



ICAO – SAM/IG/27th Meeting

AirTOP – Product Introduction

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Presented by

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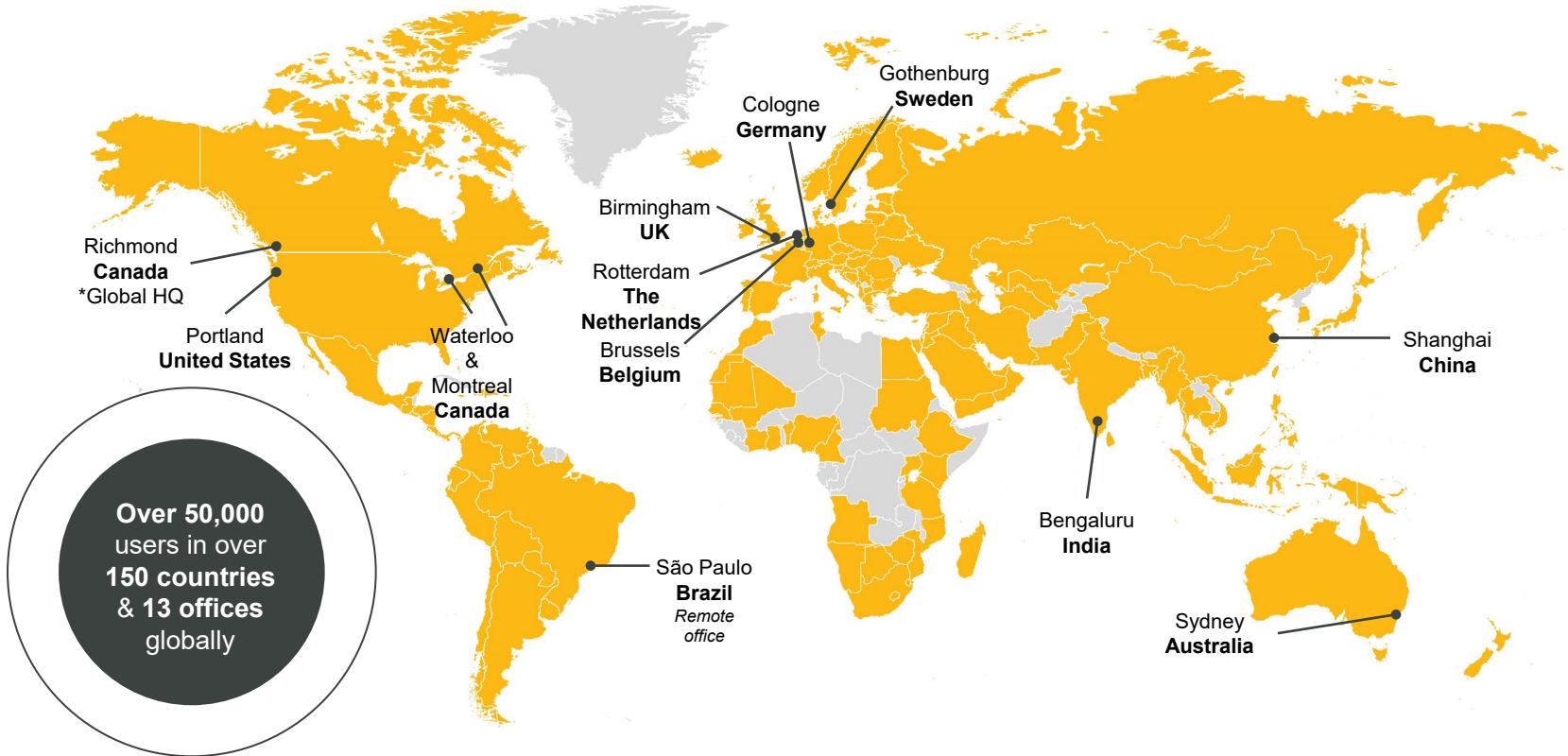


Mark Rodrigues

Director, Business Development – Aviation, Transoft Solutions



Global Reach



The Aviation Product Suite

From Transoft Solutions

Airside Design and Operations

AviPLAN Airside Pro

AviPLAN Airside

AviPLAN Turn Pro

AviPLAN Turn

SkySAFE

AeroSTRIFE

Aircraft Data Viewer

Airport & Airspace Fast-Time Simulation

AirTOP Terminal

AirTOP Airside Aircraft

AirTOP Airside Vehicle

AirTOP Runway Capacity Analyzer

AirTOP TMA/TRACON

AirTOP En Route

AirTOP Flow Management

Airport & Airspace Real-Time Forecasting & What-if

WIZer ACC

WIZer Airside

AIRTOP

Enabling Informed Decisions

Seamless Airport and Airspace Modeling and Simulation



Compatibility

System Requirements

- Full support for 64-bit operating systems
- Windows® 8 – 11 (CPU x86)
- MacOS® X 10 – 12.1 (CPU x86, M1)
- Linux kernel 2.6 – 5.16 (e.g. Ubuntu, Fedora, RHEL)



Platform Requirements

Java 8 (1.8) 64-bit



Licensing

- Site (Network)
- User subscription (Cloud)*

* *Windows only*

Languages

- English

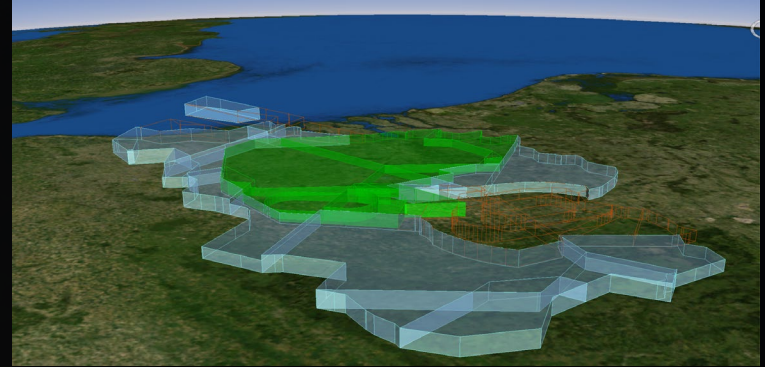
Unique Rule-Based Terminal-to-Terminal Fast-Time Simulation

AirTOP allows the creation of easy-to-use, high-fidelity airspace and airport models, which can be used in:

- Capacity studies
- Airport and Airspace design validation projects
- Providing an accurate measure of key performance indicators
- Understand correlation and causality
- Assess KPIs where operational data doesn't exist (yet)
- Environmental impact
- Conflict detection
- Controller Workload assessment
- Departure and Approach procedures (SIDs and STARs)
- Visualize and communicate results

High accuracy thanks to:

- Aircraft performance modeling
- Multi agent-based simulation (interaction)
- Airspace/Airport controller task modeling (workload)



AirTOP Model definition

STATIC DATA

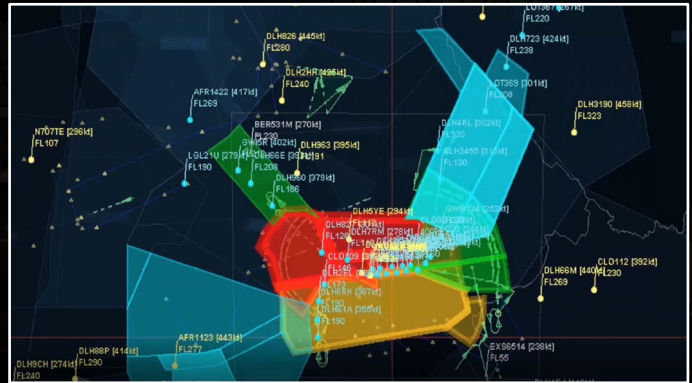
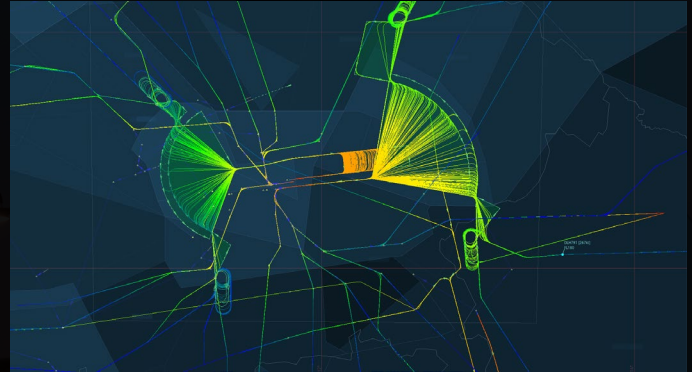
Required separation
Sectors definition
Fixes (Waypoints)

DYNAMIC DATA

Sector usage
Speed and altitude restrictions
Load balancing (DCB)

DATA IMPORT

Flight Plan Schedule
Track data import
Operational Procedures



Use cases

AIRSPACE PLANNING



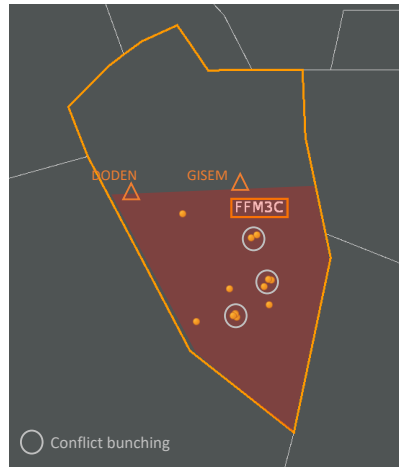
DFS Deutsche Flugsicherung



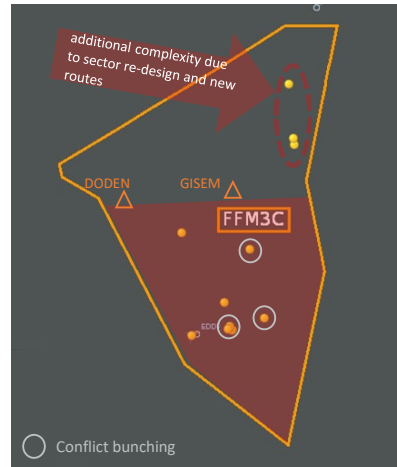
AIRTOP AIRSPACE™

DFS: New complexity hotspot due to sector re-design and traffic shift

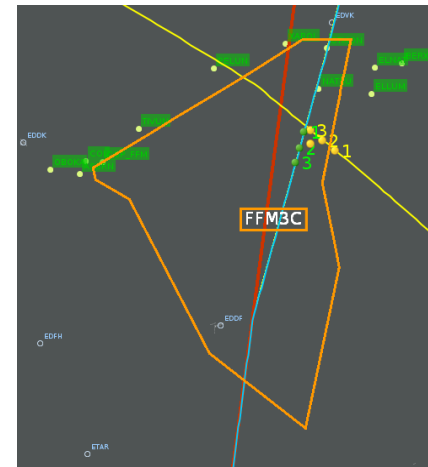
Conflict situation baseline scenario
period 0850 – 0950 UTC



Conflict situation future scenario
Period 0850 – 0950 UTC

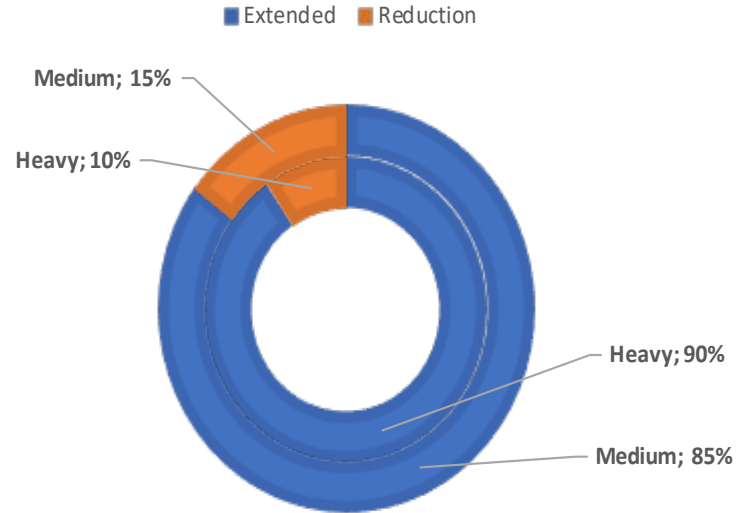
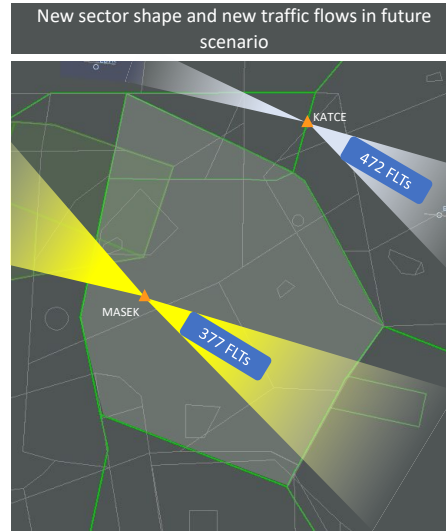
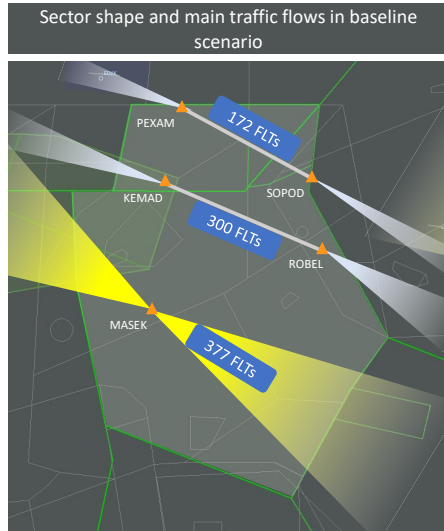


Reason for new conflict hotspot



A re-design of sector FFM3C leads to shift of traffic flows. As depicted in the second picture, the formerly red traffic flow is now shifted easterly. This causes new conflicts with crossing yellow flow (third picture), which has been detected by means of Fast-Time Simulation.

DFS: New route assessment



Implementation of a new route via northerly waypoint KATCE reduces average hourly traffic load in new designed sector by 10 movements but increases flown distance and thus results in a higher fuel consumption.

E.g., all A380s in the traffic example would burn around 2 tons of fuel more (in total over the 3 days sample).

Use cases

FLOW MANAGEMENT



DFS Deutsche Flugsicherung




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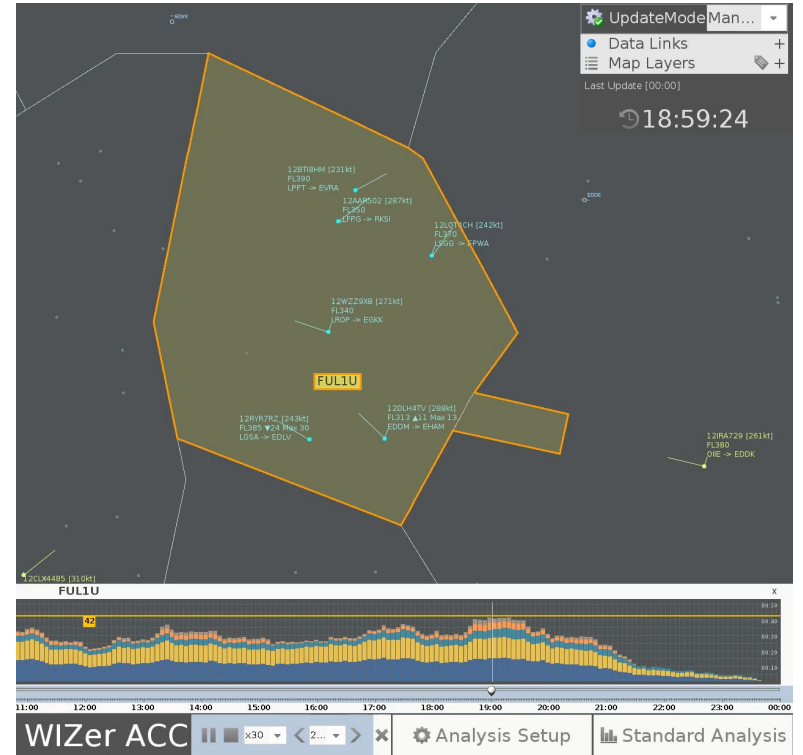
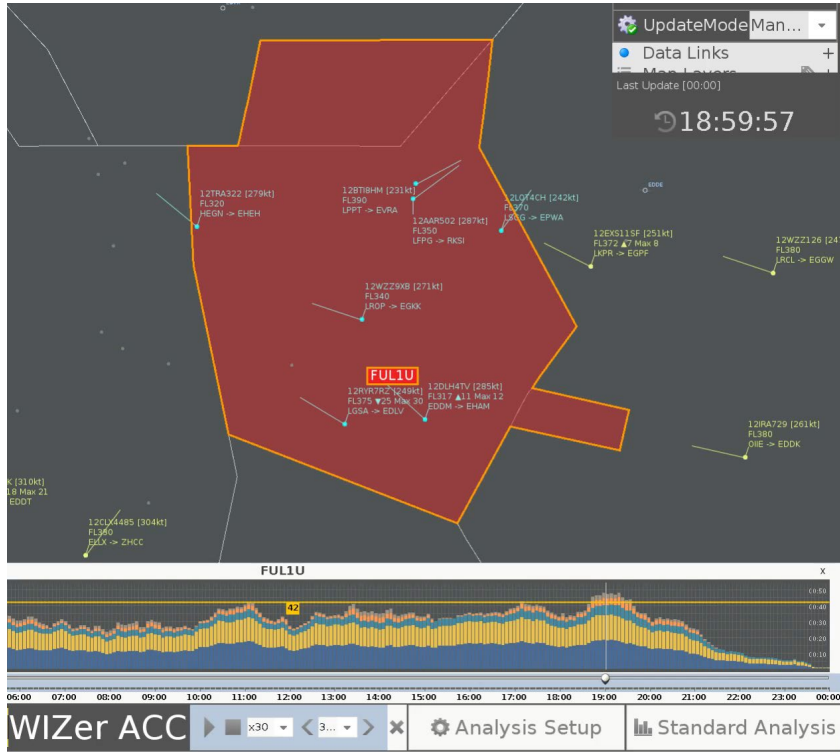
DFS: Using WIZer for PreOPS and PostOPS analysis

WIZer ACC is used as Flow Management tool in control centers. Thus, an airspace simulation model for all sectors of a center is permanently available. This can be used as baseline for simulation projects.

Advantages of the combination
WIZer ACC / AirTOP:

- High-resolution and validated simulation baseline
 - Continuously monitored (continuous validation)
 - Permanently available
 - Operationally validated workload model
- 
- Reliable simulation results
 - Accurate analysis and prototyping
 - Quick answers
 - Risks and costs reduction

Use case 3





THANK YOU!

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