

IMPACT

An Integrated Aircraft Noise and Emissions Modelling Platform

IMPACT = STAPES + AEM in the Cloud

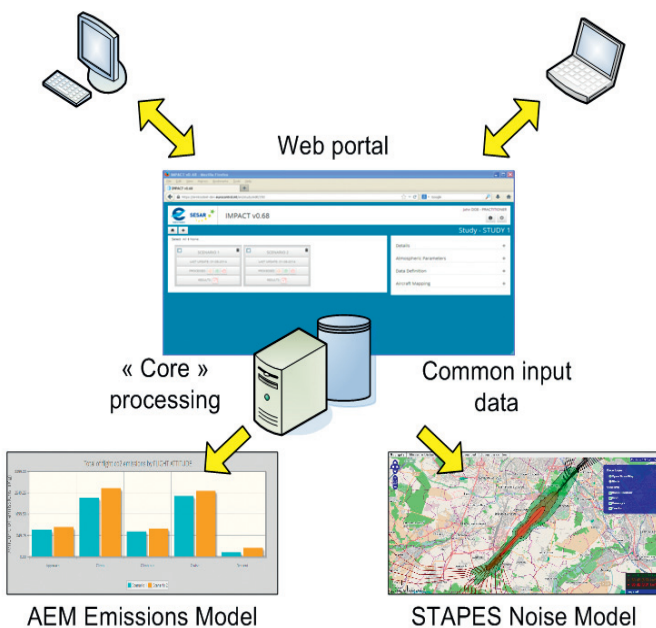
IMPACT enables both the EUROCONTROL emissions (AEM*) and noise (STAPES*) models to be run from the same modelling platform via a secure web portal. This modelling platform incorporates the notion of common input data in terms of aircraft operations and trajectories, jointly used by the integrated noise and emissions models.

IMPACT was developed in the context of the European SESAR programme.

IMPACT is planned to be used for future assessments of ICAO environmental policy options.

This modelling platform addresses the following SESAR-specific requirements:

- Provide an appropriate level of granularity (sensitivity) to correctly respond to the SESAR operational changes (in a relative way, versus a baseline);
- Cover all phases of flights (gate-to-gate) for fuel burn and emissions;
- Support studies on different scales, from the local level (e.g. specific airport or TMA) up to the global level (e.g. European network or beyond);
- Enable consistent trade-off analyses between fuel burn/ emissions and noise;
- Handle input data from different sources including FDR data, fast-time or real-time simulated data and, in the case of missing input data such as trajectories, enable the theoretical definition of operational concepts (e.g. through procedural steps definition);
- Make the system accessible to different users involved in operational projects to perform environmental impact assessments of their operational concepts.



IMPACT includes a data warehouse which hosts all the reference and default data needed by the Common Input Data pre-processor, STAPES and AEM. The reference data include in particular the BADA and ANP databases.

* AEM (Advanced Emission Model) and STAPES (SysTEM for AirPort noise Exposure Studies) are both EUROCONTROL models approved by ICAO-CAEP