

AIRSPACE AIR TRAFFIC AND PROCESS SIMULATION SOFTWARE



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CAST Airspace offers detailed modelling of the arrival and departure ATM flows. Fast-time simulation capabilities allow for a quick, intuitive setup of complex airspace structures in terms of sectors and route segments. Thereby CAST Airspace enables a rapid, scenario based evaluation of systems in scalable levels of detail, for example to remove bottlenecks, plan resources or assess and improve a system's capacity.



CAST Airspace models feature the arrival and departure ATS routes to and from an airport including its SIDs, STARs, approach segments as well as potential transitions. Relevant airspace sectors such as CTA, TMA and CTR including pertaining subsectors are all part of the model scope. ATC concepts such as speed control, radar vectoring and holding procedures are taken into account considering related ATC procedures. Another valuable feature is the compatibility with the EUROCONTROL BADA aircraft performance database, allowing the use of industry-leading data in terms of aircraft speeds, altitude and fuel consumption profiles.

Airspace Infrastructure Planning & Optimisation:

- » Airspace layout evaluation and validation
- » Identification of capacity bottlenecks in instrument flight procedures (IFP)
- » Comparison and optimisation of ATC procedures and RWY utilisation through scenario simulation
- » Quantification of airspace operational performance
 - ATS route and sector delay
 - Sector occupation times and number of aircraft involved
 - Aircraft track miles flow
 - Trajectory fuel consumption

Airspace Capacity Analysis & Optimisation:

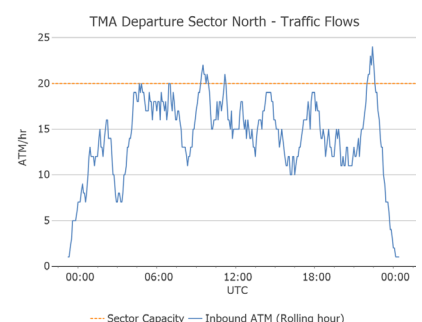
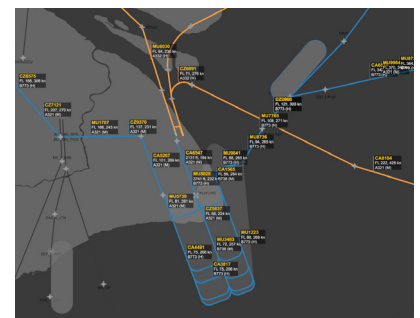
- » Quantification and assessment of capacity for airspace sectors (CTA, TMA, CTR including subsectors) in terms of:
 - Sector throughput
 - Sector load/occupation
 - Inherent ATC workload assessment
- » Quantification of capacity impacts due to dependencies within the airspace system, such as between ATS routes or on RWY level
- » Conduct studies into the ultimate/saturation as well as declared capacity of the airspace and runway infrastructure

Further Features:

- » Application of detailed EUROCONTROL BADA aircraft performance data
- » Model ATC concepts such as speed control, radar vectoring and holding procedures
- » Modern user interface and 3D visualisation for highest management attention

FACTS AND BENEFITS

- ✓ Short-, medium- and long-term decision support
- ✓ Reduced investment costs and risks
- ✓ Scalable degree of simulation details
- ✓ Efficient, intuitive and user-friendly model composition
- ✓ Visually appealing reports and videos
- ✓ Convenient DXF-based import of airspace routes and waypoints



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