
Interreg
Atlantic Area
European Regional Development Fund
EUROPEAN UNION
AT
VIRTUAL

IMPLEMEN-TATION

Challenges
9

Sollutions Implemented
9

System for monitoring and Sending Personalized Messages

MSTC Partner: CENTRO JOVELLANOS
Startup: PibiCo Compañia de Inteligencia de Negocio
y Control S.L.training

Requirements:

- multidevice with control-access permissions
- user friendly
- messages easily interpretable to students or roles working with 50 users at the same time
- open platform
- system will display all devices and status
- enough autonomy for a training day

Outcomes:

- multidevice web server app FormaciON
- mqtt' private broker
- customized autonomous portable devices uled and instant messages on training sessions
- light, sound & text customized messages
- foss stack for every component
- 6 months from hybridization to mvp

Environmental Sensor Array

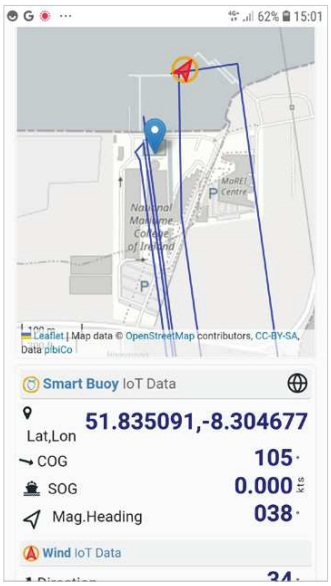
MSTC Partner: NATIONAL MARITIME COLLEGE OF IRELAND
Startup: PibiCo Compañia de Inteligencia de Negocio y Control S.L.

Requirements

- wind, water and wave sensors on buoy
- self-sufficient power and wireless connectivity
- remote controlled led warning light
- data reported through messaging protocol
- data updated every 30 seconds
- multidevice with controlled access permissions
- inexpensive hardware and software
- to be used in future researchs and projects

Outcomes

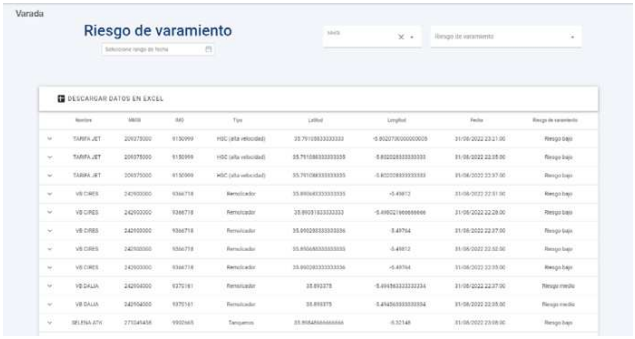
- web server app pibiDesk MTU
- multidevice 4G based local web-app
- mqtt' private broker o customized autonomous floating device
- real-time geolocation and paramaters
- foss stack for every component
- 5 months from hybridization to mvp



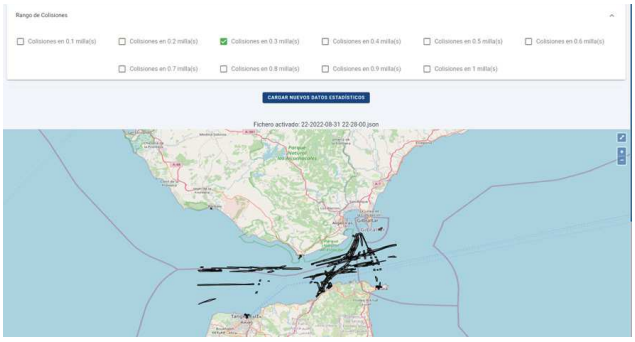
Monitoring latent risks in a specific maritime area through a Big Data driven solution

MSTC Partner: CENTRO JOVELLANOS
Startup: UP-intelligence

Risk of grounding:



Map of risk of collision:



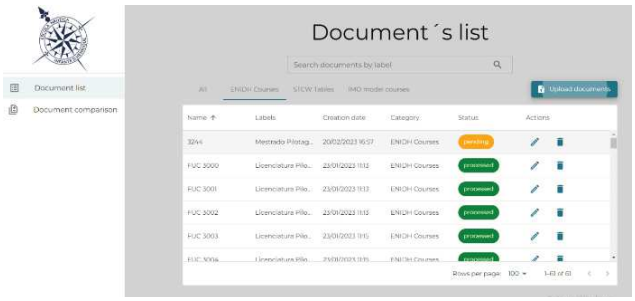
Solution:

To solve this challenge, a dynamic web map was proposed, in which all relevant information related to maritime traffic can be visualized in real time for a given geographic area. Following a data compilation phase regarding vessels, traffic density, and others, from data collected by partner and from public servers, an exhaustive Big Data analysis was performed. Then, and from these data, AI algorithms were developed in order to identify potential risks or risk-prone areas of grounding and collisions in the area of Algeciras Bay and Strait of Gibraltar

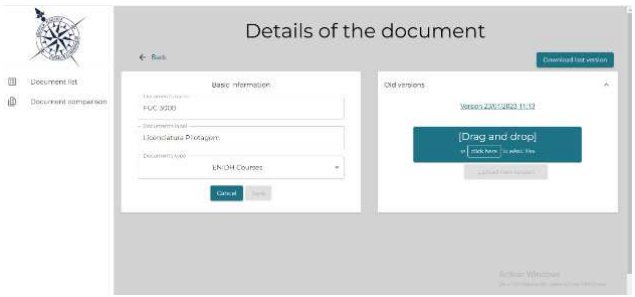
Big Data solution to verify the compliance of the maritime course programmes with the various requirements

MSTC Partner: ESCOLA SUPERIOR NAUTICA INFANTE D. ENRIQUE (ENIDH)
Startup: Koinsys, SL

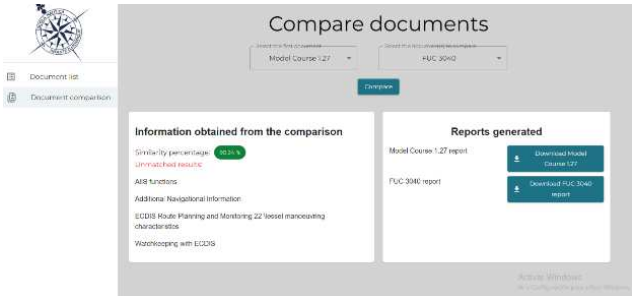
The application is operated through a very simple interface with three screens:



Main screen where you can see the list of saved documents grouped by types. Documents can be filtered by type, and tags can be assigned to them to filter by those tags.



The second screen is the document editing screen where you can change the name, add or remove tags, upload new versions or consult old versions.

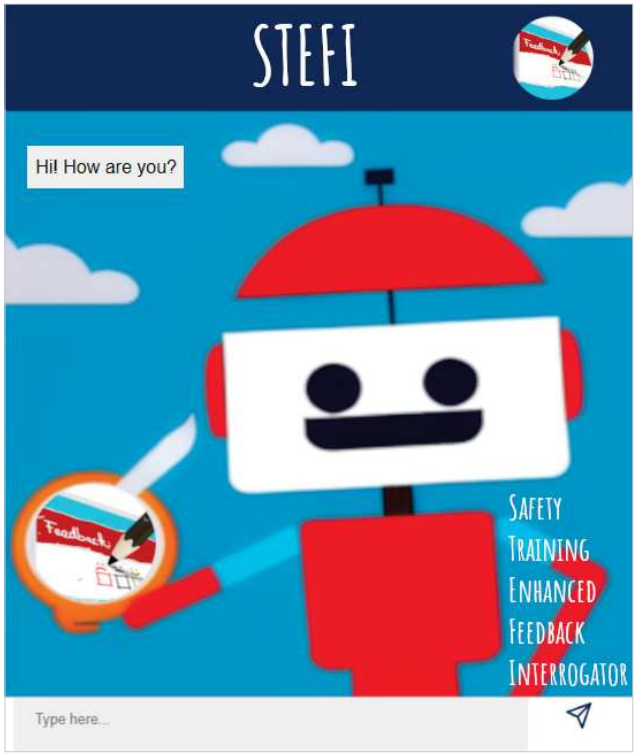


The last one is the comparison screen. A document is chosen and compared with one or more other documents. In this case the comparison is done one against several to satisfy the user's need.

The results of the comparison is a written report and in a very visual way copies of the documents where the coincidences found and what has not been found are marked in colours.

Feedback conversational system to inspire training candidates to reveal end-user insights

MSTC Partner: NATIONAL MARITIME COLLEGE OF IRELAND
Startup: UPintelligence



Solution:
The solution developed was a conversational assistant for 'feedback follow-up', a system with the benefits of social media-like interaction to encourage users to leave suggestions and make comments related to their training. It obtains feedback from the trainees, in a complementary way to the physical questionaries they filled. This tool can overcome identified barriers to feedback collection, like lack of motivation or lack of time, among others.
In this context, the solution is a) 100% flexible, meaning that the trainee can interact with the chatbot whenever they want, b) easy and intuitive to use, so every person can use it regardless the level of digital skills, and c) proactive, so it can provide recommendations of further contents related to the course, learns from user answers and adapt its questions to get more feedback.

Vision technologies for emergency procedures in a helicopter cabin mock-up

MSTC Partner: CENTRO JOVELLANOS
Startup: Azai Solutions

Solution:

The Jovellanos Centre in Asturias has a real helicopter fuselage in which emergency situations are simulated, using analogic devices that must be manually operated to train the procedures for action in each case. The solution permits performing the real sequences of events in two practical cases, simulating the AW-139 helicopter model, which is currently used by the rescue fleet.

The objective of this solution is to equip the cockpit with digital technologies that allow simulations to be as realistic as possible.

Digital simulator

The digital simulator consists of integrating the necessary digital and analog elements into the cockpit to enable the crew to train emergency procedures.

To achieve those objectives, two tactile screens have been installed in the front panel, that can simulate visually and functionally the real commands at the AW139 helicopter.

The screens allow the user to “press” buttons simulating the actual dashboard of the helicopter while also sending signals to the onboard computer, where the instruction is recorded and the corresponding sequence of actions is initiated in each case

Immersive scenario

The final solution includes the digital integration of the flight information displayed on the front panel, ambient effects such as sound, vibration, fire and smoke on board, and the external environment consistent with the programmed sequence.

Virtual Reality for Fire Fighting Training

MSTC Partner: NATIONAL MARITIME COLLEGE OF IRELAND
Startup: Virtual Tour Media

Solution:

Performance Based eLearning ~~Virtual Reality~~

Working with the Irish Navy Service (INS), we set out to create a bespoke solution that would create a positive impact on their trainees performance in Confined Space Entry and Four-Man Entry exercises. Our initial meeting with the INS and our subsequent performance evaluation defined exactly what the key performance issues trainees were and more importantly, why wrong steps were being chosen over correct procedure.

We provided the client with immersive interactive videos that is story driven, highly emotive and engaging and places the user at the centre of realistic scenarios - something they have not experienced on the training yard e.g. as Jones, you escape from a water holding tank when your ELSA goes off and as Murphy you fight an engine room fire as the IC on board LE Collins.

Our scenarios engage learners to perform on the spot by making the right choices - just like in real life. We purposely placed learners in control and 'in the deep end' so that they could feel how a real scenario plays out and experience realistic negative consequences for their complacency in a safe digital

environment rather than in an actual fire event. e.g. Jones passes out when he takes too long to don the ELSA, a burst of flames when water is mixed with oil.

In our interactive video, we placed correct choices alongside the trainees commonly chosen incorrect choices to really challenge trainees to change their behaviour and to encourage them to experience the negative consequences of their any errors. Initial testing on a small sample suggested that participants gained a realisation that 'this could actually be me some day'. This intentionally facilitates greater respect and curiosity amongst trainees when it comes to their general training.

Both modules contain additional instructor videos based on their incorrect answer to further enhance and correct their behaviour and performance.

Internet of Things: Enhancing small craft handling and rescue training

MSTC Partner: ESCOLA SUPERIOR NAUTICA
INFANTE D. HENRIQUE (ENIDH)
Startup: PibiCo Compañia de Inteligencia de Negocio y Control S.L.

Requirements

- gps* and imu* sensors on boats and dummy
- existing weather station and AIS* integration
- vessel position graphically displayed in map
- dashboard with numerical information
- configurable by user
- ready for additional IoT future devices
- menu for start/stop recording
- registering for analytics and research

Outcomes

- web server app pibiDesk ENIDH
- multidevice 4G based local web-apps
- mqtt' private broker
- customized autonomous portable devices
- real-time geolocation and parameters
- foss stack for every component
- 4 months from hybridization to mvp

Astronavigation Training in Virtual Reality

MSTC Partner: ESCOLA SUPERIOR NAUTICA INFANTE D. HENRIQUE (ENIDH)
Startup: Inklusion Entertainment

NAVVR - Astronavigation Training in Virtual Reality (VR) – aims to improve the training of Astronavigation by enabling full control of a realistic Virtual Reality simulation of the Celestial Sphere, where the user is placed in any geolocation, at any time of the day, in any day of any year, while configuring the length of a day in real-time.
NAVVR allows the user to interact with a digital VR dashboard where it is possible to configure a training simulation by setting the: Geolocation; Date & Time (GMT); Coordinate System (Horizontal, Equatorial, Hourly); Duration of a Day (E.g., One day takes 30 minutes to complete); and objects visible in the Celestial Sphere.
Our solution contains a realistic simulation of the Celestial Sphere, including Celestial Bodies such as: Stars; Planets; Constellations; Meridians; Equinoxes or Solstices; Time zones; and all relevant information for Astronavigation, such as the body's name, coordinates, apparent movement, and others. During the simulation, the user has access to information regarding the GMT and local time and can also select any celestial body in the celestial sphere, to visualize it's coordinates in the chosen coordinate system, or to visualize the corresponding Navigation Triangle, or Star Meridian. It is also possible to customize the user's point of view: from the sea surface to simulate the real-word experience, or from outside of the celestial sphere to simulate the standard point of view used in training currently.

By offering total control over the simulation, in an intuitive and fast-paced manner, and by placing the user in a realistic simulation environment, we expect the learning outcomes to be much greater when compared to traditional approaches. We also hope to increase knowledge retention by allowing the user to train many realistic scenarios in a short period of time and with the possibility of easily repeating them.

www.at-virtual.eu · info@at-virtual.eu