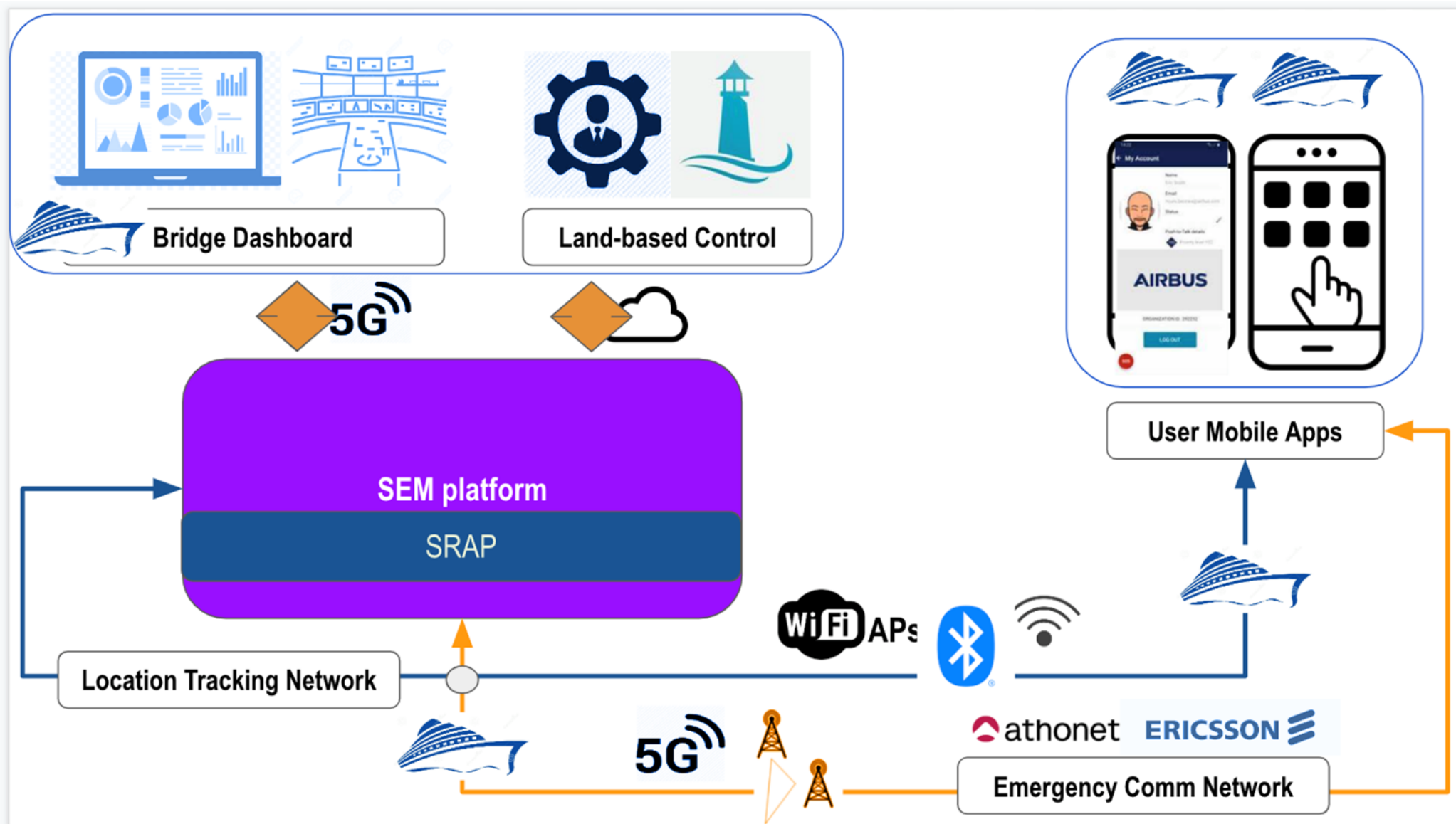


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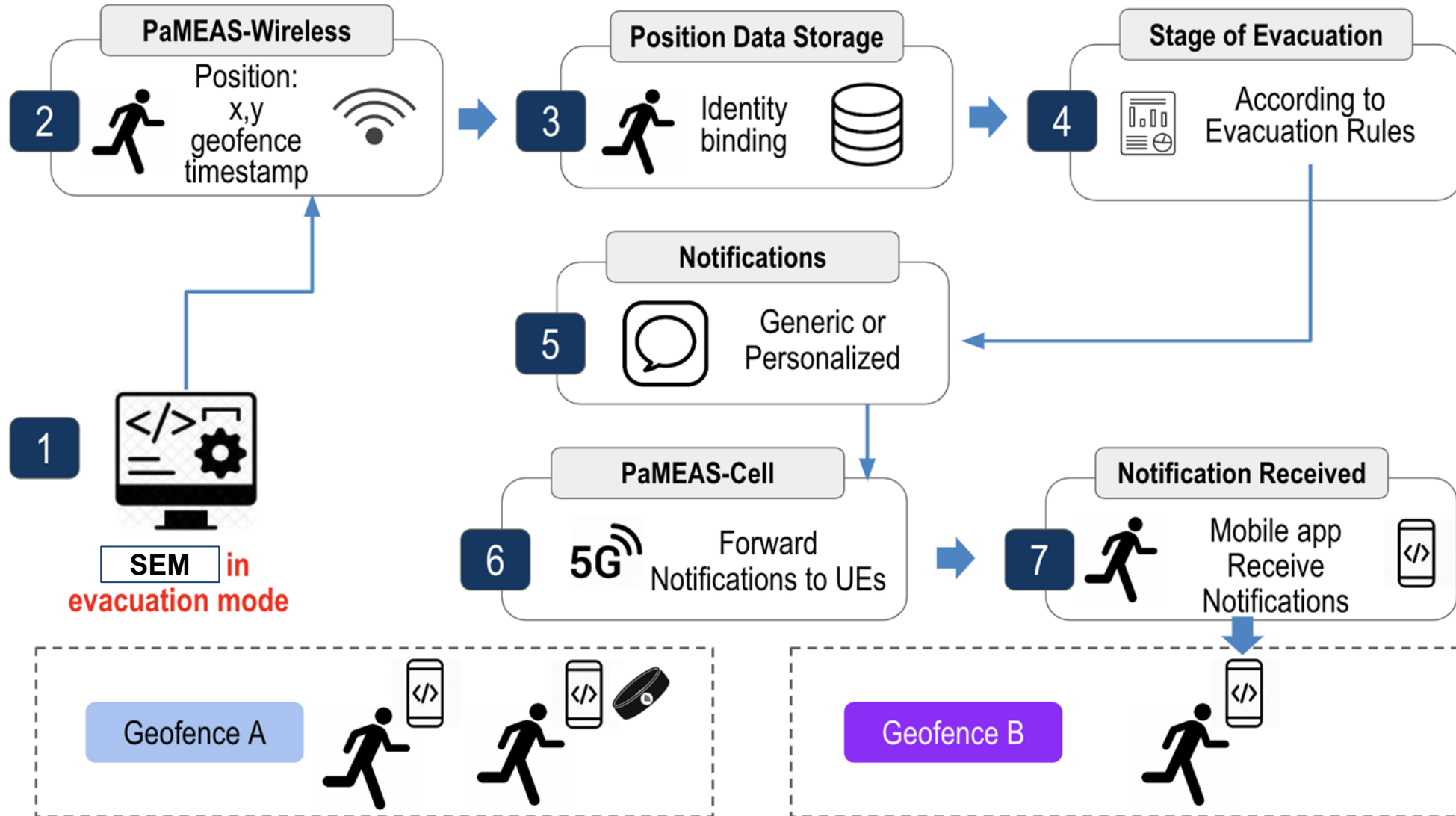
3 pilot outcomes showing feasibility and maturity: Smart Evacuation Management

- ▶ Instantly **tracking the location and identifying passengers** during the evacuation of dense crowds on passenger ships, while **enabling personalised, high-reliability, low-latency emergency messaging notifications** to be sent to passengers in an effort to:
 - ▶ alert the passengers of the emergency situation and.
 - ▶ guide them to their designated mustering stations (based on their current location and in accordance to the ships evacuation plans).
- ▶ Allowing for **real-time task assignment to crew members via a Mission Critical Push to Talk (MCPTT) infrastructure** (which replaces traditional walkie-talkie devices), and monitors their task performance, to optimise the coordination between the Bridge and the crew.
- ▶ Providing **the Bridge and Land-based control authorities with a clear picture of the evolution of the evacuation process through continuous monitoring of the mustering and evacuation operations**, during the whole emergency management process (from the initial stages of accident reconnaissance to the embarkation of passengers and crew to LSAs).

How?

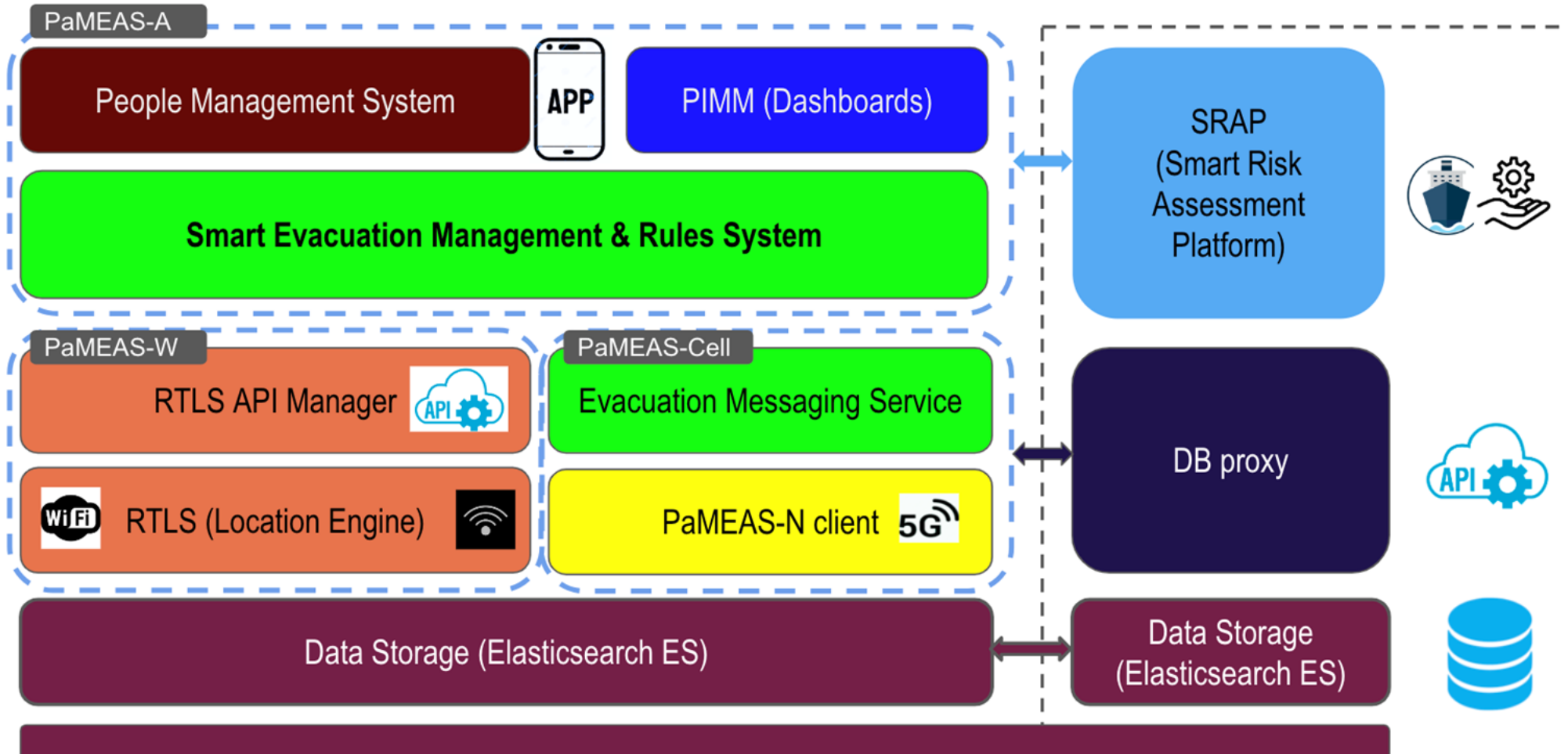


What exactly?

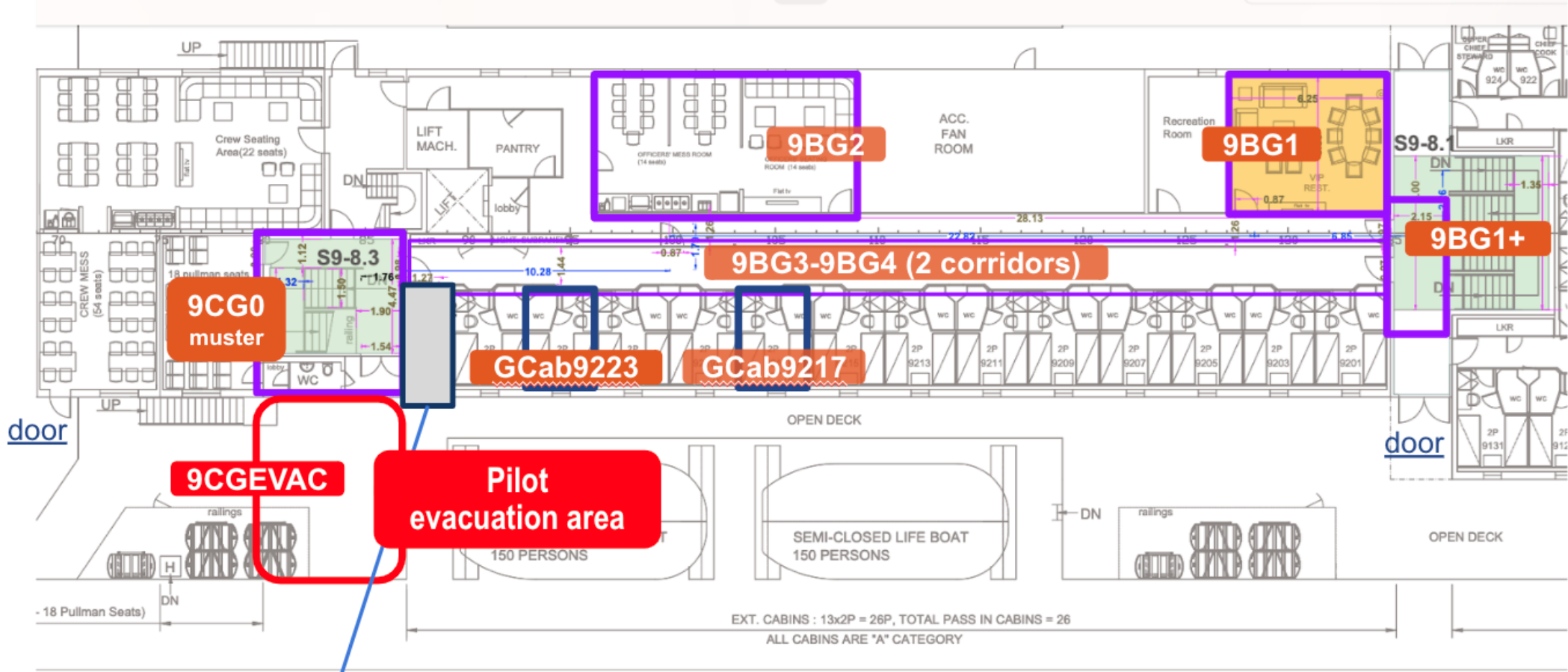


What is the core element?: Smart Evacuation Management platform

WP5 + WP3 + WP6 + WP7 + WP2



Where?

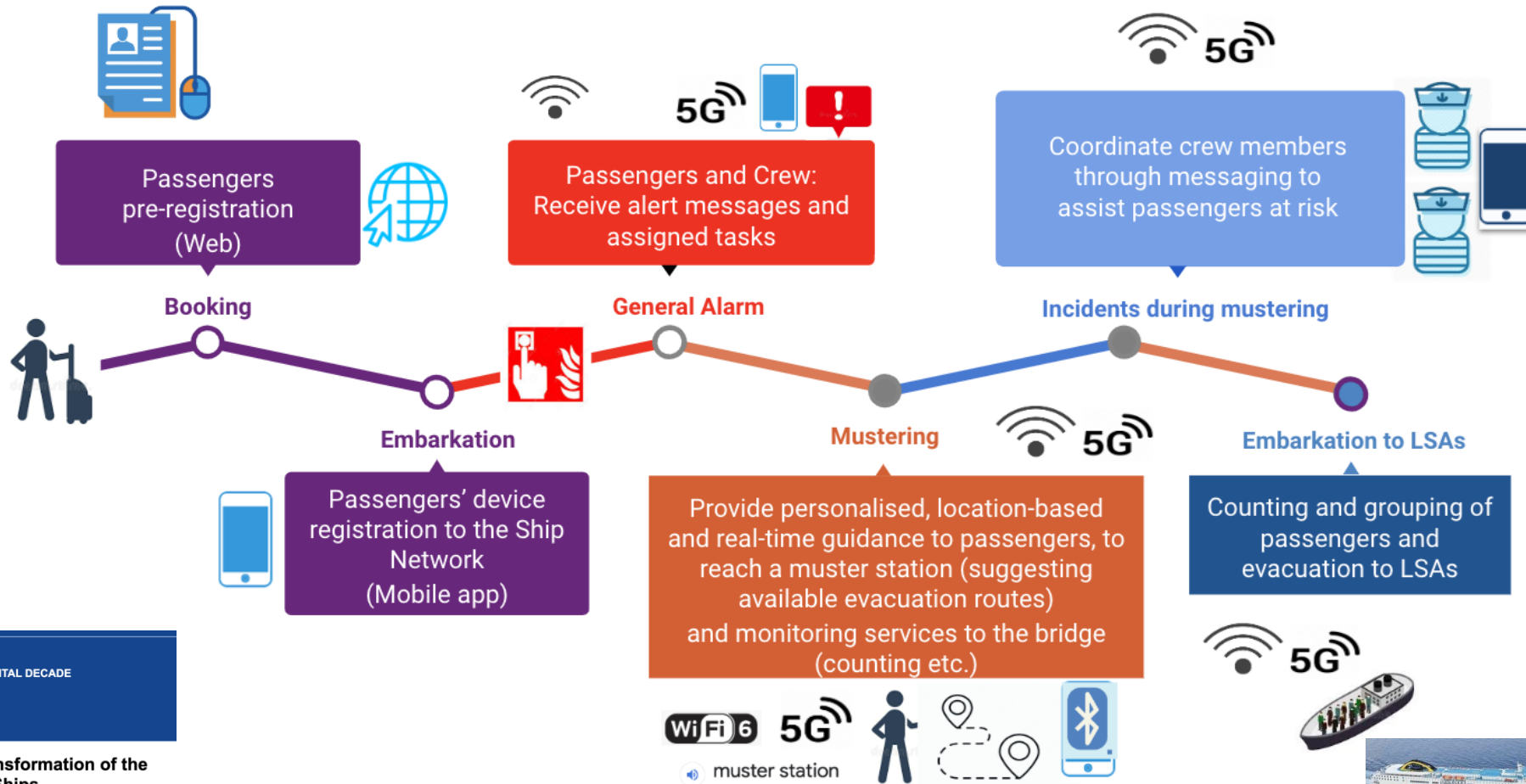




Pilot deployment onboard of ELYROS F/B (ANEK Lines)

10+ Pilot scenarios/exercises in several runs, Dec22-Jan23

D8.4-5 PALAEMON application trials 2 and 3: SEM Trial



Towards an Integrated Safety System

What's next?

1

Integration of SEM Platform with VDES | VHF DATA EXCHANGE SYSTEM system from Thales/Italy (connected ship - emergency communication infrastructure)

(*) Decided 10.3.2023

Reference: [G1117 VHF Data Exchange System \(VDES\) Overview - IALA AISM \(iala-aism.org\)](#)

THALES
Building a future we can all trust

2

Issuance of a Smart Evacuation Management NFT (Non-Fungible Token) to raise market funding

(*) Launch time: Spring 2023

(**) In collaboration with AQIFI | [Aqifi - The Open Bridge Between Web 2.0 and 3.0](#)

References:

- [How NFTs Are Creating Social Value \(forbes.com\)](#)
- [How scientists are embracing NFTs \(nature.com\)](#)

Example:

- [Cointelegraph's NFT collection curated by you](#)

AQIFI 

Pilot(s) Video Report(s)



Smart Evacuation Management platform and pilot/trail (WP8)

[Smart Evacuation Management Platform \(The Movie\)](#) (YouTube 32:34 min)

[Smart Evacuation Management \(The Trailer\)](#) (YouTube 3:19 min)



MEV (WP4 and WP8)

[MASTER MEV WP4](#) (YouTube 02.20 min)

[Interview ENG to CHIEF MATE Brittany Ferries](#) (YouTube 01.44 min)

ASTANDER



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PALAEMON Smart Evacuation Management

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