



Maastricht Upper Area Control Centre

Integrated flow management position

Enhancing air traffic flow and capacity management

The **iFMP - integrated Flow Management Position** – has been in operational use at the Maastricht Upper Area Control Centre (MUAC) since February 2015 and became the primary Air Traffic Flow and Capacity Management (ATFCM) decision-making tool in April 2016. Designed by MUAC engineering and operational teams, the iFMP helps to make the most of valuable finite ATM resources. Thanks to a set of innovative features, the iFMP paves the way for a new concept of operations currently under development at MUAC to address growing demand, structural airspace limitations and traffic pattern fluctuations in order to meet the targets set by the Single European Sky.

Integrated data sources

The iFMP features an intuitive, state-of-the-art user interface designed to improve the planning and execution of daily operations. To provide users with more accurate traffic predictions and powerful ATFCM tools, it merges data from a wide range of sources:

- the MUAC Flight Data Processing System – local trajectory predictions including controller inputs and operational constraints
- the Network Manager's flight plan data (ETFMS Flight Data) and regulation information
- the MUAC manpower planning tool TimeZone – local sector opening time planning
- AUP/UUP (Airspace Use Plan) & LARA – planning of military areas used within iFMP to automatically adjust sector capacity limits
- Weather information for relevant airports.

Innovations

The iFMP allows for the realisation of innovations that were not previously possible:

- Sector Optimiser – a function that automatically identifies periods of overload and underload and suggests the optimal alternative sector configuration, helping users to find the best solution.
- Complexity Prediction – a prediction of traffic



complexity that works by weighting occupancy with known sources of complexity and displaying the result intelligibly, allowing users to identify capacity imbalances more easily.

- Temporary Segregated Areas (TSA) Manager – a function that collects military planning information and automatically adjusts the sector capacity limits accordingly, significantly reducing users' workload.
- State-of-the-art user interface – the iFMP user interface has been developed to support the specific needs of MUAC operational staff.
- Post-operational analysis – the iFMP stores far more information than ever before and allows it to be restored on demand, supporting new types of post-operational analysis.
- Integrated air situation picture – a geographic representation of traffic predictions that helps users to gauge complexity.

At a later stage the iFMP will serve as a platform for many of the future innovations crucial to both local efficiency initiatives and MUAC's contribution to the SESAR programme:

- Expansion of the complexity predictions – integration of the cluster and bunching detection functions into iFMP will help users predict periods of high traffic interaction.
- Communication between supervisors using iFMP and controller working positions – providing information to controllers will make them aware of ATFCM plans and thus help them to deliver the best service taking into account all the relevant parameters.
- What-If scenarios – the tool will predict and present the implications of hypothetical short-term ATFCM measures such as level capping, re-routings or speed constraints.
- Traffic dispersion – automatic traffic dispersion advisories will be provided in order to spread controllers' workload evenly across the sectors.
- Traffic prediction improvements – employing new data sources from airports and airline operators and implementing statistical prediction models will improve traffic predictions.
- Further integration with the MUAC manpower planning tool TimeZone – a further phased integration of iFMP with the MUAC manpower planning system will allow for more sophisticated optimisation of available resources in the tactical phase.
- Electronic Short-Term ATFCM Measures (STAM) coordination – the integration within iFMP of the electronic definition and coordination of short-term ATFCM measures with external partners is being developed under the framework of the SESAR programme.



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