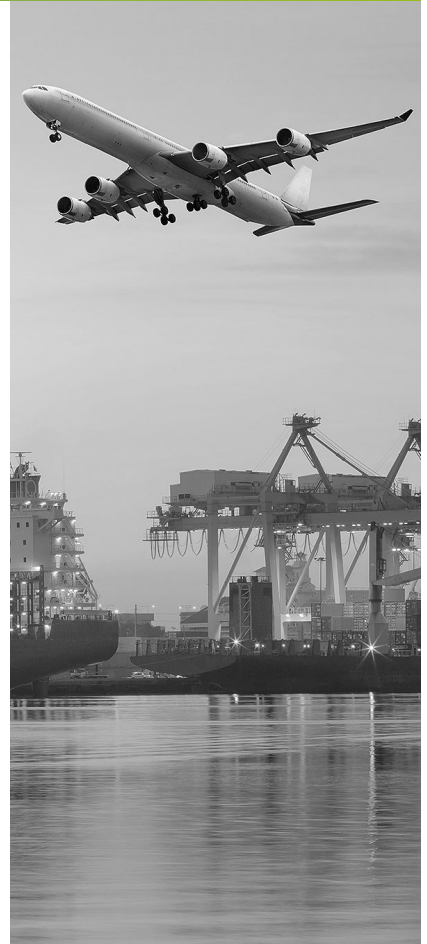# SAFEMODE

SAFEMODE in progress

The SAFEMODE project has a duration of 36 months, from 1 June 2019 to 31 May 2022, and it is a Research and Innovation Action project funded under the Horizon 2020 programme. The main aim of the project is to develop a novel Human Risk Informed Design (HURID) framework in order to identify, collect and assess data for Human Factors in a systemic way. HURID will offer tools and data for designers and risk assessors, enabling them to take human factors risk-based considerations when designing transport systems and operations.

This ambitious project will strengthen synergies between the aviation and maritime transport sectors in order to create shared methodologies for capturing Human Factors.

Submission of D4.3:
Risk framework validation with incident cases and domain case studies

Currently, there are multiple limitations on the application of Human Factors for the design of systems and operations. Designers are not always able to predict the potential impact of their design on human performance. Consequently, the systems and operations are not usually designed to minimize current Human Factors problems, this reduces the chances of recovery from system failures and adverse events. In addition, a repository for quantified (as much as feasible) human contributions to pivotal risk events does not currently exist.

To overcome the above-mentioned problems and limitations, Work Package 4 of SAFEMODE developed a set of risk models for the aviation and maritime domains not only representing the major accident categories in each sector (e.g., mid-air collisions and runway excursions, ship collisions and groundings accidents, etc.) but also including human actions and influences. The models are based on incidents and occurrences in the aviation and maritime domains. The work described in D4.3 provides the report of the first validation activities of the SAFEMODE risk models for the aviation and maritime domains, namely a *Runway Collision* model and a *Collision in Congested Waters* model.

Inside this issue

The process of risk model validation can be described in two parts:

Part 1 of the validation activities addresses the proof-of-concept activities – the models can capture information in real safety occurrences as intended. This validation aspect involved analysing several real-world incidents using the appropriate risk model.

Part 2 addressed the applicability of the models. Stakeholders not involved in SAFEMODE risk model developments were surveyed during a dedicated workshop to collect their opinion on the design of the models and the intended uses. This   workshop preliminarily confirmed the validity of the initial model results and of the experimental approach adopted to assess the risk models.

Some interesting findings:
Figures 1 and 2 show the results of the rakings of the main factors contributing to incidents, based on how frequently these factors appear in incident reports.
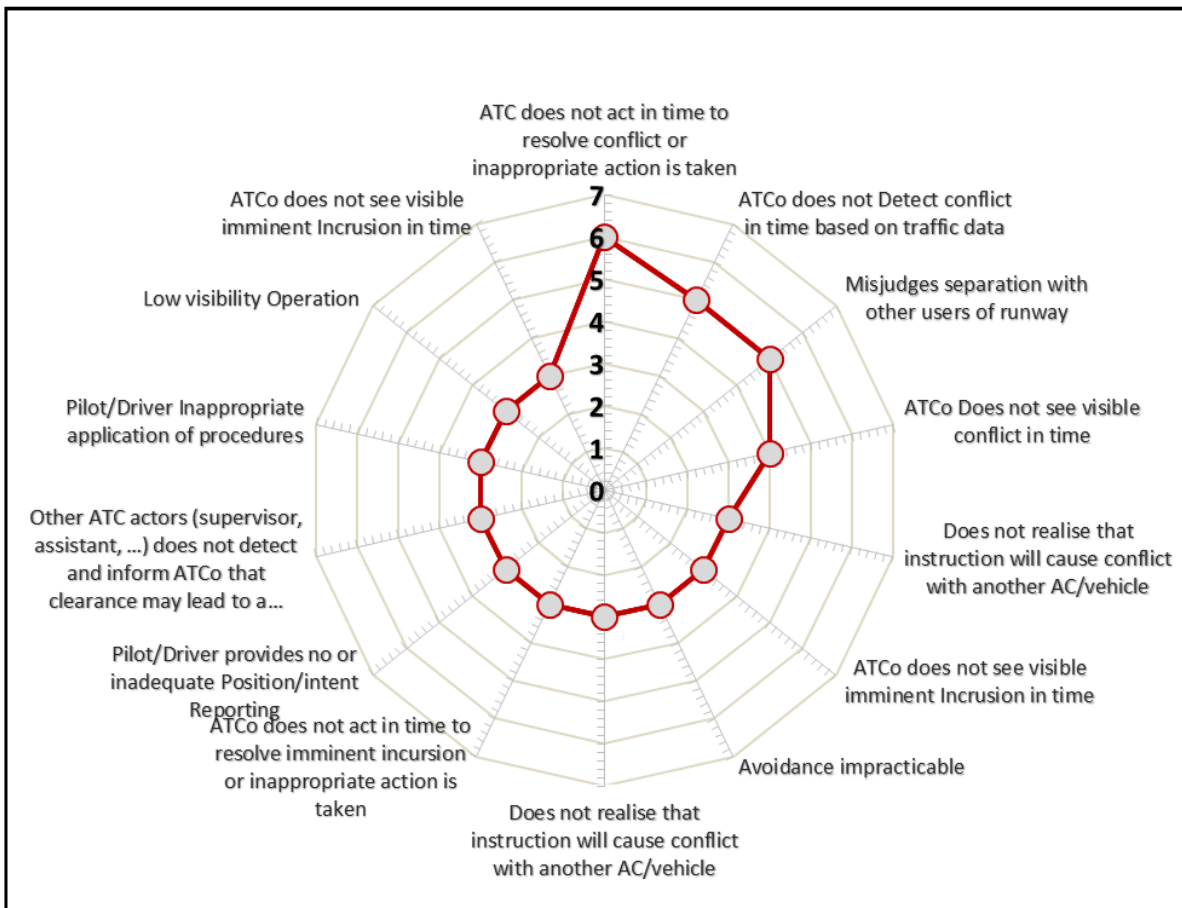

Figure 1: Barrier failures attributed in Runway collision reports
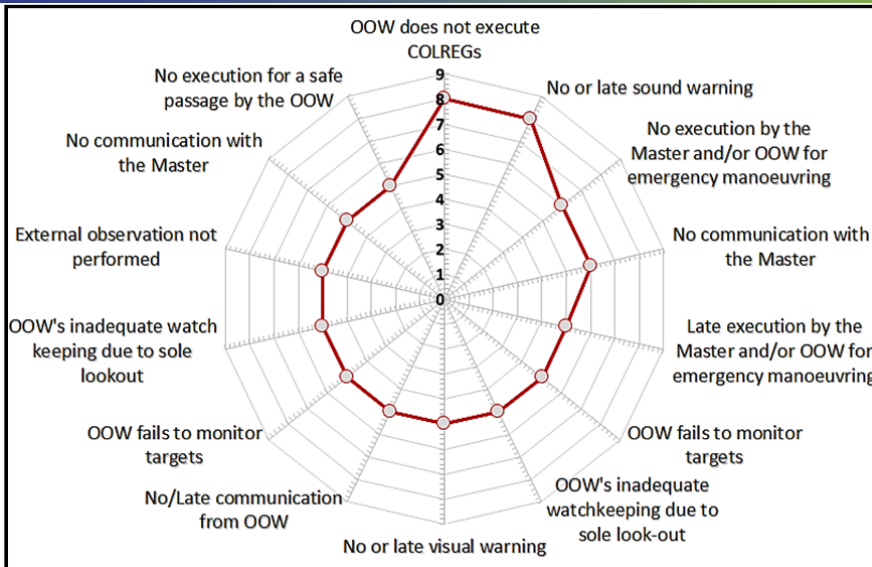
Figure 2: Barrier failures attributed in Congested collision reports

Figure 3 identifies the benefits from the risk model quantification identified by subject matter expert surveys.
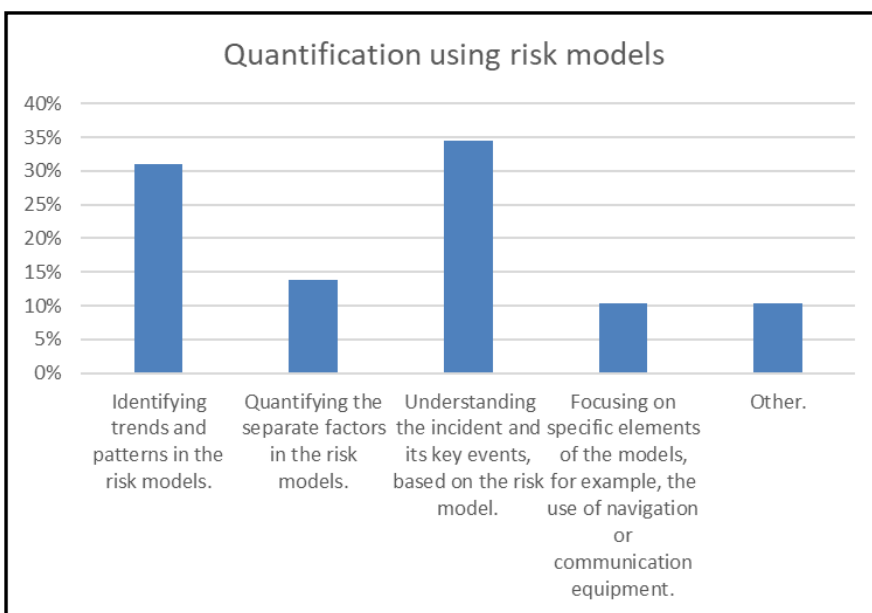

Figure 3: Survey of benefits from model quantifications

Conclusions:

A full report on the validation activities can be found in D4.3. It was viewed that the models developed to date demonstrate sufficient face validity for continued development. However, the following improvements were suggested:

- The risk models need to be simplified and made user-friendly.
- Terminology in the risk models should be simplified and standardized to reflect daily practices of stakeholders within the safety communities and terms that are used in daily practice in the maritime industry. This will help to understand the risk models by external stakeholders and industry practitioners.
- Training is necessary for the personnel to use the risk models and understand it.
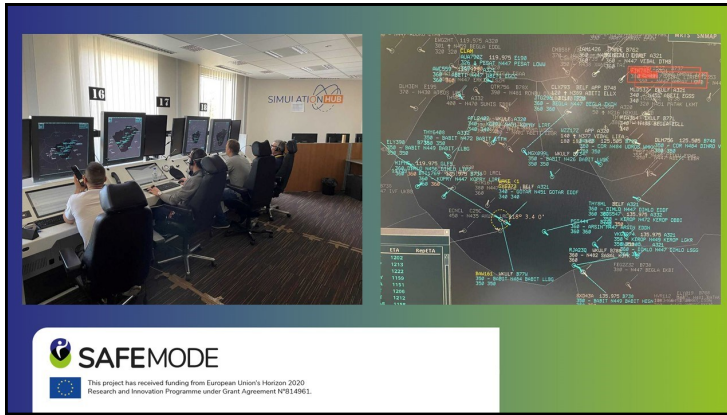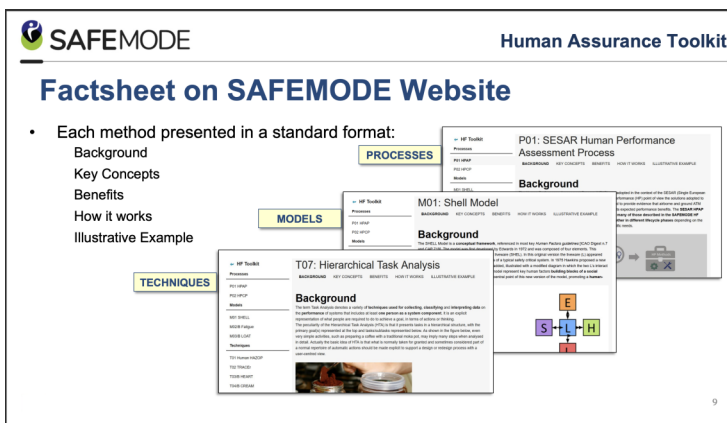
SAFEMODE Updates

In the last few months several actions have been taken concerning SAFEMODE development. These include:

◊   Case Study #1 Air Traffic Control Real Time Simulation

◊   The interviews for the evaluation of the SAFEMODE Human Factors Toolkit

◊   AIRFOX UPT flight simulator to conduct flight cockpit simulation experiments

To find out all SAFEMODE updates please visit: **NEWS SECTION**

The SAFEMODE consortium

brings together experience from the whole safety value chain. Manufacturers, service providers, regulators, academia and small-medium enterprises will collaborate to integrate Human Factors into safety and deliver safer transport systems.

◊   The CBTP-Module 1 Pilot Test with representatives of maritime administrations, Coast Guards, and other maritime institutions.

1st SAFEMODE Dissemination Workshop

The 1st SAFEMODE Dissemination Workshop took place successfully online on 15th December 2021. Around 80 participants including SAFEMODE partners and external participants .

All the SAFEMODE presentations are accessible HERE

We presented the main outcomes of the project:
-SHIELD: Human Factors Taxonomy & Database for Safety Learning
-Human Factors Based Risk Models Developments
-Human Assurance Toolkit
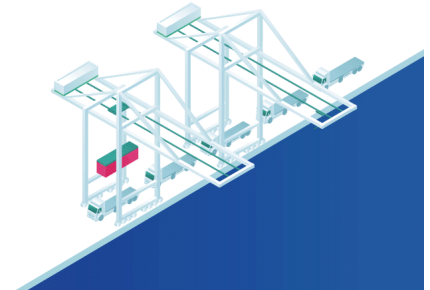-HURID framework to support design, operations, and continuous monitoring

We are very thankful for the fruitful discussion among advisory board, stakeholders and associated partners.
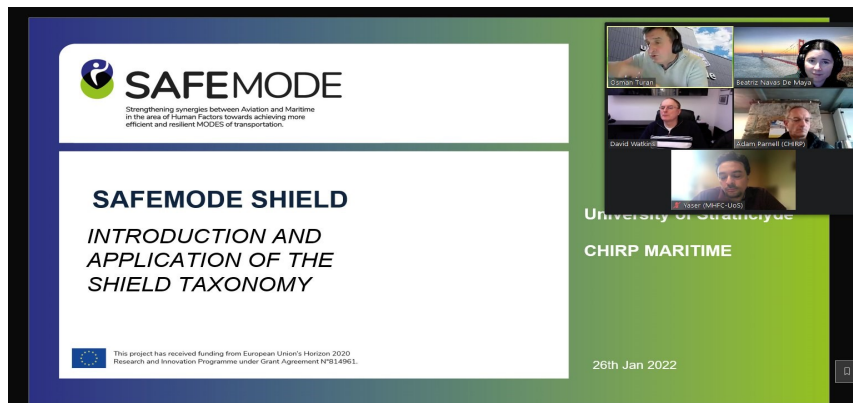
SAFEMODE   participations:

- 4th Global Conference on Innovation in Marine Technology and the Future of Maritime Transportation (GMC'21)

   18-19 November 2021

- Workshop with CHIRP Maritime

   26 January 2022

- SAFEMODE project has been participating in OCIMF's Human Factors Functional Committee during the last year. OCIMF members have been updated on SAFEMODE developments and collaboration on Culture and advocacy of key outcomes has been established between OCIMF and SAFEMODE project. For more information please visit:

⇒   Meeting ([March 2021](#))
⇒   Meeting ([September 2021](#))

Future event

Webinar: <u>Towards a Safety Learning Culture for the Shipping Industry</u>

7th April 2022 at 10:00-11:30 CEST (hosted by <u>WMU</u>)

We are happy to announce our upcoming Webinar, which will feature the White Paper "Towards a Safety Learning Culture for the Shipping Industry" which was developed within the framework of SAFEMODE EU-funded project involving maritime and aviation partnerships.

Safety Culture is explored in this White Paper through interviews with national investigators and seafarers, as well as discussions with maritime stakeholders like shipping companies, NGOs, and regulators. In addition, the paper emphasizes the importance of a Safety Learning Culture and outlines ten good practices for enhancing safety learning. In conclusion, the paper presents several maritime use cases that illustrate how Safety Learning is being applied today in the shipping industry.

<u>CLICK HERE TO REGISTER</u>

On 7th April, the White Paper will be available for download <u>project website</u>

SAFEMODE

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