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New EU SESAR project, MultiModX, kicks off to enhance multimodal transport networks

The vision of MultiModX is that of a multimodal European transport system in which air and rail networks are planned and managed in a coordinated manner to maximise the efficiency, predictability, environmental sustainability and resilience of the door-to-door passenger journey.

(Paris, 12 September 2023) The MultiModX project was launched on 18 July 2023 in Brussels in the presence of its coordinator, Annika Paul from Bauhaus Luftfahrt e.V. (BHL) and SESAR3 Joint Undertaking programme manager, and representatives of the six members of the consortium: Nommon Solutions and Technologies SL (Nommon), Airport Regions Council (ARC), Technische Universität Dresden (TUD), International Union of Railways (UIC), and the University of Westminster (UoW).

MultiModX project in a nutshell

MultiModX's (Integrated Passenger-Centric Planning of Multimodal Transport Networks) goal is to deliver a set of innovative multimodal solutions and decision support tools for the coordinated planning and management of multimodal transport networks. MultiModX develops a multimodal modelling and evaluation framework, including a set of key performance areas and indicators, that enables the comprehensive characterisation of the impact of multimodal transport systems and multimodal solutions for a range of stakeholders.

The objectives of MultiModX are to:

- identify and characterise current and future scenarios for long-distance multimodal passenger transport in Europe;
- develop a multimodal performance framework;
- develop a multimodal modelling and assessment framework;
- develop a schedule design solution;
- develop a disruption management solution; and
- nurture the conditions for the transfer of MultiModX Solutions to the subsequent stages of the Research and Innovation (R&I) cycle.

The project will improve existing indicators and metrics, and complements current frameworks with more meaningful passenger-centric metrics for better measures of significant disruption (e.g. longer delays, missed connections, denied boarding, cancellations, etc.).

As highlighted by Annika Paul, MultiModX coordinator, during the kick-off meeting, stakeholders are engaged throughout the full project lifecycle for validation and discussion purposes, as well as disseminating the project outcomes to potential adopters and ensuring that the components developed contain a clear definition of integration and dataset requirements in order to provide the conditions necessary for the MultiModX Solutions to be transferred to the R&I cycle's later stages.

A European effort to deliver innovative multimodal solutions and decision support tools

The partners presented and discussed the various work packages (WP) in order to coordinate actions during the project:

- WP1 Project management and coordination, led by BHL to ensure project administration and in particular governance and strategic decision-making (committees, boards, management procedures, etc.);
- WP2 Data management, led by Nommon, whose overall objective is the development and description of the data management and protection strategy to support the models, including the establishment of a Data Management Plan (DMP) and updated versions;
- WP3 Scenario definition, led by BHL, to identify and characterise current and future scenarios for multimodal long-distance passenger transport in Europe;
- WP4 Performance assessment solution, led by UoW with two objectives:
 1. To develop a multimodal performance framework, including a set of key performance indicators (KPIs) and associated measurement mechanisms, that enables a comprehensive and rigorous performance assessment of multimodal transport systems and multimodal solutions;
 2. To develop a multimodal modelling and assessment framework, providing a performance assessment solution (SOL-1) (TRL2) that supports the design, development and evaluation of strategic and tactical multimodal solutions, with a focus on scheduling and disruption management;
- WP5 Schedule design solution, led by Nommon, to develop a schedule design solution for integrated air and rail network planning (SOL-2) (TRL2) that optimises waiting times at transfer nodes to provide more and better options for multimodal passengers. This involves defining the functional requirements of such a solution, including a review of the state of the art and consultation with the industry board. The output of the schedule design solution will be a set of air and rail timetables that will be evaluated by benchmarking them against the baseline (non-coordinated) solution;
- WP6 Disruption management solution, led by TUD, whose main objective is to model an innovative passenger-centric disruption management solution for efficient and resilient multimodal operations, by building a disruption management solution (SOL-3) (TRL2) based on coordinated tactical adjustments of air and rail schedules, speed/trajectory adjustments and passenger reallocation;
- WP7 Communication, dissemination and exploitation, led by ARC, whose overall objective is to build a strategic approach for informing target groups, civil society and the media about the project's results.

The MultiModX project is supported by SESAR3 Joint Undertaking and its members under grant agreement no. 101114815, running from July 2023 to December 2025 with a combined grant amount of €1,750,380.

During the meeting, it was highlighted that multimodality is one of the new topics fostered by SESAR, to which MultiModX will significantly contribute. In this sense, the necessity of creating a coordinator mechanism between SESAR JU projects that focus on multimodality was emphasised. Therefore, MultiModX is keen to take an active role in engaging with its sister projects, SIGN-AIR, on data sharing to implement MultiModX solutions, and MAIA, for airport and passenger archetypes as well as passenger behaviour analysis.

The MultiModX project is available on social media; follow us on Twitter [@MultiModX_eu](#) and [LinkedIn](#). You can also keep an eye out for our soon-to-be-published website: <https://multimodx.eu/>, and more information is available on the [SESAR website](#).

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