SESAR: From innovation to deployment

Tuesday 6/03
FABEC OPS Theatre
11:00 - 12:45

11:00 – 11:15	Welcome and introductory remarks	Maurizio Castelletti, European Commission
11:15 – 11:45	Update on SESAR	Florian Guillermet, SESAR JU Nicolas Warinsko, SESAR DM
11:45 – 12:05	SESAR success stories	Benoit Fonck, SESAR JU Mariagrazia La Piscopia, SESAR DM
12:05 – 12:20	The future of SES and SESAR	Maurizio Castelletti, European Commission
12:20	Q&A	Florian Guillermet, SESAR JU Nicolas Warinsko, SESAR DM
12:45	**END OF SESSION**	

GENERAL UPDATE: SESAR JOINT UNDERTAKING

Florian Guillermet

SESAR Joint Undertaking

27 February 2018

Founding Members

EUROPEAN UNION EUROCONTROL

Performance & KPIs

BENEFITS

SESAR offers benefits in several key areas:

Digitalisation

- Remote tower & virtual tech rollout,
- Improved info exchange & cross-border collaboration,
- Integration of all air vehicles (including drones) into Europe's airspace;

Decarbonisation

- Greener flight routes,
- 250-500 kg fuel savings per flight & 10 kg per passenger;

Investment

- EUR 1.6bn in R&D through SESAR 2020,
- EUR 3.8bn for EU-wide deployment solutions (2015-2024) generating EUR 12.1bn in performance gains;

People

- Shorter travel times,
- Better mobility & connectivity,
- Less noise & congestion round airports,
- Consumer savings,
- 3-4 times better safety;

Decarbonisation
SESAR Solutions – decarbonised by design

Environmental performance of SESAR Solutions
Today: -2,4% fuel consumption and emissions per flight
Tomorrow: -10% fuel consumption and emissions per flight

Ground
Ex: **Integrated departure management** = **10%** reduction of taxi time, **4,000 tonnes** of fuel savings annually at Paris Charles de Gaulle

En-route
Ex: **Free route** = **45,000 tonnes** of fuel and **150,000 tonnes** of $C0_2$ annually

Approach & landing
Ex: **Extended arrival management** = **EUR 2.9 million** in fuel savings and a reduction of over **4,700 tonnes** of $C0_2$annually

Automated and Connected Mobility

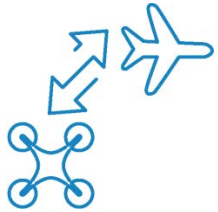
SESAR 2020: 60+ projects underway

Exploratory research, industrial research, demonstrations

Virtual technologies

Mobile, terrestrial & satellite-based communications

Digital & automated tools

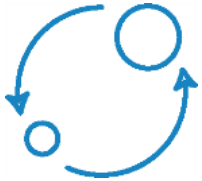


Higher levels of autonomy & connectivity

Video, synthetic & enhanced sensor tech

Big data analytics & open source data usage

System modularity



System flexibility

Automated and Connected Mobility

Augmented tower control

- A set of goggles with 3D matrix-like displays overlaid on the actual “out-of-the-window” view
- Enable tower controllers to manage traffic in low-visibility conditions
- Increases resilience at airports

Cloud and virtualised service provision

- Decouples data service provision with physical infrastructure
- Rationalises infrastructure
- Provides contingency in case of system failure

Smart airport operations

- “APOC”, a real-time monitoring & decision-making support system
- Links airside and landside processes
- Delivers smoother passenger experience & greater flight predictability

Call to establish U-space demonstrators across Europe launched in close coordination with EASA, with support from INEA to leverage CEF funds

- Main objective is to comprehensively prepare and de-risk a **rapid deployment of U-space** all the way to **urban areas**
- Projects establishing a connection with the **EU Smart Cities** initiative are particularly encouraged
- **5 and 10** demonstration sites expected across different EU Member States
- Demonstrations to be completed in **2019**

Automated and Connected Mobility

2017

U-space blueprint delivered
9 U-space projects launched

U-space concept definition
Higher level of automation
Ground based technology
Datalink
Drone information management
Security & Cyber-resilience
Aircraft systems

U-space

Demonstrating U-space
- Large-scale demos (10 M€)
- Geo-fencing project

2018

Internationalisation

Gender - Women in aviation

- Signature of Women in Transport Declaration
- Organisation of dedicated panel at World ATM Congress, 6 March 2018
- Documenting initiatives by SESAR member on gender equality

Women in aviation

World ATM Congress 2018

6-8 March 2018

Delivering Solutions

Benoit Fonck, SESAR JU

07 March 2018

World ATM Congress

Founding Members

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Develop & Deploy

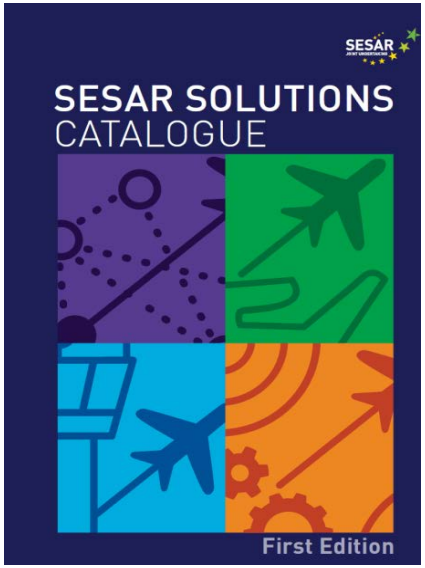
"Technology is like a fish. The longer it stays on the shelf, the less desirable it becomes"

André Heller (Austrian author)

Exploratory & Applied Oriented Research
Industrial Research & Validation
Demonstration Activities
SESAR Solutions Deployment

SESAR 1 achievements

63 tech solutions delivered



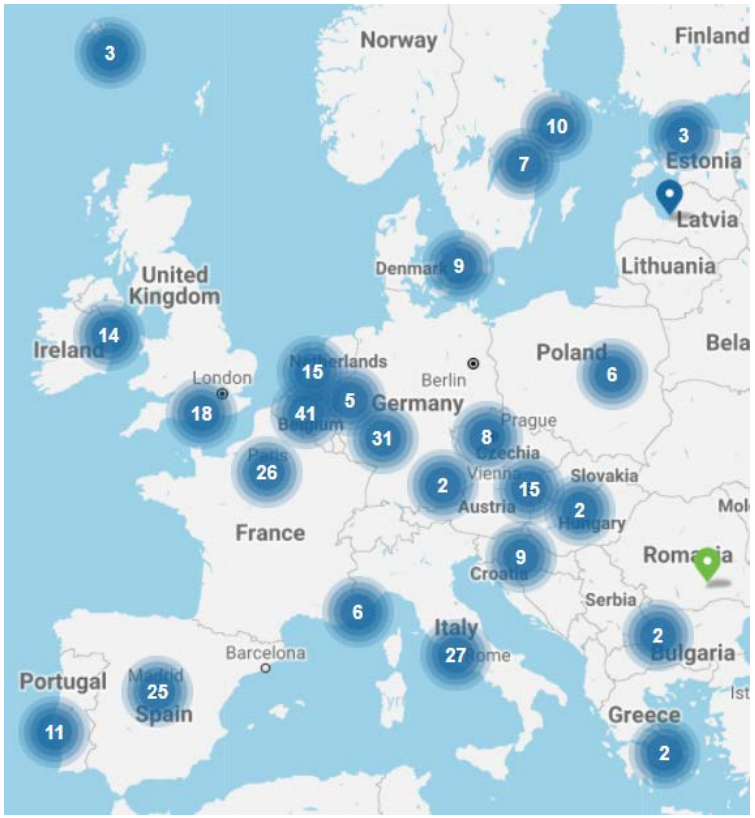
+11% Airport capacity

-39% flight variance

-5,3% costs

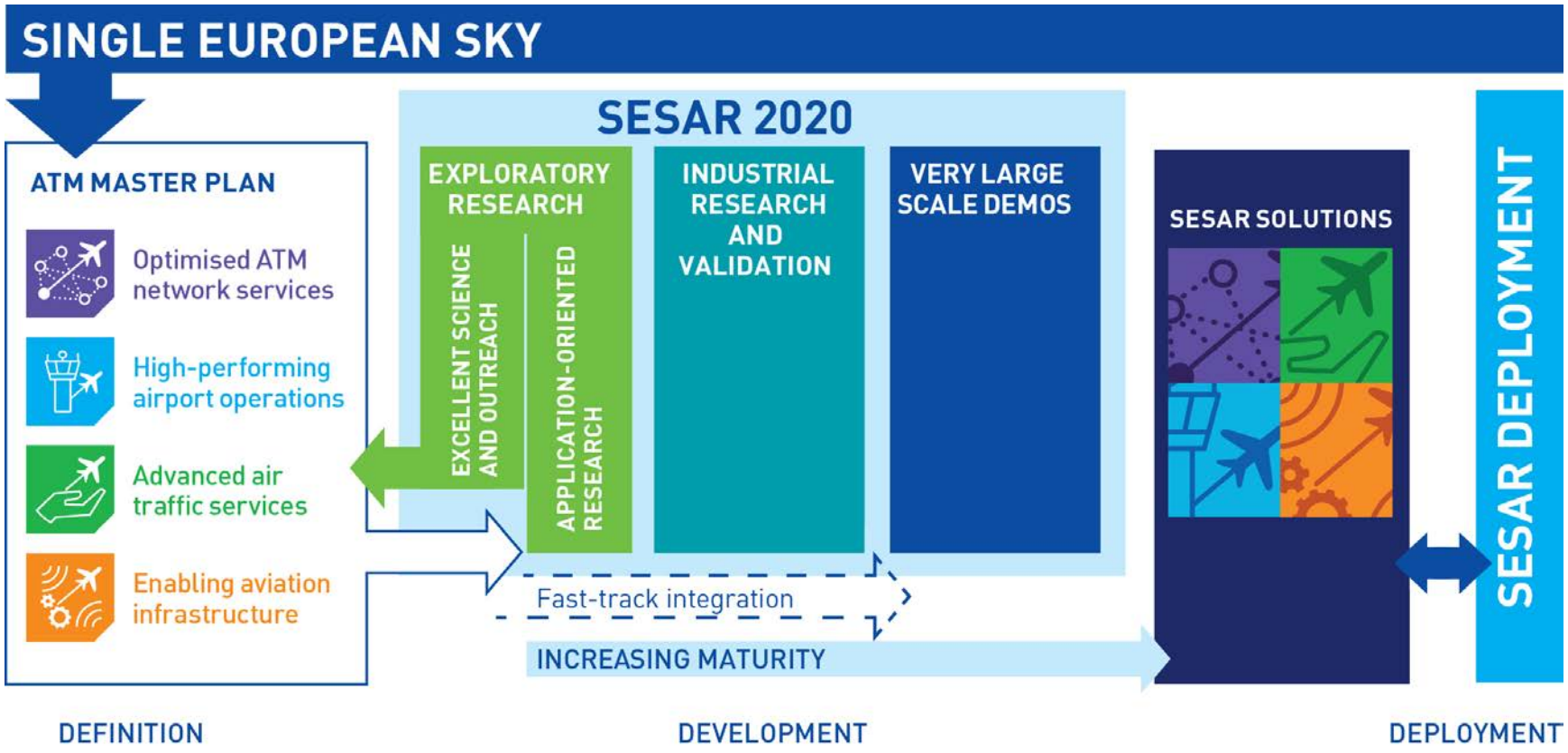
-2,4% fuel per flight

Solution deployment activities



60% synchronised deployment
(Pilot Common Project & Common Project 2)
20% in local deployment

SESAR 2020 Programme...



Exploratory Research : 45 Projects (9 RPAS) – 38,6 M€

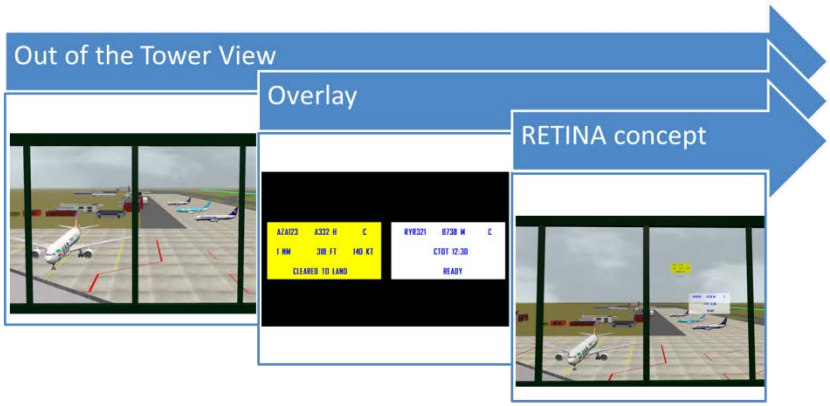
Industrial Research : 20 projects – 208,8 M€

VLD : 13 projects – 54,9 M€

Ongoing calls: U-Space & Geo-fencing – 10,5 M€

Towards Digitalisation

- A set of goggles with 3D matrix-like displays overlaid on the actual “out-of-the-window” view
- Enable tower controllers to manage traffic in low-visibility conditions
- Increases resilience at airports in particular in low visibility conditions



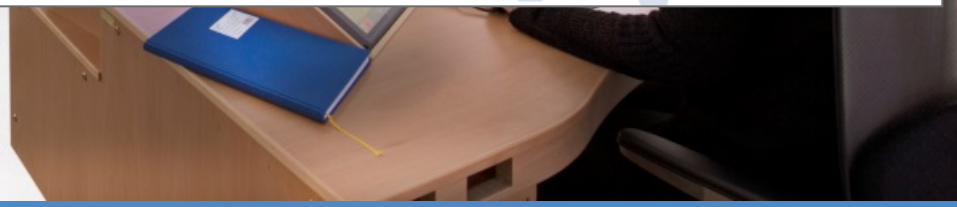
Towards Safety – Runway Status Lights

Towards Virtualisation – Remote Tower

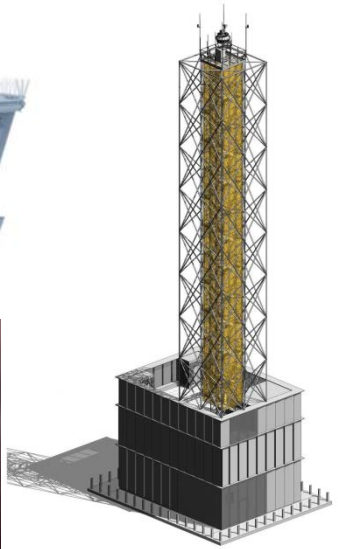
Angelholm airport controlled from Malmö (100 km out)

+50 Live Trials

Example of local implementation: Remote Tower centres

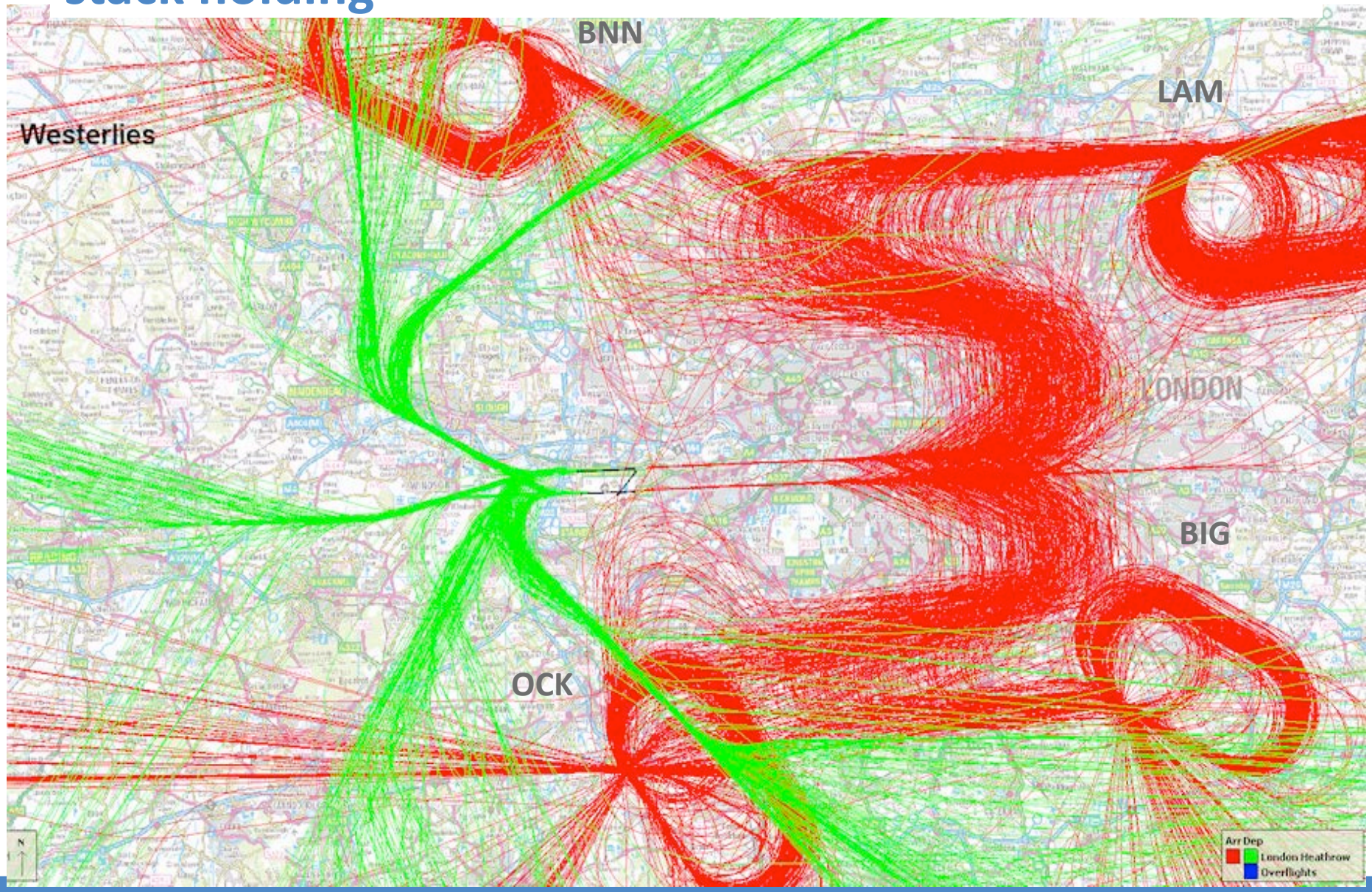


Remote Tower Demonstrator Swanwick Airport

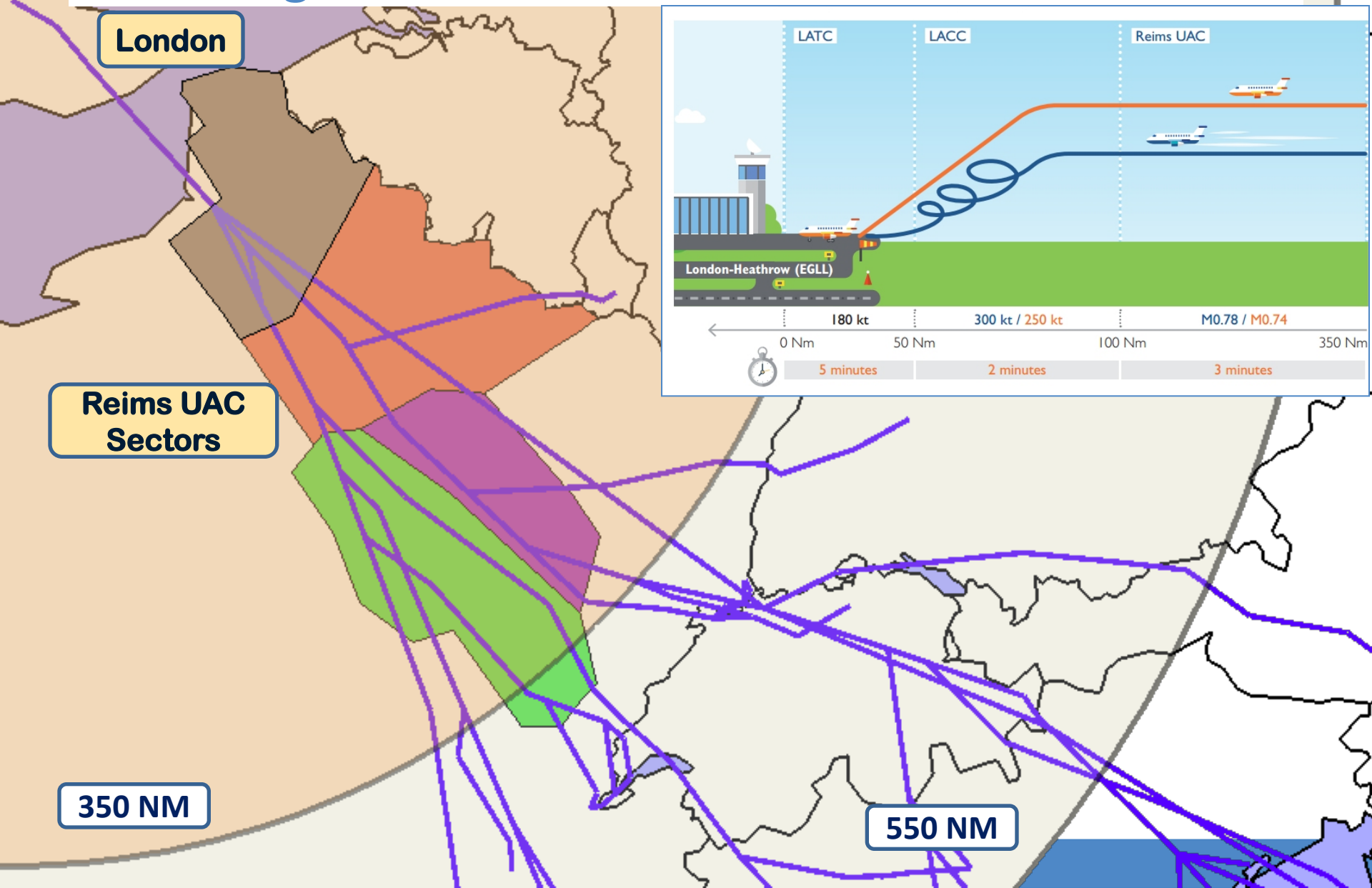


Example of local implementation: Remote Tower centres

Towards Greener Operations : the problem – stack holding



Towards Greener Operations : the solution – Extending the Horizon into Reims UAC



Delivering Solutions

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