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ADVANCED SURFACE ROUTING AND SAFETY NETS

SESAR PJ28 VLD - INTEGRATED AIRPORT OPERATIONS

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INTEGRATED AIRPORT OPERATIONS

SESAR JOINT UNDERTAKING

About me

- Aviation enthusiast and researcher
- Background in logistics and OR
- PhD thesis about emergency planning for offshore helicopter transportation
- Since 2 ½ years working in and managing aviation projects in Mathematics and Cybernetics department at SINTEF

INTEGRATED AIRPORT OPERATIONS

SESAR JOINT UNDERTAKING

Showing SESAR solutions in an operational environment and easing their industrial deployment

Automated Assistance to Controller for Surface Movement Planning and Routing

DMAN synchronised with Predeparture sequencing

Airport Safety Nets

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SESAR JOINT UNDERTAKING

DLR

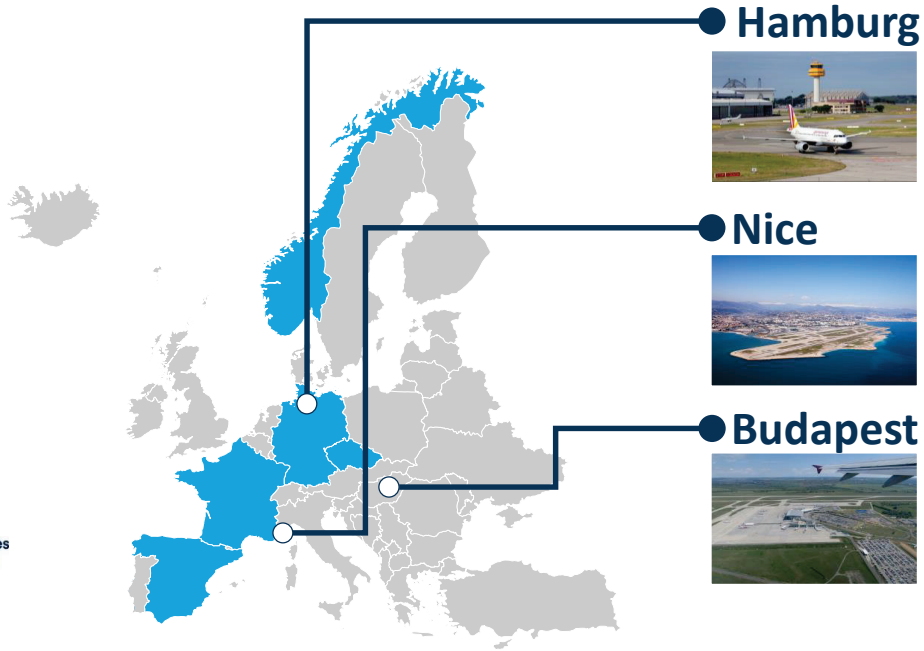
dgac DSNA

SINTEF

Honeywell

indra

Air Navigation Services of the Czech Republic



Hamburg

Nice

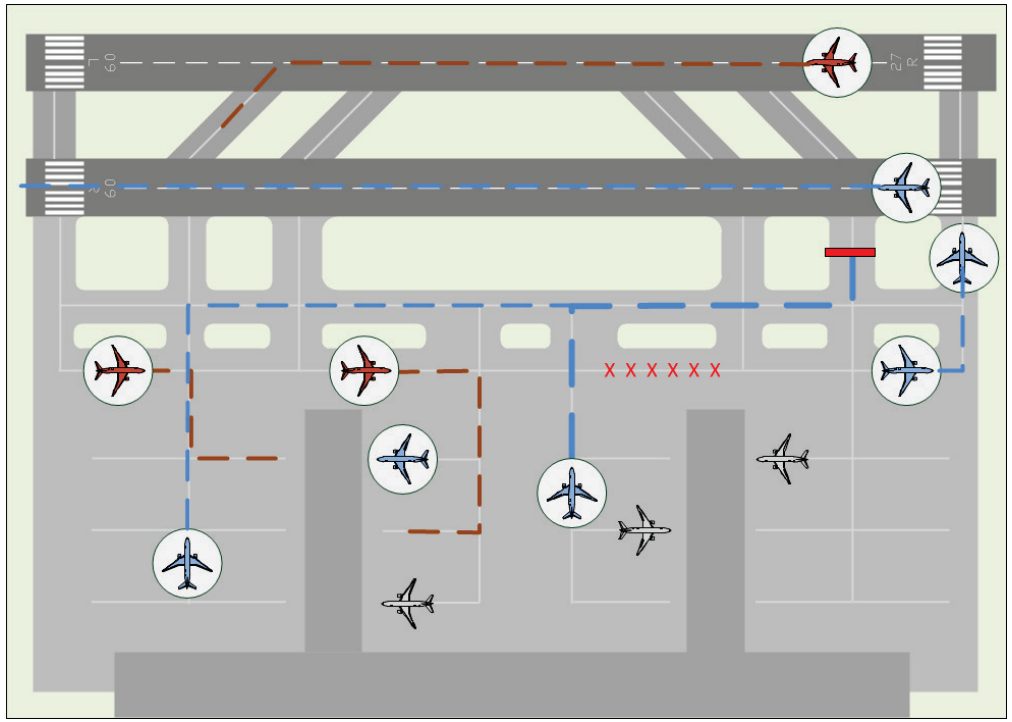
Budapest

Automated Assistance to Controller for Surface Movement Planning and Routing

#22

- Improved predictability
- Enhanced safety
- Increased capacity
- Improved taxi times resulting in reduced fuel burn

- Generate routes for each aircraft
- Use flight plan data and actual traffic situation
- Route display and controller interaction
- Calculate taxi Times



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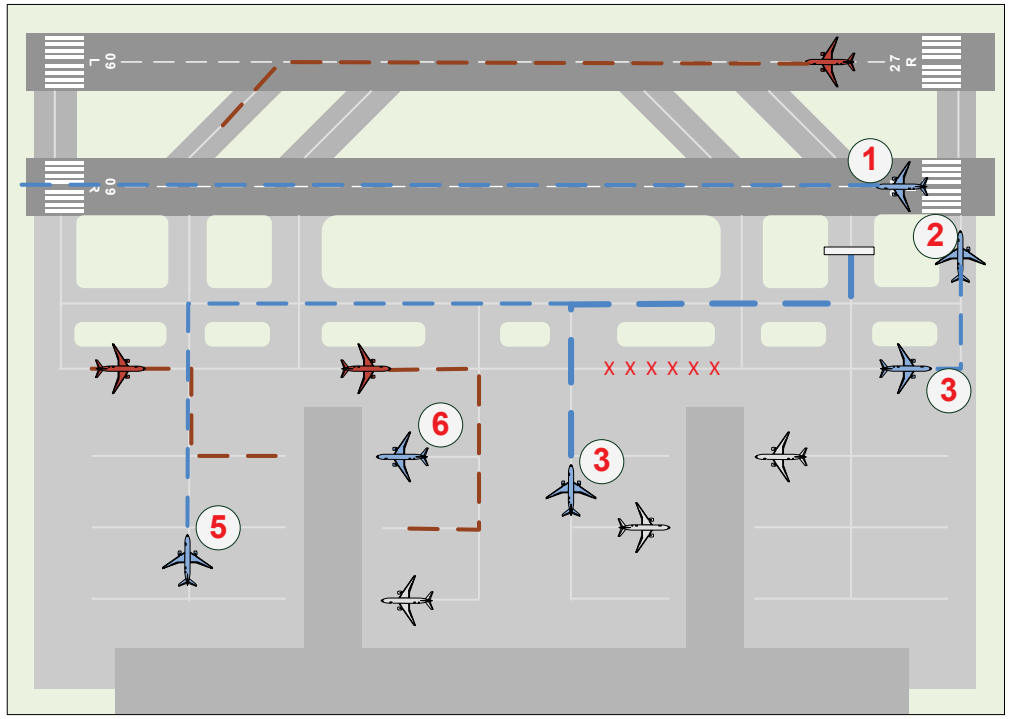
Pre-Departure Sequencing supported by Route Planning

#53

- Reduced waiting time at the runway holding point
- Increased accuracy of taxi time-out predication and hence take-off time predictability
- Provision of a more stable pre-departure sequence

- Optimize traffic flows to the runway
- Use calculated taxi times instead of static data
- Provide a more stable sequence at the runway



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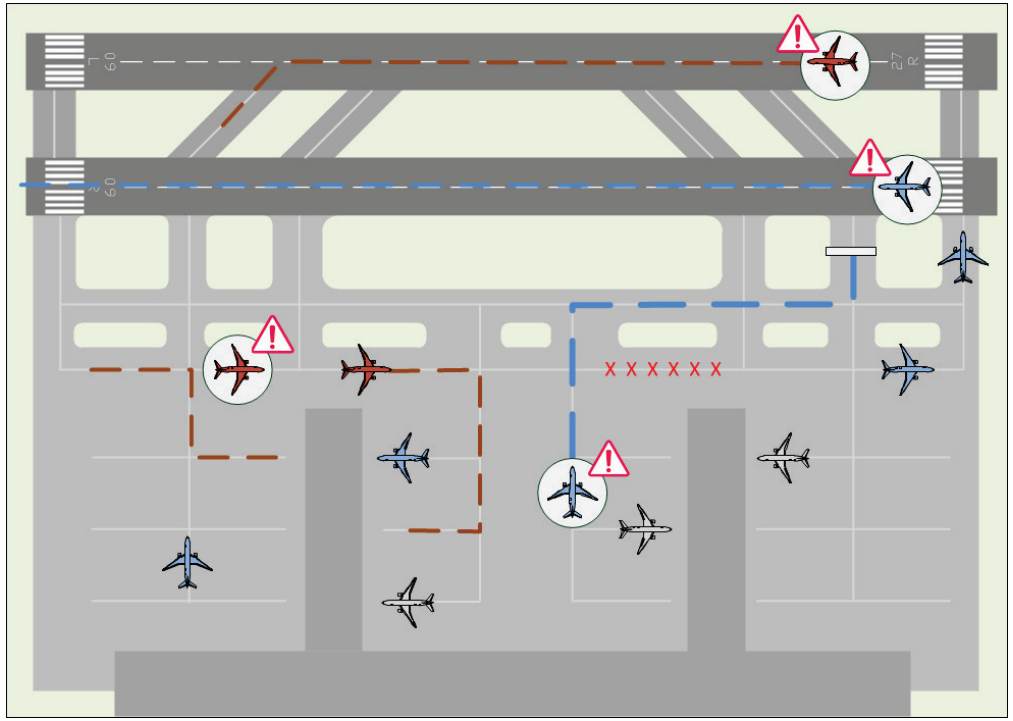
Airport Safety Nets for controllers

#02

- Increased situational awareness
- Improved safety in airport operations

- Additional Safety Nets based on electronically available instructions
- Available routes are used for deviation detection
- Avoid conflicting clearances before issued



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Why do we need the digital route?

Solution #02 Airport safety nets

Solution #23 D-TAXI for the CPDLC application

Solution #26 Manual taxi routing function

Solution #47 Guidance assistance through AGL

Solution #53 Pre-departure sequencing supported by route planning

AUDIO

AIRSPACE USER SUPPORTING DEMONSTRATIONS OF INTEGRATED AIRPORT OPERATIONS

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Solution #22
Automated Assistance to Controller
for Surface Movement Planning and Routing

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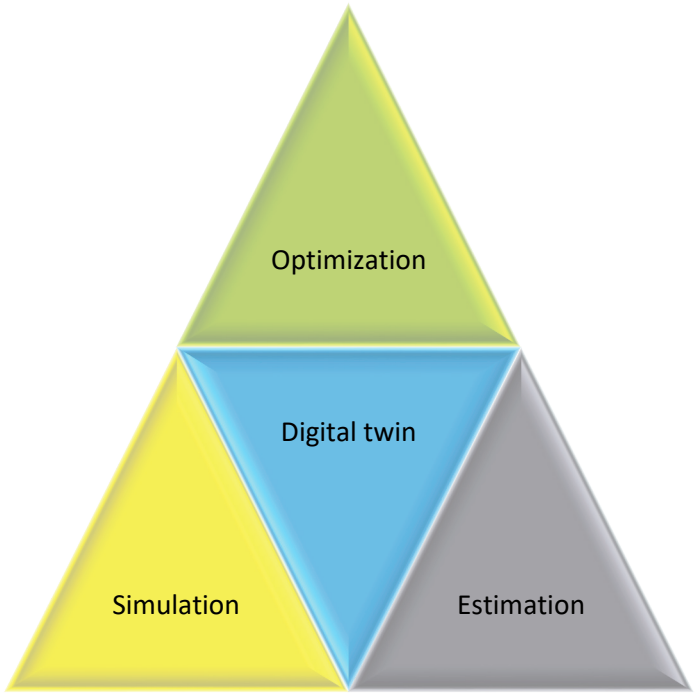
SINTEF.Aviation Library

Library for quick development of ATC solutions

Service oriented design to easily integrate into existing systems



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Facing Reality in a SESAR VLD

Some learnings

- Real life is messy and inconsistent
- Preparing and pre-processing data is an important task
- This is true for both static (airport layout) and dynamic (flight plans, positional measurements) data
- The "optimal route" is a quite complex topic
- Support decisions, but give flexibility for deviating from the proposed solutions

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AUDIO

Airspace User supporting Demonstrations of Integrated Airport Operations

- Project partners SINTEF, DLR, Lufthansa, ARTTIC
- Provide information to cockpit via Electronic Flight Bag (EFB) System
- Demonstrate the viability of an innovative advanced and connected moving map application
- Provide local airport data, such as on-ground traffic situation and planned taxi route

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Teknologi for et bedre samfunn

INTEGRATED AIRPORT OPERATIONS

SESAR JOINT UNDERTAKING

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