IMPACT MONITOR
KEY OUTCOMES

Collaborative impact assessment framework & toolbox

Definition of requirements for the key steps in performing holistic impact assessments and monitoring of European R&I in aviation, providing guidance, tips and best practices.

Establishment of a scalable, open source, distributed, multidisciplinary, modular, and model-independent collaborative assessment framework.

Multi-level demonstration use cases

Development of three example Use Cases (UCs) that aim to demonstrate the capability of the Impact Monitor framework, on one or more assessment levels (i.e., aircraft, airport and/or air-transport system level).

Dashboard Application

Design of a novel web-based, multi-layered environment for analyzing and visualizing data from simulation workflows.

Interfaces with key stakeholders

Identification of relevant R&I initiatives and stakeholder communication needs, creation of a comprehensive R&I projects dataset, and fostering stakeholder involvement.

Impact Monitor Academy

Employment of Master's students in the scope of internships, to develop impact assessment models focused on aircraft/airport/air transport system levels, under the supervision and support by the project partners.

OUR TEAM

CONNECT
WITH IMPACT MONITOR

- 101097011
- 01 February 2023
- 24 Months

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Design by EASN-TIS

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IMPACT MONITOR

A system of systems approach to Aviation Impact Assessment

Funded by the European Union

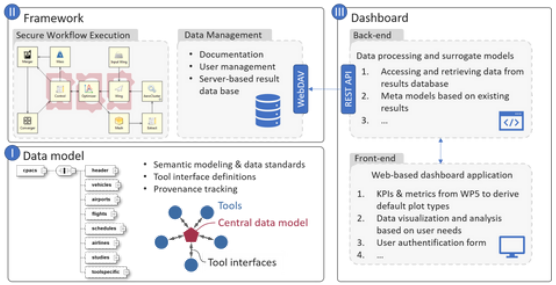
Coordinated by the German Aerospace Center

FRAMEWORK & TOOLBOX

Toolbox: A reference choice for technology and policy assessment and monitoring of the environmental, economic and societal impact of European R&I in aviation.

Collaborative impact assessment framework:

- Leverages distributed networks of design and analysis tools connected through web-based workflow systems
- Advances the Common Parametric Aircraft Configuration Schema (CPACS) to model complex air transportation systems

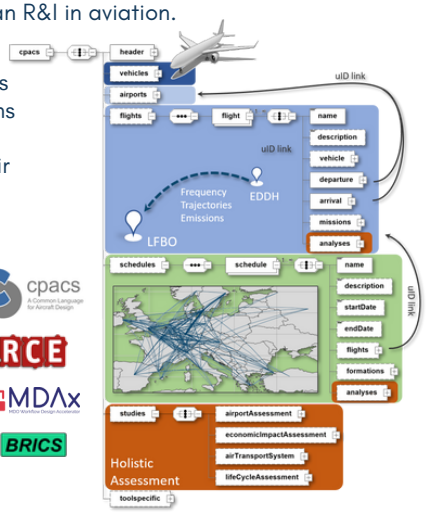


cpacs

RCE

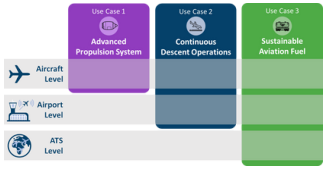
MDAx

BRICS

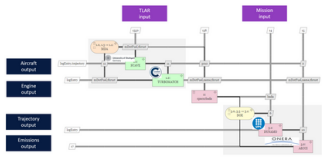


MULTI-LEVEL, DEMONSTRATION USE CASES

Three use cases that over up to 3 assessment levels (aircraft, airport, and ATS). They are implemented within the Impact Monitor framework, with results being accessible though the Impact Monitor Dashboard Application.
Inspired from R&I from Horizon Europe for 3 streams: 1) Aircraft technology/concepts, 2) ATM and aircraft operations, and 3) Policies/regulations/market-based measures.

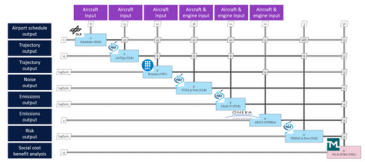


UC1 - Advanced Propulsion System



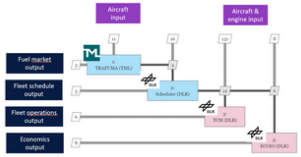
Investigate the viability and competitiveness of future SAF fuelled long range aircraft concepts

UC2 - Continuous Descent Operations



Investigate the implementation of continuous descent operations at airports

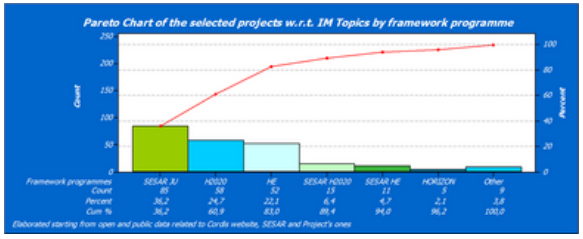
UC3 - Sustainable Aviation Fuel



Analysis of SAF policies at the air transport system level

INTERFACES

- Definition and application of a methodology to identify and analyze a set of relevant R&I initiatives
- Identification of Interfaces & Communication Requirements of Stakeholders
- Creation of a specific R&I projects dataset to collect, identify and classify the information related to European research initiatives and their attributes
- Classification of the collected Stakeholders' needs referring to the impact assessment fields of interest



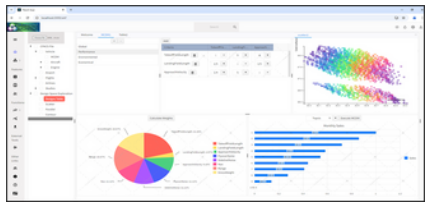
DASHBOARD APPLICATION

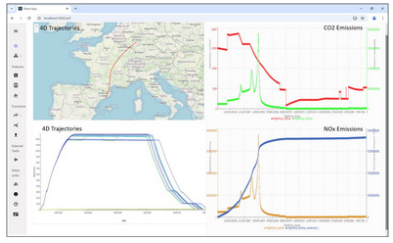
A web-based application for performing real time visualizations and interactions, while also enabling the user to create a customized dashboard board from scratch, provided that has relevant data and familiarization with CPACS.

- Development of user intuitive Dashboard Application to serve the need for visualizations, interactivity, dashboard creation, what if analysis, multicriteria decision making tool etc.
- Integration with cloud storage to store and download CPACS and other relevant files for visualization.

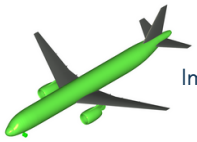
Features:

- Interactive Design Space Exploration
- Advanced Visualization Capabilities
- Comprehensive Trade-Off Studies





IMPACT MONITOR Academy

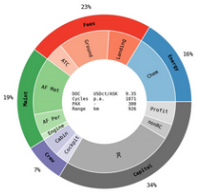


University of Stuttgart Germany

Implementation of fuselage, engine & landing gear geometry, and test the robustness through design studies

University of Stuttgart Germany

Implementation of wing, horizontal & vertical stabilizer geometry, and test the robustness through design studies



DLR

Assessment of direct operating costs, and design of experiments for different technology and fuel combinations