LYNCEUS

People localization for safe ship evacuation during emergency

Funding scheme: Research for the benefit of specific groups (FP7, Capacities)
Project number: 286148



People Localisation for Safe Ship Evacuation During Emergency

Consortium Partners

ATEVAL
ΣΕΠΒΕ
ΚΤΗΚ TECHNICAL CHAMBER OF CYPRUS
Lloyd's Register
SignalGeneriX ADVANCED SIGNAL SOLUTIONS
LOUIS CRUISES
csem
TECHNISCHE UNIVERSITÄT DRESDEN
Safemarine
Carena & Campi
TAMOS
Optionsnet
DEDALOS technology services
Maritime Institute of Eastern Mediterranean

Project Overview

The maritime industry is currently facing critical problems associated with the evacuation of people from ships in an emergency situation. Difficult to predict factors such as the ship motion, the floating position, unexpected sudden changes of the environment (fire, flooding, etc) affect the behavior of the passengers which becomes unpredicted in a very challenging environment. Even though there are established evacuation procedures to be followed during maritime accidents, the industry still reports deaths as a result of people failing to follow evacuation procedures and inefficient safety and evacuation plans. This issue becomes even more crucial as the cruise ships keep getting bigger.

The objective of the European funded FP7 project LYNCEUS is to investigate and demonstrate ultra-low power wireless body-area-network technologies for enabling unobtrusive localisation and tracking of people for onboard and overboard search and rescue as well as for safe evacuation of ships during emergency. The LYNCEUS technology aims to revolutionise current emergency management and ship evacuation practice through the development of beyond the state-of-the-art real-time emergency management and safe evacuation systems which will significantly contribute towards early localisation and rescue of people in danger located onboard a ship or in the sea.

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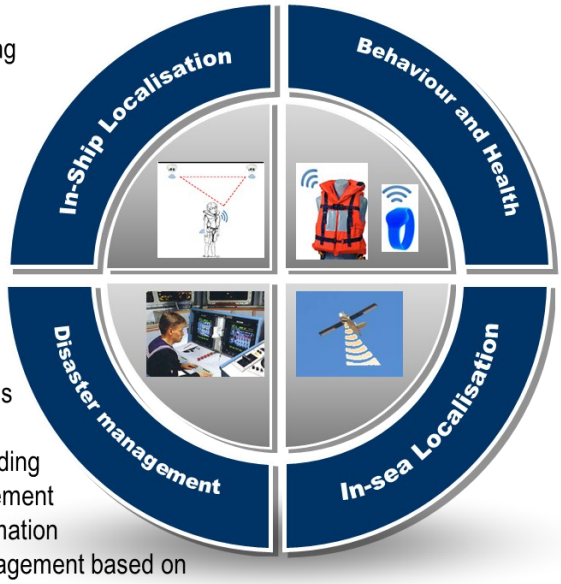
RESEARCH AND DEVELOPMENT AREAS

Onboard Localisation

- Localisation of passenger and crew during Emergency
- People tracking and counting
- Wearable locator devices (Smart Life-jackets, Bracelets)
- Hybrid wired/wireless localisation system (base-stations embedded in fire detection Infrastructure)

Real-time Disaster Management

- Monitoring of disaster status
- Guide evacuation teams
- Prediction of disaster spreading
- Advanced disaster management based on ship sensor information
- Advanced evacuation management based on passenger location and behaviour



Passenger Behaviour and Health Monitoring

- Life-jacket and bracellet embedded sensors to sent information about:
- Passenger movement
- Passenger temperature
- Passenger dryness or wetness
- Passenger health parameters

Overboard Localisation

- Life-jacket active reflector patch
- Enable localisation in extreme environmental conditions and during the night
- UAV mounted radar and on-board
- localisation
- Assistive search and rescue operations with localisation data from UAV

PARTNER ROLES

RTD Performers → **IP Transfer** → **SME-Association / SME**

SignalGenerix	SG	• Digital Signal processing • Sensor Signal Processing • Localisation Algorithms • FPGA Basestations
csem	CSEM	• Low power WSN and Gateway • WSN Protocols • Indoor and Outdoor Antennas
Technische Universität Dresden	TUD	• Active reflector and Interrogator • Overboard localisation
Maritime Institute of Eastern Mediterranean	MARINEM	• Ship Evacuation strategy • Emergency management decision support • System design and integration

NTUA, ATEVAL, SEPVE, ETEK, FMV, ATEVAL, ΣΕΠΒΕ

CAMPI	• Life saving and survival marine equipment segment
SFM	• Fire detection and smoke alarm marine equipment segment
GGD	• Maritime search and rescue equipment and services segment
OPTIONS	• Safe evacuation / abandoning and emergency management decision support systems segment

Camera e Campi, Safemarine, Dedalos, Optionsnet

LOUIS CRUISES / LOUIS	• Provision of Cruise Ship / Testing and Validation
LLOYDS / Lloyd's Register	•Technical Advice/ Actions towards standarisation

CAPACITIES

The LYNCEUS project has received funding from the European Union's Seventh Framework Programme managed by REA-Research Executive Agency (FP7/2007-2013) under grant agreement n° '286148'