

## Open Data: The Foundation of Credibility

### Key points



- To maximise the impact of performance review, results must be widely accepted.
- Trust is built through a transparent and impartial measurement process which includes repeatable, verifiable results.
- The PRC supports several initiatives to engage a wider community in data analysis, enhancing the performance of the European air transport network.

### Measurement drives improvement

The founding objective of the Performance Review Commission (PRC) is to independently measure the performance of the European air navigation system as a catalyst for its improvement. The mission is founded on the principle that measurement drives progress: *only what is measured can be improved*.

### Open Data: the currency of trust

To maximise the impact of measurement on performance improvement, results must be widely accepted. That trust is built through a transparent and impartial measurement process. In science - which should inspire all others - credibility comes from repeatable, verifiable results. This is our goal.




A key challenge is that the competitive nature of air transport requires parts of the data underlying performance metrics to remain confidential. For instance, this constraint limits the development of precise measures that depend on actual aircraft take-off weights, widely seen as commercially sensitive but essential for accurately assessing the environmental impact of air transport.

The two initiatives described below illustrate how the PRC seeks to address this challenge by engaging a wider community in data analysis, building trust, and enhancing the performance of the European air transport network - both in the context of the [OpenSky Symposium](#):

- [The Open Performance Data Initiative \(OPDI\)](#) [1], provides free datasets derived from publicly available and open ADS-B trajectory data. These datasets are designed to support thorough analysis, enabling experts to focus on meaningful assessment and comparison rather than the repetitive work of collecting and preparing data from multiple sources.

Making these datasets openly available encourages their use by, for example, university research groups, helping them to focus their objectives, enhance the relevance and applicability of their work, and ultimately benefit air transport.

### OPDI in numbers

 Period 01/2022 - 12/2025	 Flights +67M
 Events +1.6B	 Measurements +3.2B

The free OPDI dataset comprises 67 million flights, 1.6 billion flight events, and 3.2 billion measurements, detailing flight origins, destinations, timings, aircraft information, and 4D positional milestones throughout each flight.

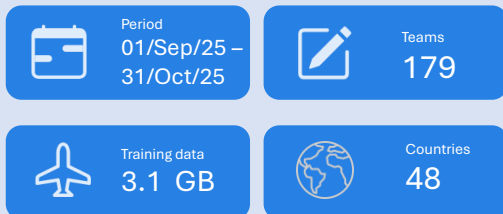
In 2025, the datasets of the OPDI have been consulted 91,407 times by 3702 unique visitors.

<https://www.opdi.aero/>

- [The PRC Data Challenge](#) [2], is an annual event designed to engage data practitioners skilled in Artificial Intelligence (AI) to generate insights into air transport behaviour. By targeting specific challenges - such as forecasting take-off weight or fuel consumption - and using anonymised data to validate the models, the initiative showcases the potential of AI to infer unavailable information and underscores the benefits of making such data openly accessible.

Participation has grown from modest beginnings to 179 teams from 48 countries in the latest challenge. The high accuracy of results, along with free access to data, algorithms, and methods, has produced promising outcomes and attracted new talent, aligning research with real operational needs.

### PRC data challenge 2025 in numbers



Building on the 2024 challenge of predicting aircraft take-off weights, the 2025 challenge asked participants to develop models to predict fuel consumption at specific flight intervals. A total of 179 teams from 48 countries - from academia, industry, government, and private enthusiasts - participated.

The best model to predict actual aircraft take-off weights achieved an error of less than 2%, with 17 submissions between 2% and 3% error.

[PRC Data Challenge](#)

### Open Data: the beginning of a new era?

Digitalisation and technological developments indicate that the era in which confidentiality was the norm, primarily for commercial reasons, is moving into a future where open data is the default and confidentiality is a rare, justified exception. Those who lead this transition will demonstrate a forward-looking vision that the sector cannot afford to ignore.

Full transparency, including sharing results, underlying data, and calculation methods for peer review, is the ultimate goal. Until then, using open data to replicate part of the calculations is an important first step on this promising journey.

For example, identifying best practices - a core element of any comparative performance analysis - is strengthened when open data enables robust comparisons and detailed differentiation between scenarios. It's all about challenging opinions with evidence. This approach seeks impact through analysis, without imposing obligations. It represents a collaborative pathway where prediction guides action.

Enriching our work with diverse perspectives, attracting talent with fresh analytical angles and new insights, expanding the scope of performance assessment through the broad scientific community, and deepening root-cause analysis are all essential steps. Ultimately, the goal is to improve diagnosis as the foundation for performance improvement. Nothing more. But, certainly, nothing less.

This is a long journey, not without difficulties. It is not the only possible path, but it is one that lies within our reach. And although we have only just begun, it is already bearing fruit.

The PRC will continue to promote a data-driven, performance-based approach that enhances transparency, reproducibility, and insightful analyses and encourages all interested stakeholders to join and contribute to this exciting journey for the benefit of European aviation.

### Background

The EUROCONTROL Performance Review Commission (PRC) is an independent body that monitors, evaluates, and reports on the performance of European air navigation services, to support decision-making, improve efficiency, and guide policy in air traffic management in the EUROCONTROL area.

The PRC publishes independent, data-driven reports and studies that assess, benchmark, and analyse European air navigation services' performance, covering efficiency, cost, capacity, safety, and environmental impact. The reports are available at: <https://ansperformance.eu>

Should you wish to comment on this publication, or to contact the PRC, please email us @: [pru-support@eurocontrol.int](mailto:pru-support@eurocontrol.int).

[1] Goens Q., Koelle R., Spinielli E., Bolc T., Cook A., Strohmeier M. "The Open Performance Data Initiative: A Foundation Supporting the European Open Science Alliance for ATM Research", SESAR Innovation Days, Rome, 2024

[2] Spinielli, E., Sun, J., Strohmeier, M., Olive, X., Goens, Q., Koelle, R., ... Fitzgerald, J. (2025). Aircraft Takeoff Weight Estimation: The EUROCONTROL PRC 2024 Data Challenge. *Journal of Open Aviation Science*, 3(2).