



Partnering
for excellence
in global
aviation



World ATM Congress 2017

Operated by CANSO in partnership with ATCA

3/17/2017

Cooperative traffic management

Moderated by Peter Alty, SESAR JU





Cooperative Traffic Management The **Airport** view

Alison Bates

Head of Service Transformation and Ops Efficiency

8th March 2017





90

Airlines



Heathrow
Making every journey better



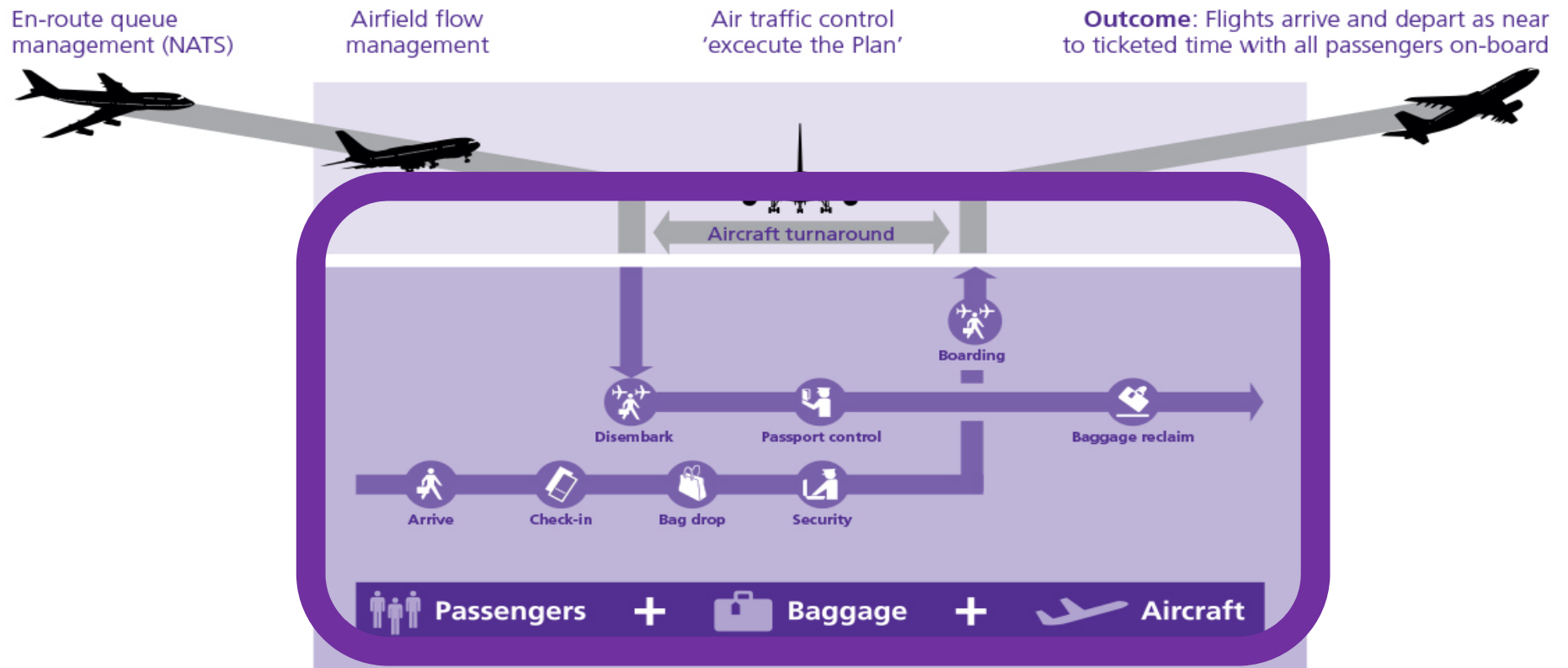
75.7million
passengers (2016)



Heathrow
Making every journey better

Our ambition is to “Operate to Plan”

To help reduce delays and improve flow



Making SESAR concepts a reality



APOC

Manage performance



MET

Integration of data



Integration of landside processes

AOP

Monitor performance



DCB

Arrive & depart to plan TTA/UDPP



Integration of de-icing processes



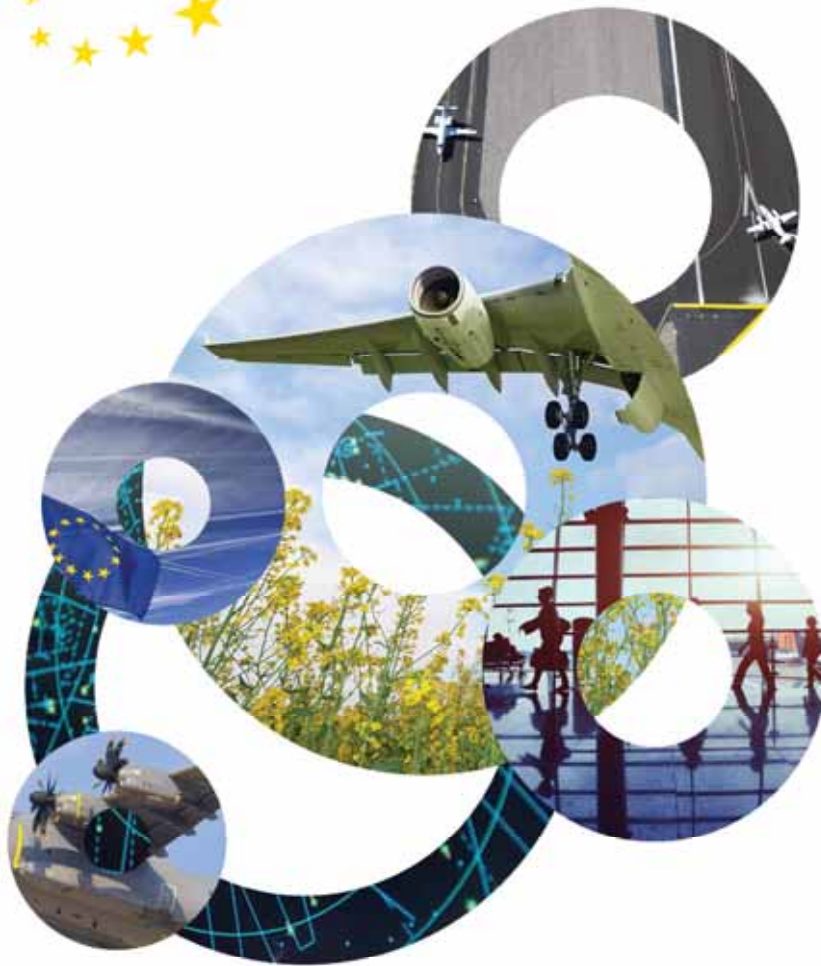


Predictability = reliability = better service



Heathrow Predictability video

<https://youtu.be/EngWHxSiJE4>



**Thank you
for your attention**

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Cooperative traffic management - Improving flight efficiency

Eric Nantier

Lufthansa Group/ SWISS



We don't just fly aircraft, We move passengers!



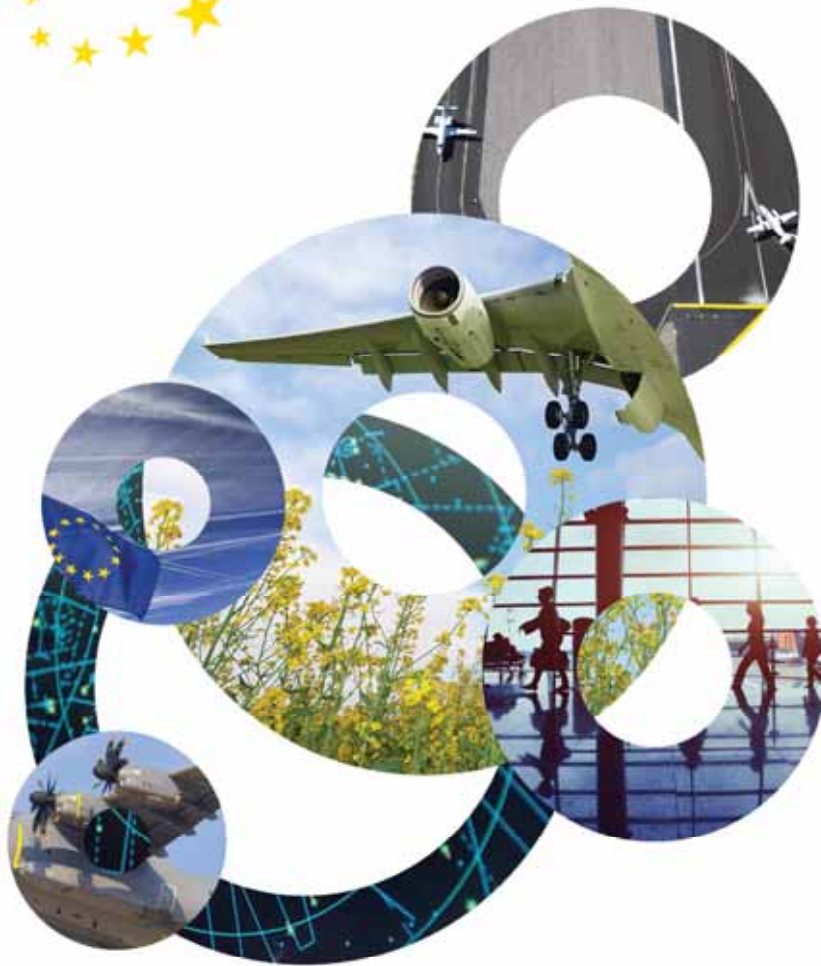
What we already have...

... and what we expect in the future

- **Target Time of Arrival (TTA) Management**
 - From CTOT to TTA enhancing predictability
- **Airlines' prioritisation (e.g. Arrival Flexibility)**
 - For ATC: 2 aircraft have the same value
For AUs: 2 aircraft have different values
 - Prioritisation process to be extended to Airline Groups
 - Implementation of UDPP/CCP* in FOCs
- **4D Trajectory**
 - AU's trajectory predictions (EFPL) to be shared and used by all stakeholders (ACCs and NM) via SWIM to reduce number of constraints



*Collaborative Cherry Picking (CCP) : Research project with NM, SWISS, skyguide and Zurich Airport



**Thank you
for your attention**

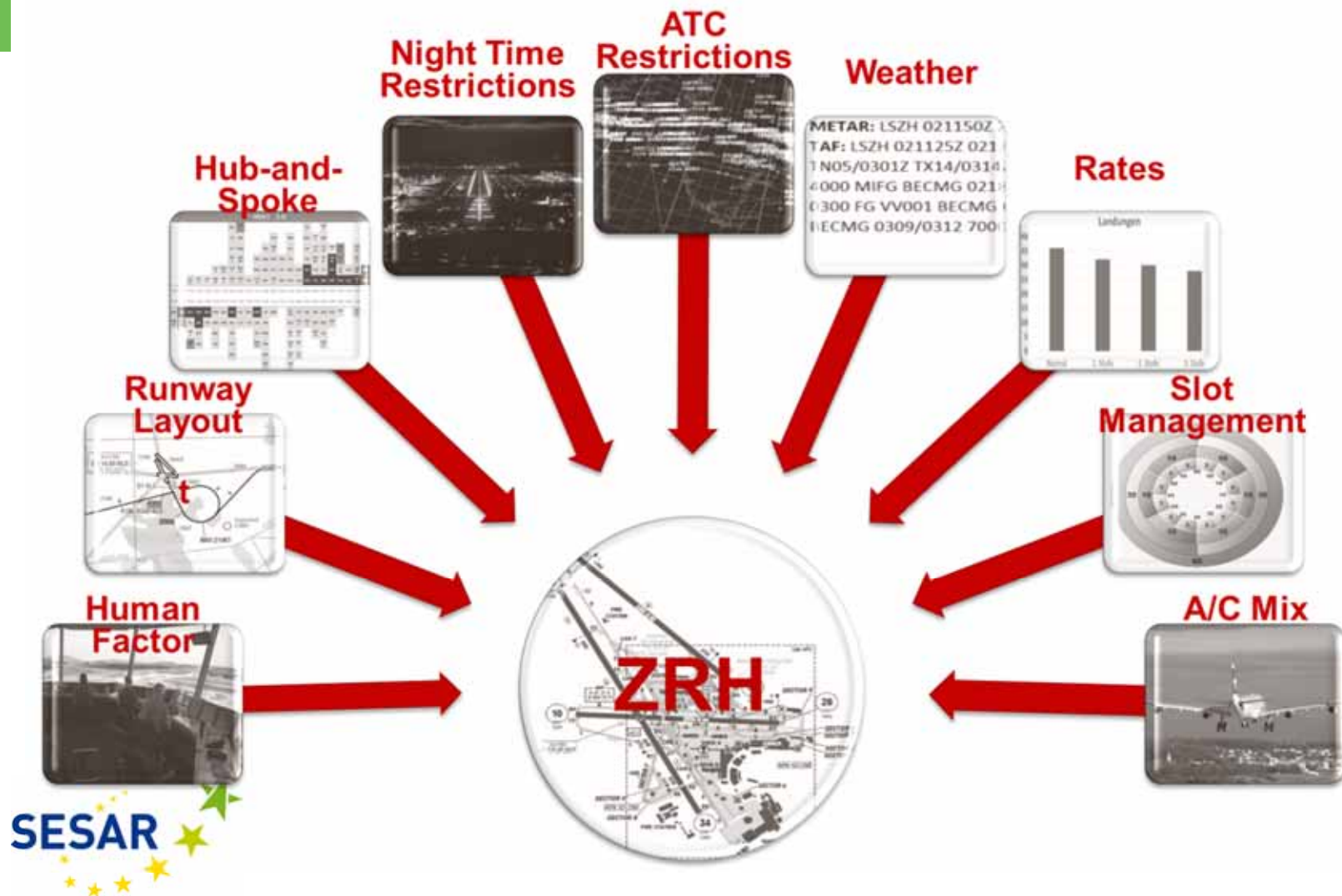
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Situation in LSZH/ZRH





Cooperative traffic management - ANSP contribution

Pascal LATRON

Skyguide – Swiss Air Navigation Service Provider

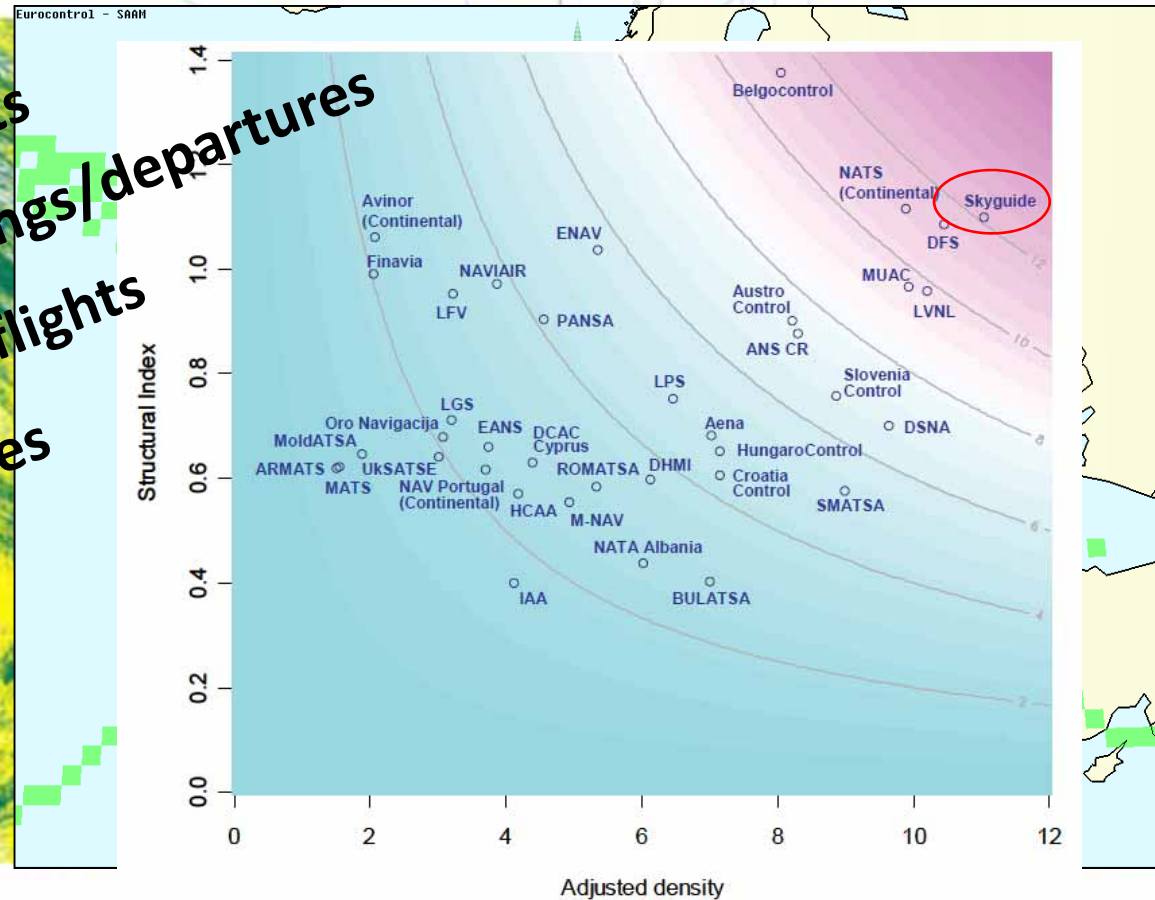
SESAR Contribution Manager



Skyguide

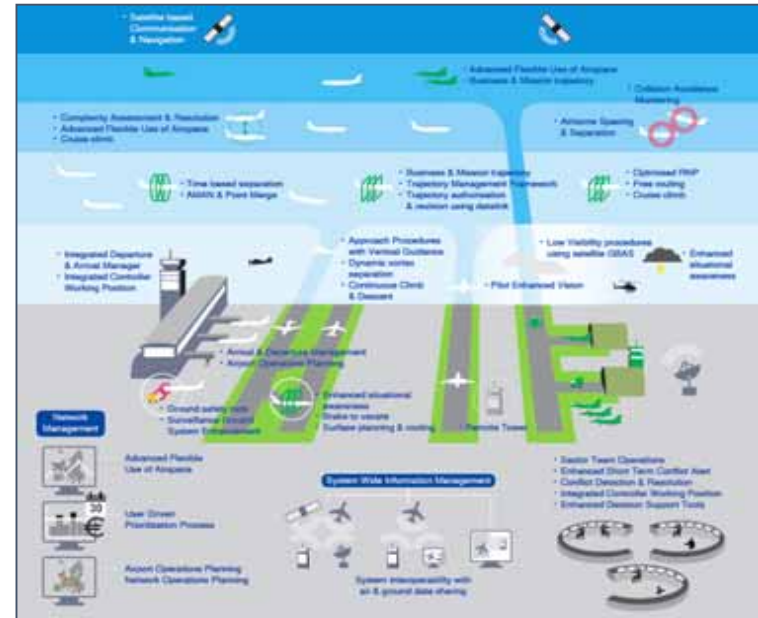


1.177 365 IFR flights
507 700 IFR landings/departures
87 250 military flights
1411 employees



Historic skyguide

- A lot of cooperation with all stakeholders



Assigning TTA to long haul

- **Objective:**

- Reduction of CO₂ and noise emissions of early-morning Zurich arrivals

- **How:**

- Assign tactical time of arrival (TTA) to long haul flights

- **To achieve:**

- Flight efficiency
- 75% decrease in the time spent in holdings
- Savings in CO₂ emissions achieved amount to 1 800 tonnes a year



Achievement



Move from CTOT to TTA – *CTOT with TTA*

- **Objective :**

- Evaluate the use of TTA instead of CTOT as DCB measures
- Evaluate the potential benefits on flight efficiency
- Evaluate or identify the impact on future technical systems
- Assess the impact of the TTA on crews and ATCO workload

- **How :**

- Assign TTA to regulated flights from selected city pairs

- **To achieve :**

- Enhance predictability (entry approach)
- Assess benefits of Target Time



Arrival flexibility

- **Objective :**
 - Enhancement of early morning arrival wave at Zurich airport
- **How :**
 - Aircraft operator could exchange Target Times between its aircrafts at arrival for more flexibility in operations (“AFLEX”)
- **To achieve :**
 - Benefit of Target Time for complete traffic flows, with comprehensive collaborative processes

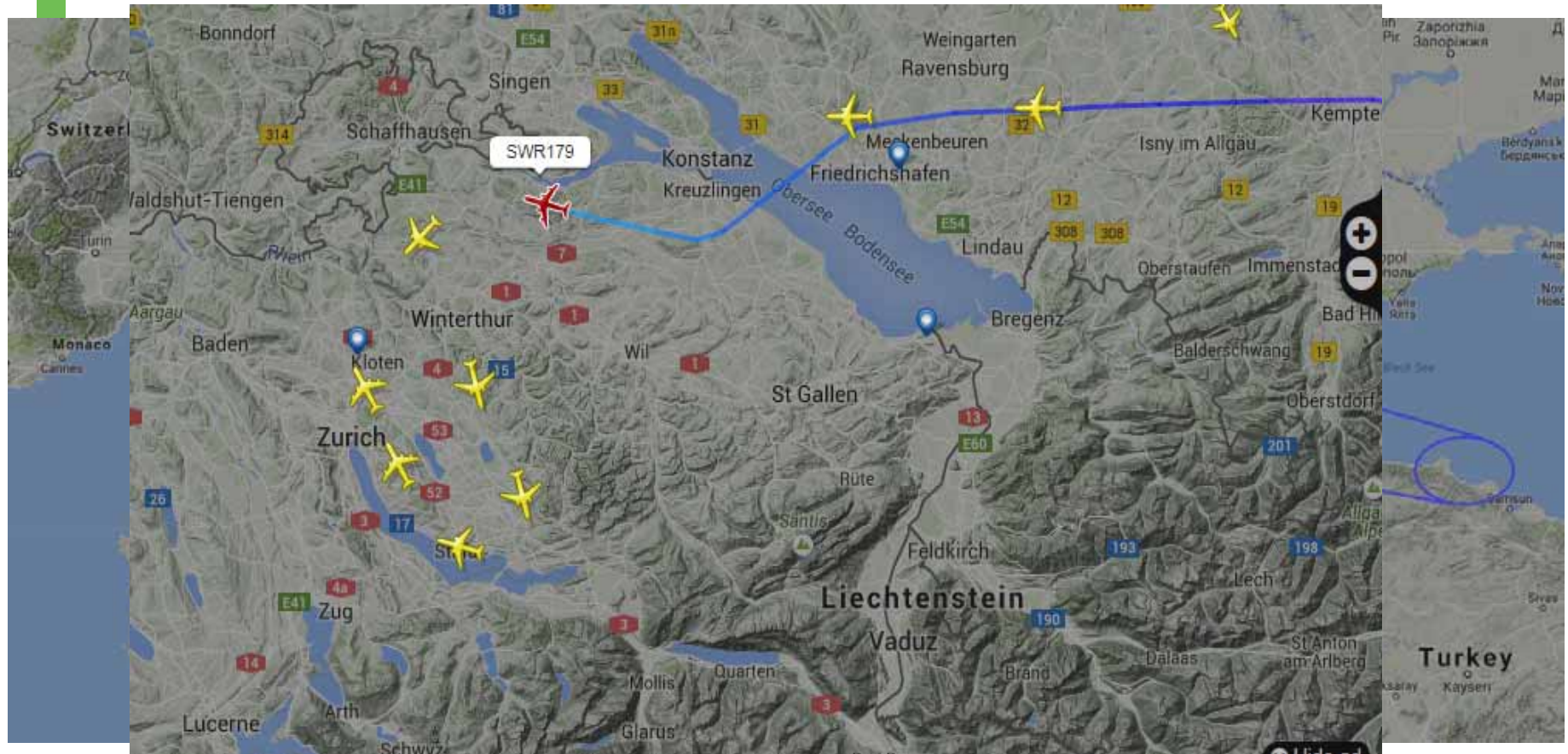


Increase involvement of airlines



But increased need to be cooperative and respond/adhere accordingly to the TTAs

Achievement



Benefits for all

- **Improvement of flight predictability**
- **Increase smooth arrivals**
 - avoid holdings/ATC delays
 - Reduce fuel consumption
 - Reduce CO₂ and noise emissions
- **Contribute to Continuous Descent Operations (CDO)**
- **Facilitate ATC**



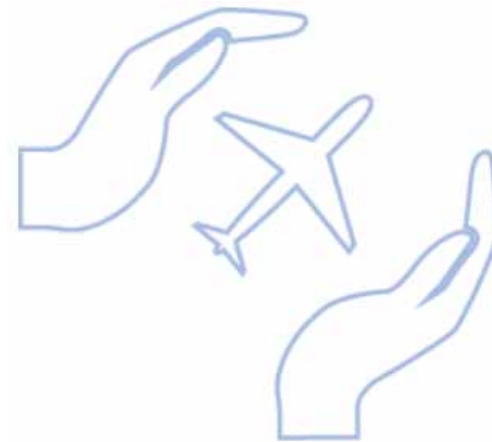
Way forward

2016 2017 2018 2019



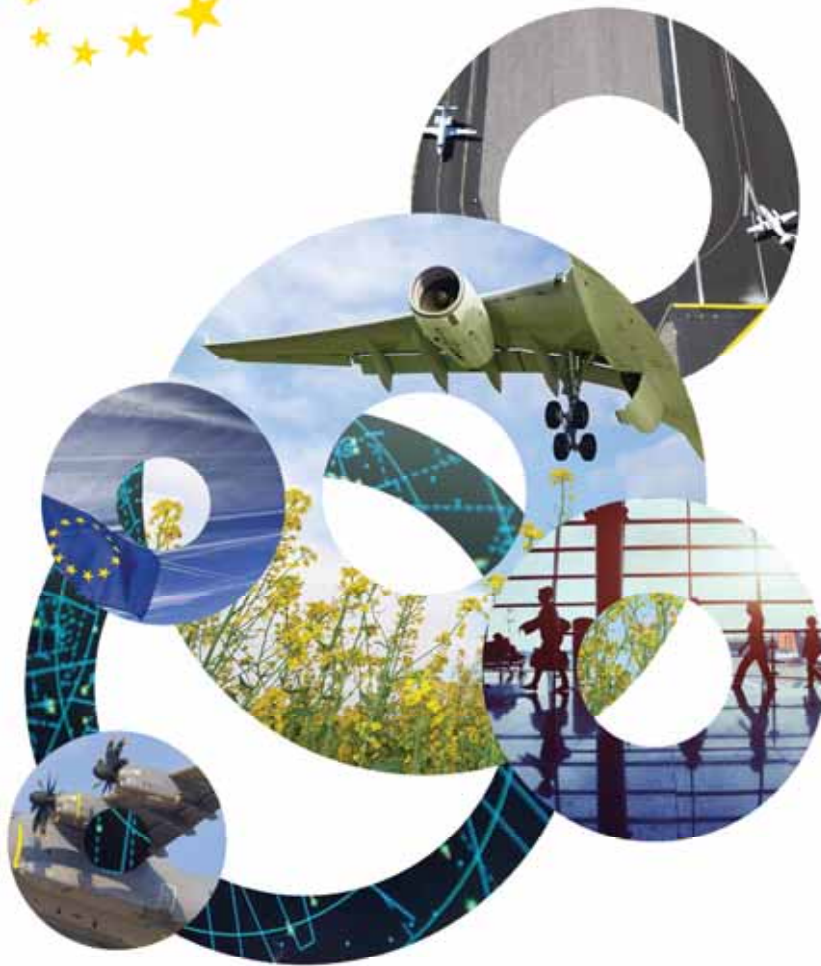
Go for Airspace User collaborative service (UDPP)

**For our customers and partners,
we embody continuous improvement
in an innovative and entrepreneurial spirit**



A concrete case of collaboration – AUs, NM, ATC





**Thank you
for your attention**

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EUROCONTROL view

Pascal HOP – Network Manager (NM)

Nadine PILON - EUROCONTROL Experimental
Centre (EEC)



EUROCONTROL/NM view

- **Brings all pieces together**
 - Demonstrating collaboration between airports, flow managers, airspace users and NM to address network constraints today
 - Developing future processes for holistic collaboration between airports, flow managers, airspace users and NM based on margins and tolerance windows
- **Consolidates ATM Network performance**



Focus on Airspace Users flight prioritisation with UDPP

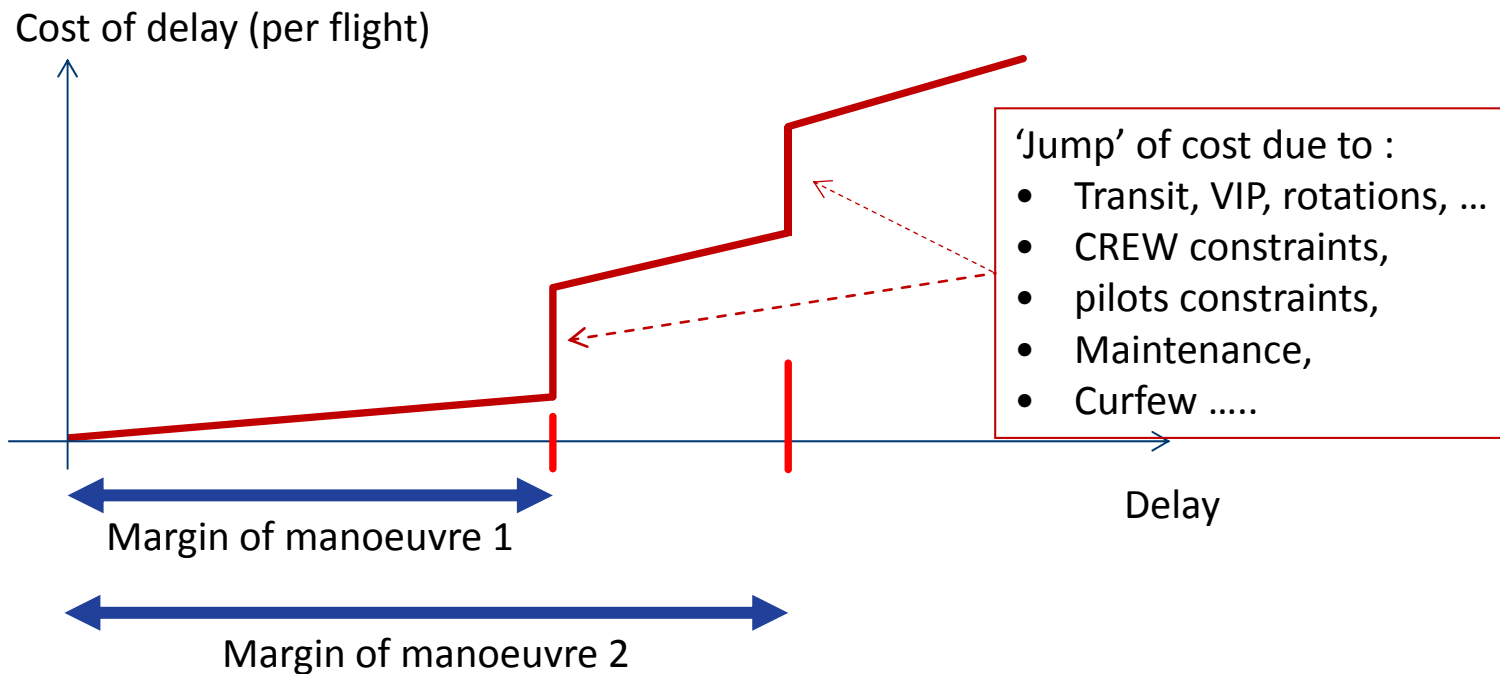
In order to maintain safety, the European Network ATFM function at airports or en-route impose delays or other measures on certain flights before departure

→ limitations on AUs operations

- For ATFM, all flights are equal
- For AUs, every flight is unique:
 - Passenger experience
 - Airport/crew/aircraft limitations
 - Schedule integrity



Costs of delay drive prioritisation by airspace users



No way to act on delay -> Act on cost of the delay

User-driven prioritisation process (UDPP)



UDPP brings AUs the flexibility they need to reduce their cost of delay

Validated in SESAR1 for current operations:

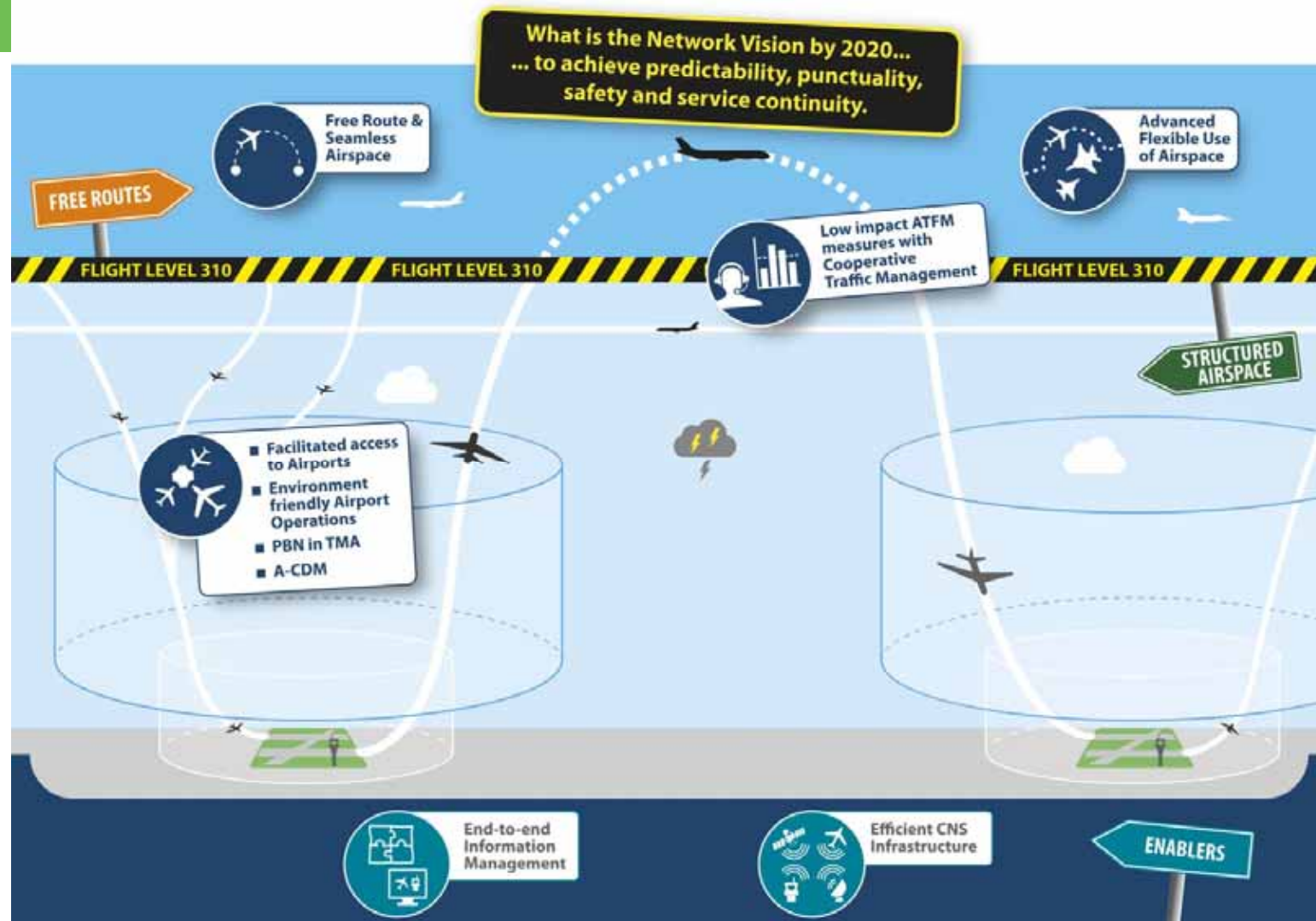
- Enhanced ATFM slot-swapping: **deployed by NM in 2017**:
 - EUR 4900– the average cost saved per single ATFM slot swap
 - EUR 500 M estimated over 20 years (SESAR CBA)
- UDPP departure: **DFlex deployed at Paris-Charles de Gaulle since 2015**

New innovative prioritisation methods elaborated with AUs allow:

- AUs' **pro-active repositioning for important flights** involved in any Capacity Constrained Situation (Departure – en-route – arrival),
- share **AUs' input in the Network CDM**, in a future Trajectory-Based Operations environment.

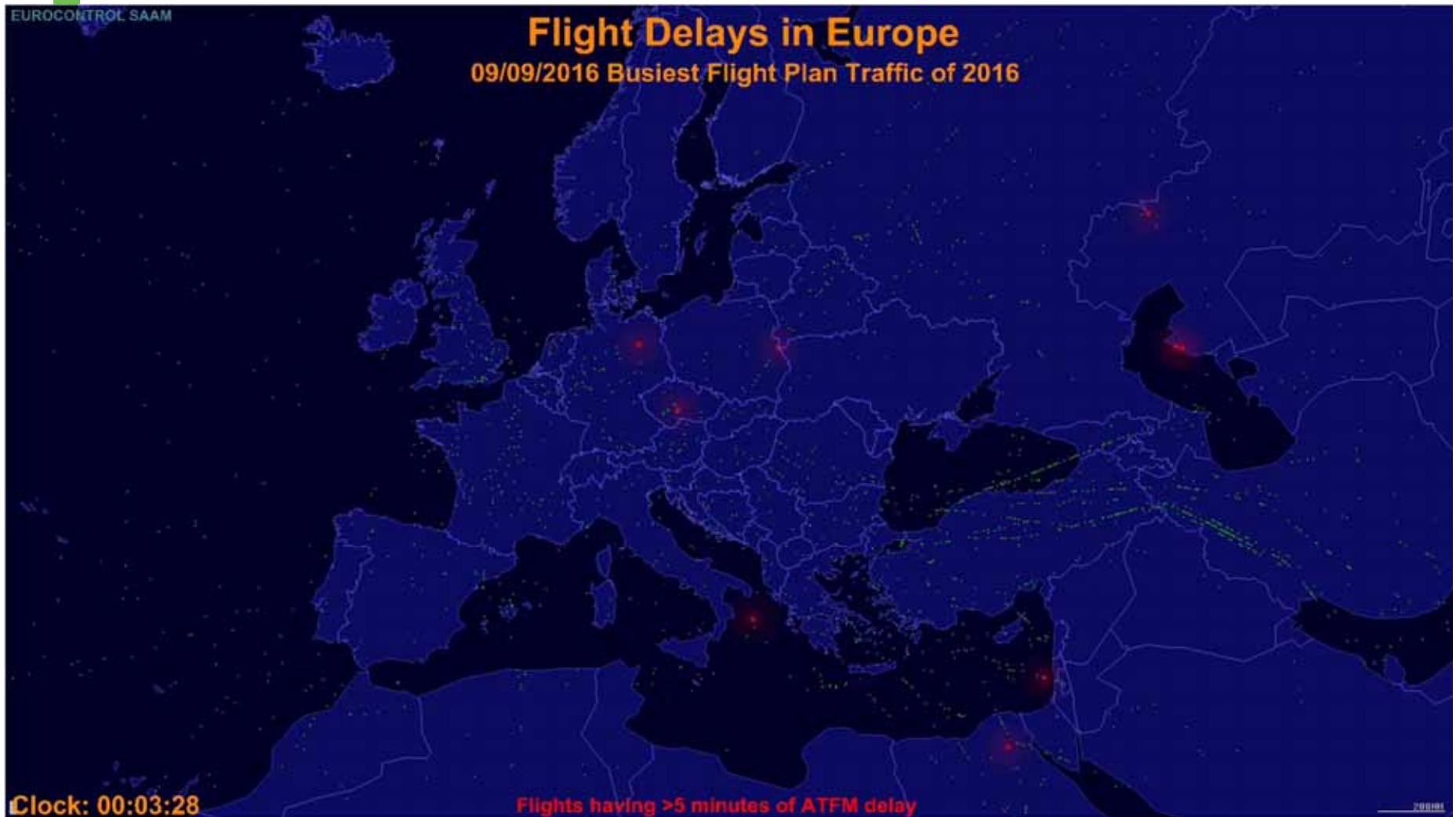


Network Strategy Plan



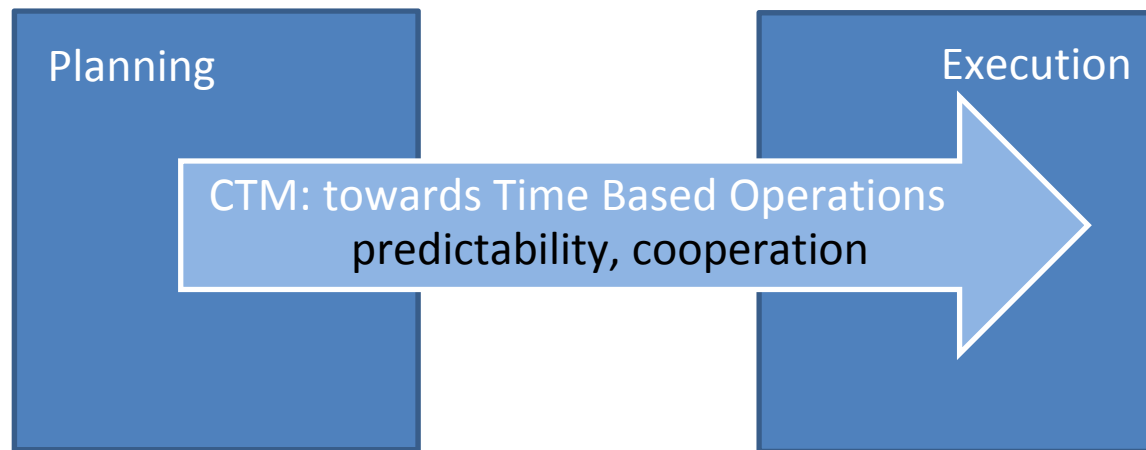
Reduce impact of ATFCM delay

Why?



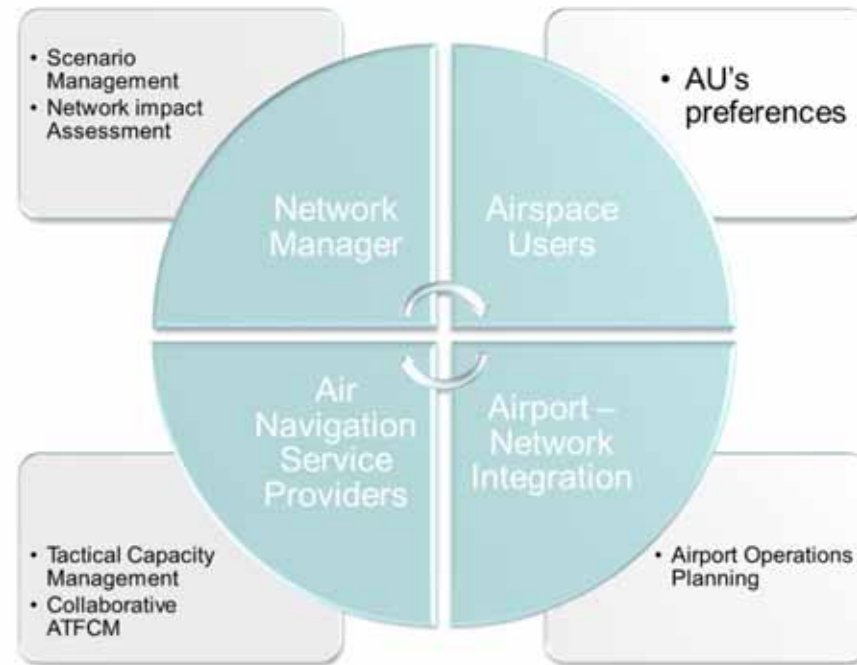
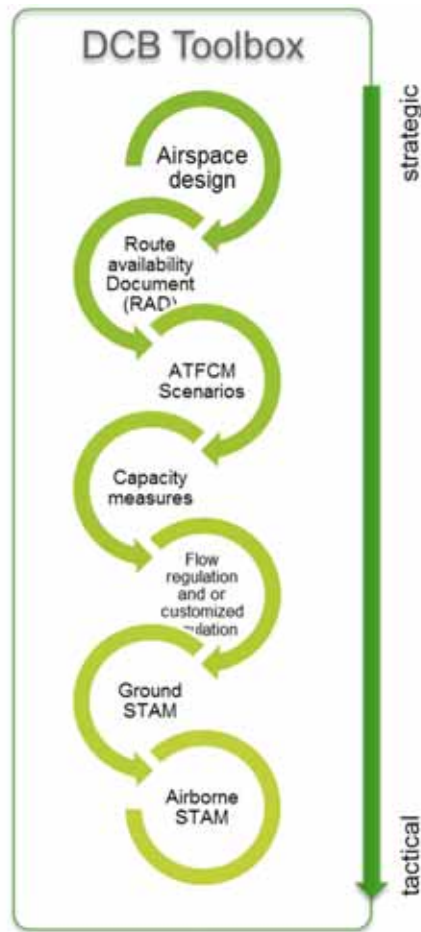
Cooperative traffic management (NM project)

- Efficiently ***exploit*** available network capacity
- **Introduction of Target Times Operations for ATFCM***
purposes



* For ATFCM purposes means better managed delivery of traffic into congested sectors (could also be arrival sectors)

Cooperative traffic management

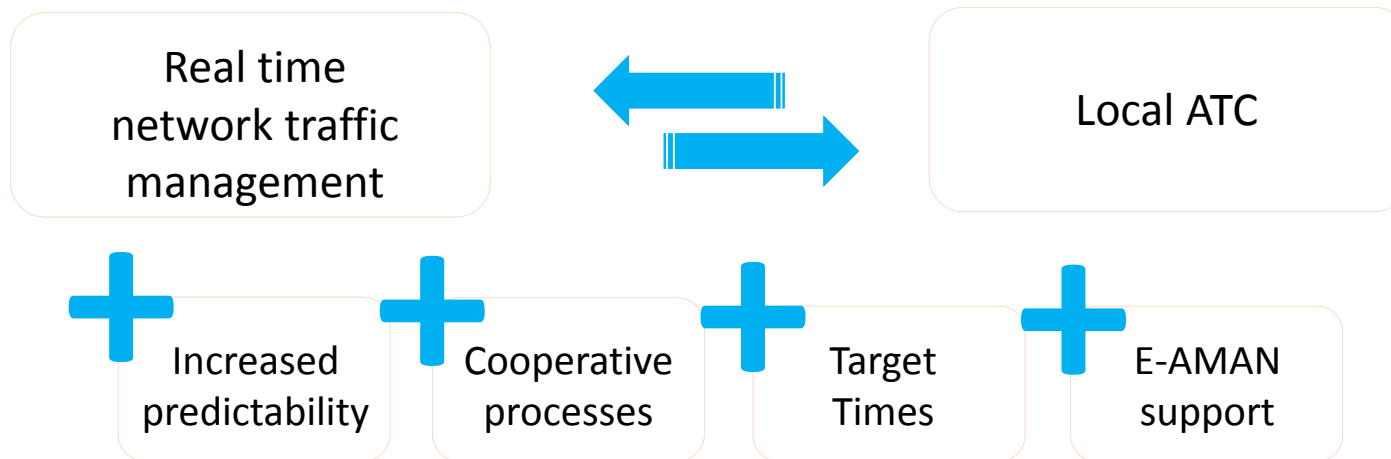


New ATFCM cooperative processes

- addressing local and network imbalances
- interface with executive phase
- all operational actors involved

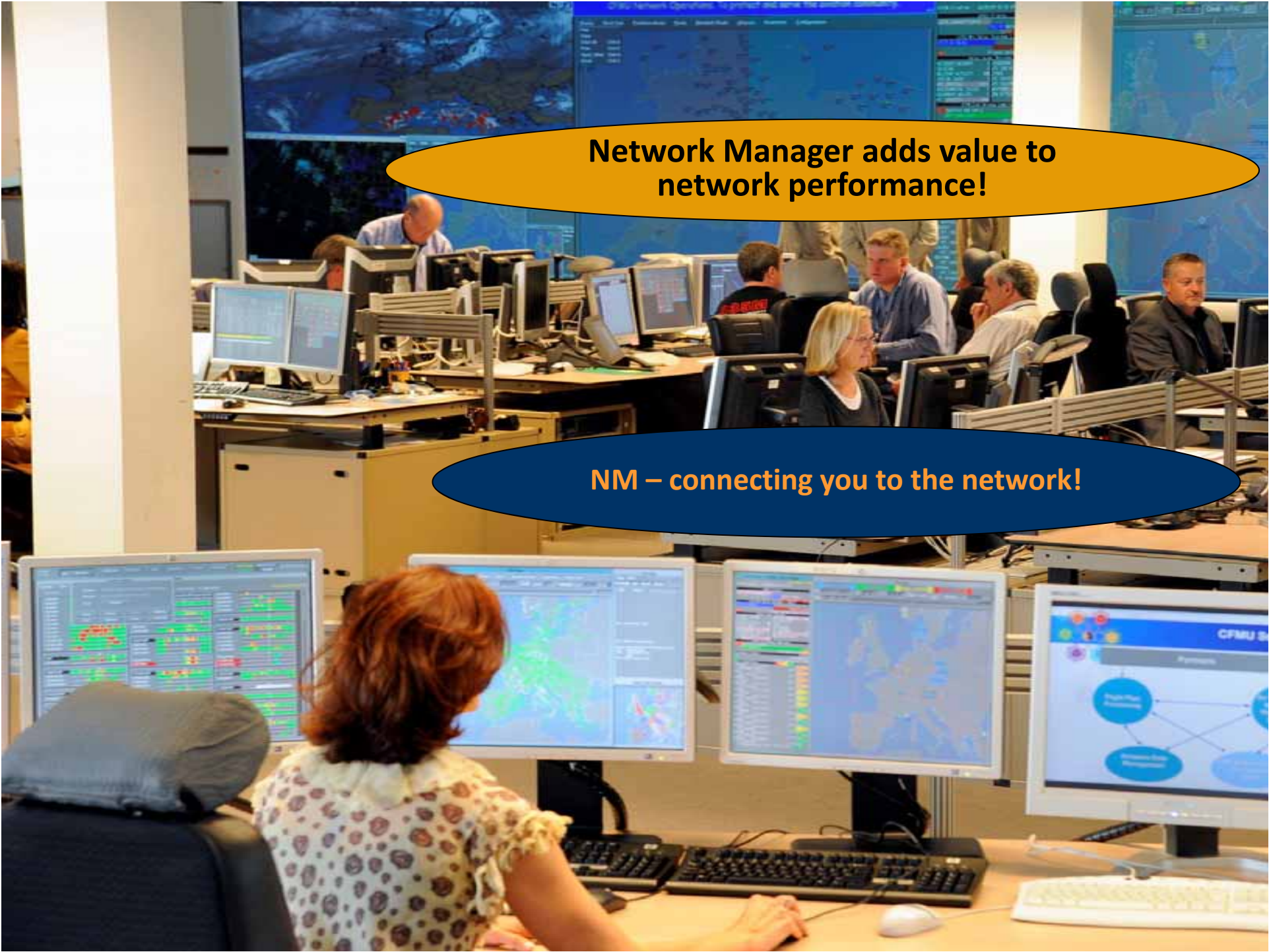
Cooperative traffic management

What changes?



- ✓ Increased control to deliver (fine-tuned) flows into area of responsibility
- ✓ Cooperative processes to support downstream DCB
- ✓ Transparent interface with NM, FMP's, APT's, AU's. Better oversight of network coordination





**Network Manager adds value to
network performance!**

NM – connecting you to the network!



Thank you for your attention

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