SUPPORTING
EUROPEAN
AVIATION

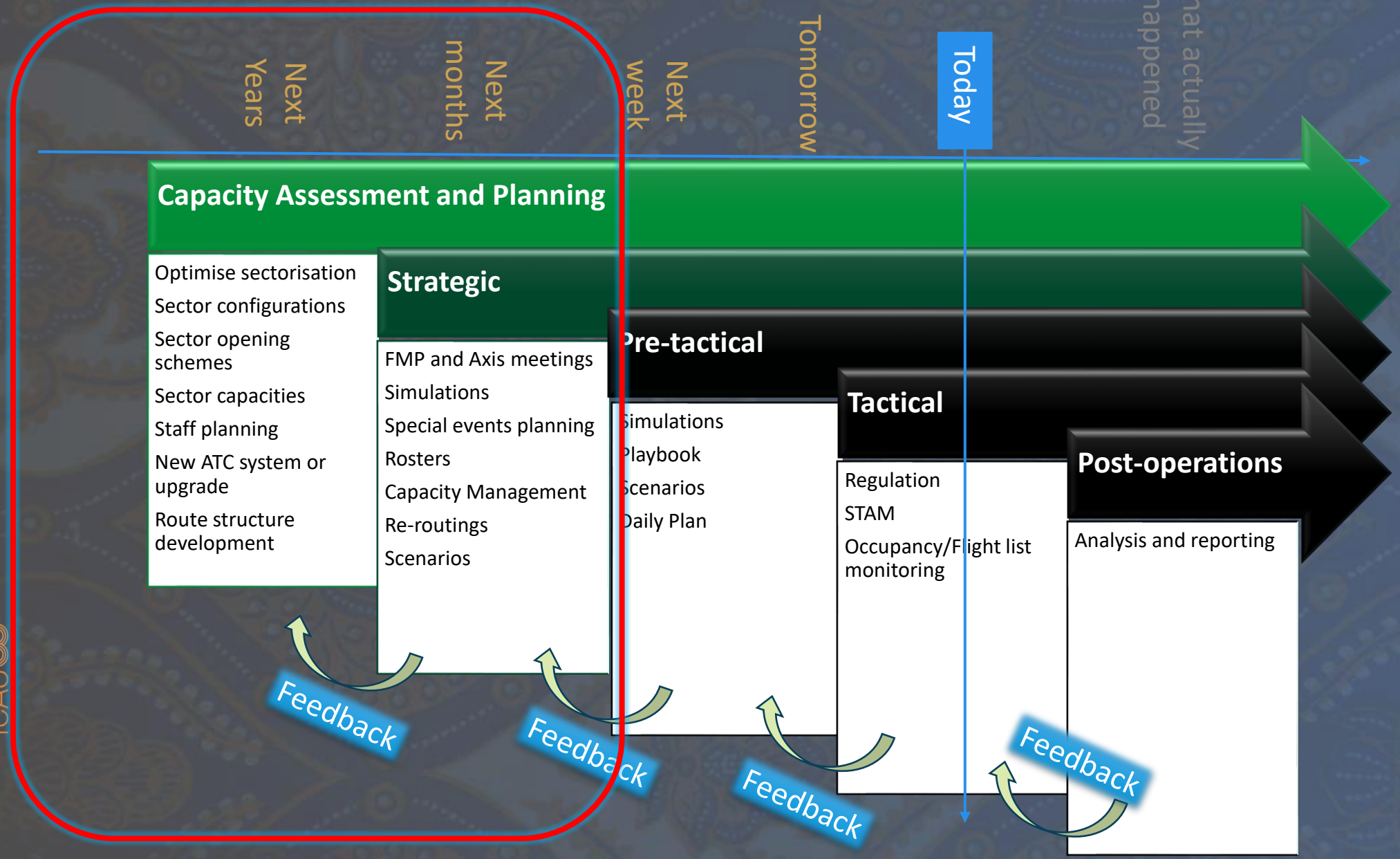
EUROCONTROL NM Network Capacity Planning Process

Ways to Increase Airspace Capacity

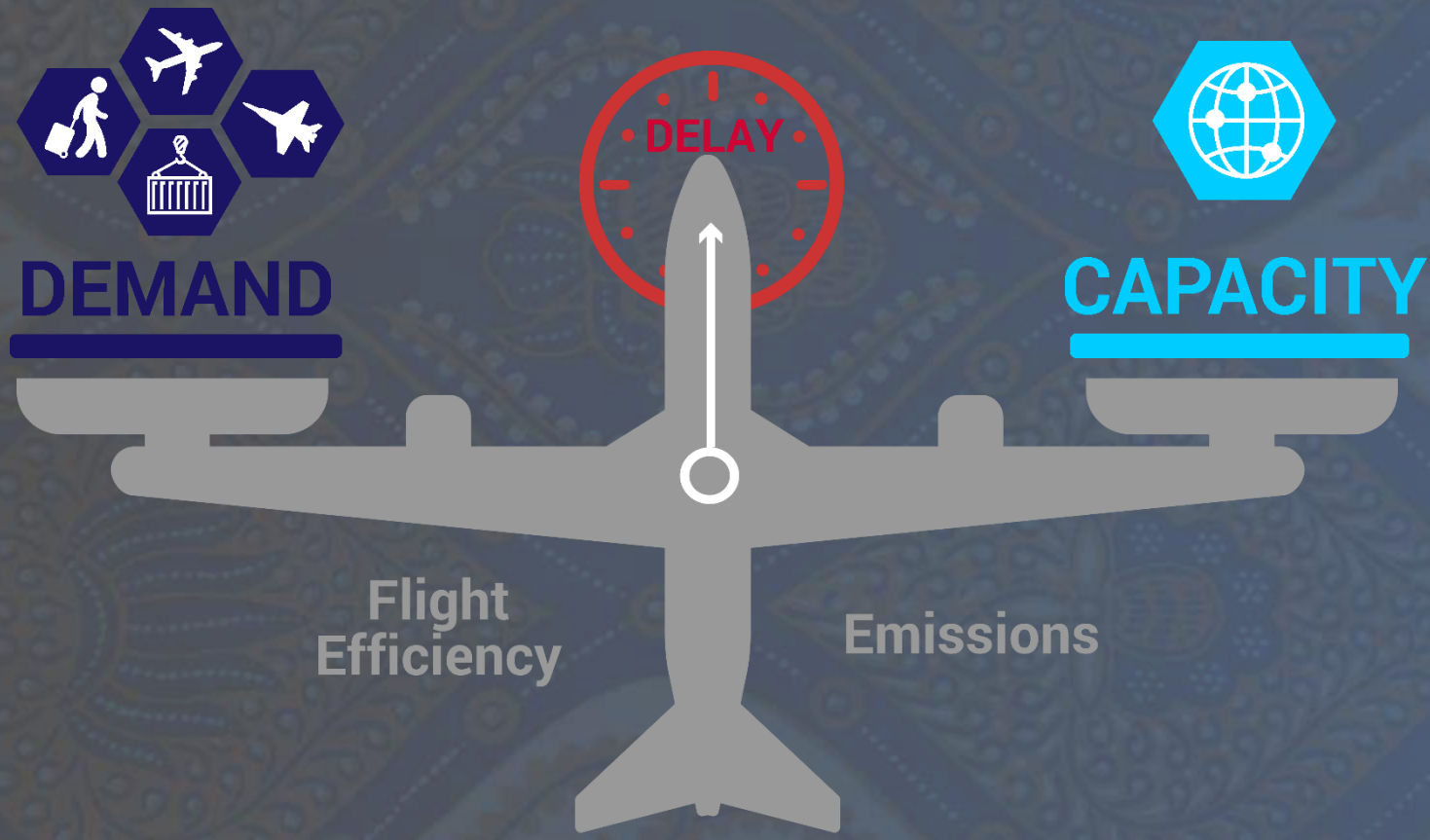
Raffaele Russo
EUROCONTROL DNM Operations Planning

CONSORTIUM COORDINATOR sesar DEPLOYMENT MANAGER
FOUNDING MEMBER sesar JOINT UNDERTAKING
NETWORK MANAGER

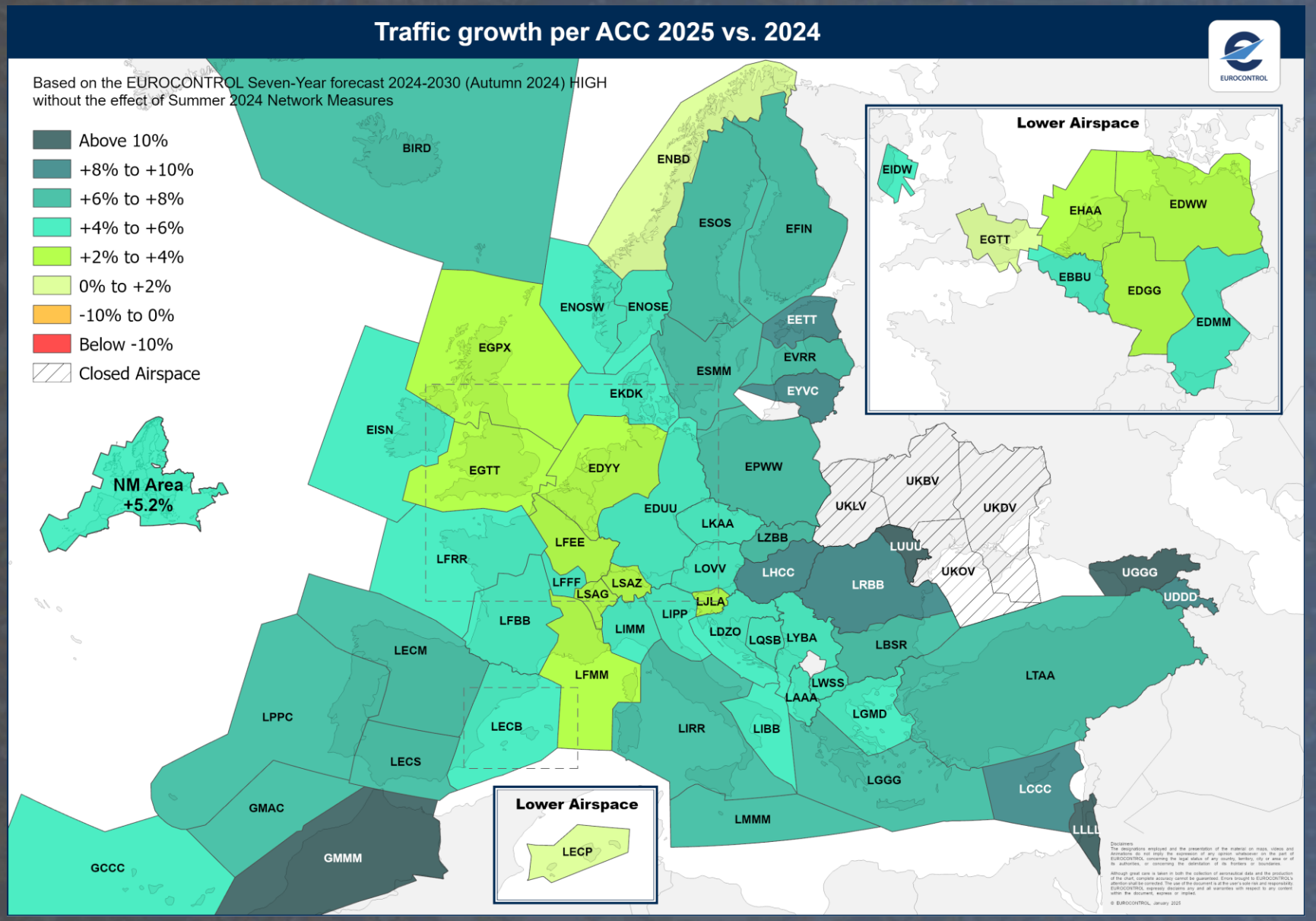
ATFCM


Next Years
Next months
Next week
Tomorrow
Today
What actually happened
Capacity Assessment and Planning
Optimise sectorisation
Sector configurations
Sector opening schemes
Sector capacities
Staff planning
New ATC system or upgrade
Route structure development
Strategic
FMP and Axis meetings
Simulations
Special events planning
Rosters
Capacity Management
Re-routings
Scenarios
Pre-tactical
Simulations
Playbook
Scenarios
Daily Plan
Tactical
Regulation
STAM
Occupancy/Flight list monitoring
Post-operations
Analysis and reporting
Feedback
Feedback
Feedback
Feedback

KEY PRINCIPLE

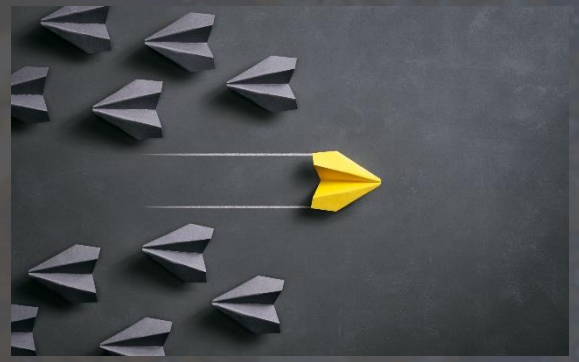


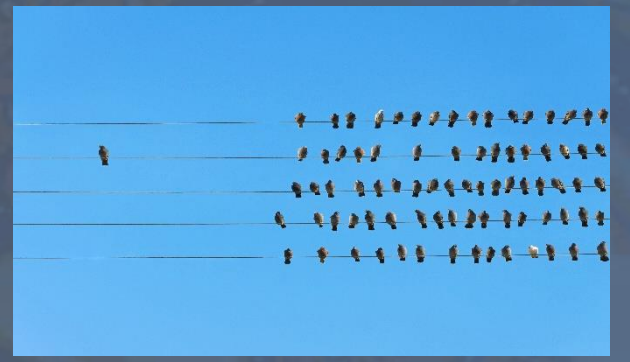
Traffic forecast 2025



ICAO

Single European Sky EU PERFORMANCE SCHEME





Safety

Capacity

Key performance areas

Environment

Cost-efficiency

Single European Sky EU Capacity Target

Performance Targets for RP4 2025-2029

Commission Implementing Decision (EU) 2024/1688 of 12 June 2024

Environment

The average horizontal en route flight efficiency of the actual trajectory (KEA)

- Measured as average additional distance flown compared to the great circle distance

2024	2025	2026	2027	2028	2029
2.40%	2.80%	2.75%	2.71%	2.68%	2.66%

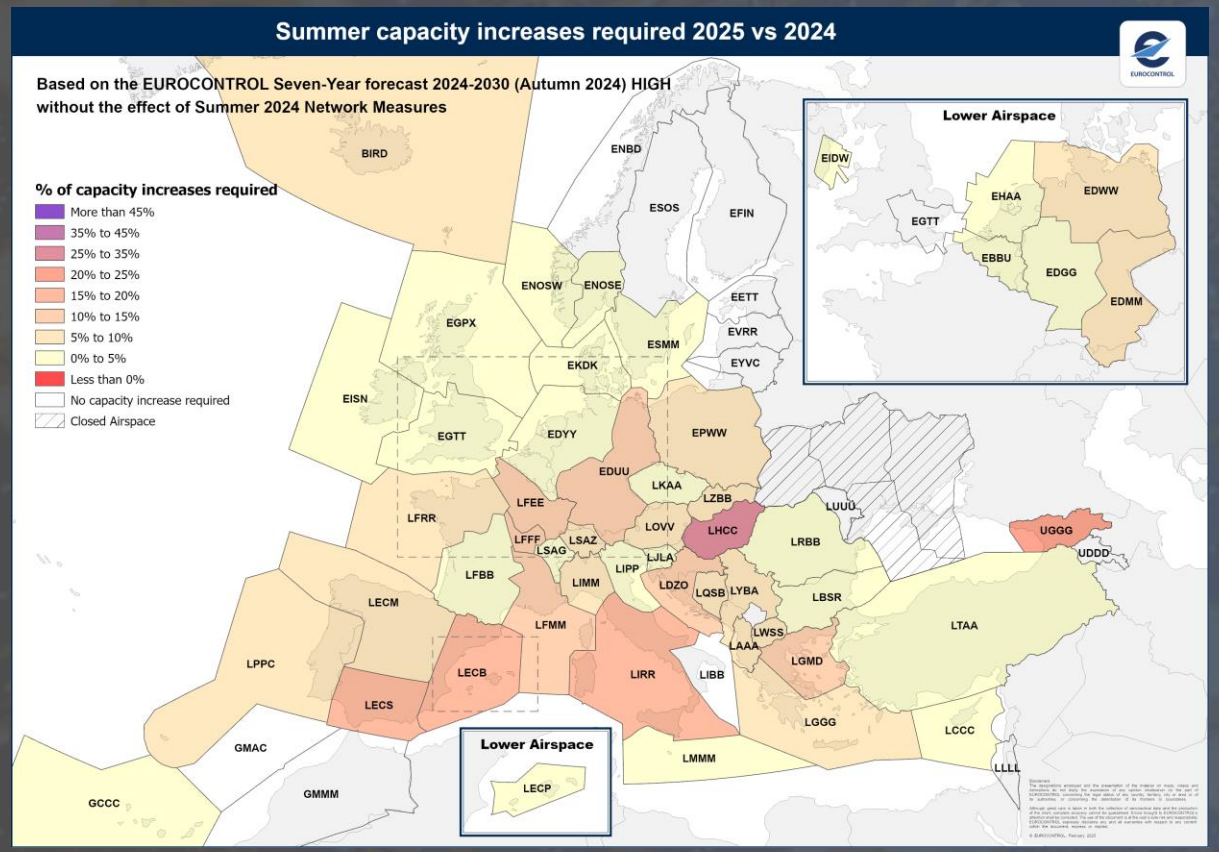
Capacity

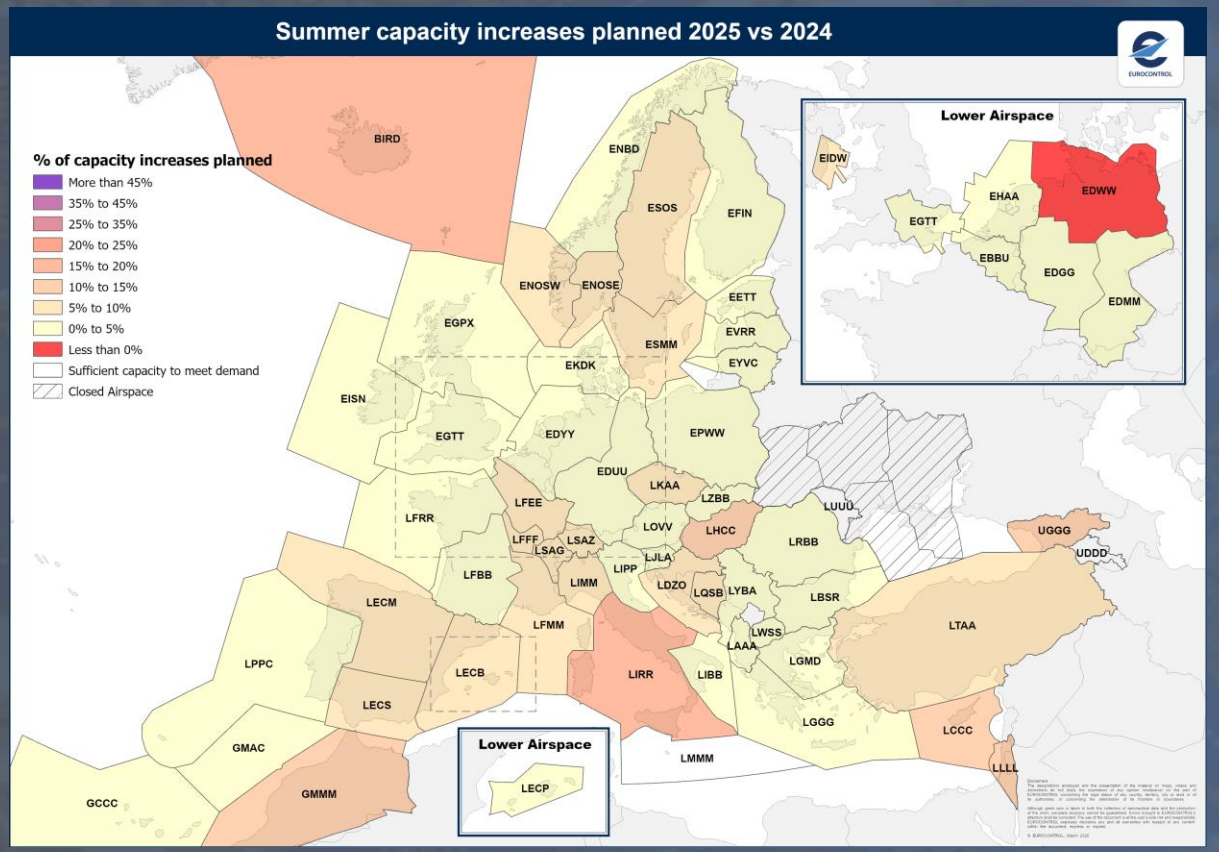
Minutes of en-route ATFM delay per flight:

- Annual delay
- ATFM delay only – ATC Capacity, Staffing, Events, Weather, Disruption, Industrial action
- En-route delay only – airport delay not considered

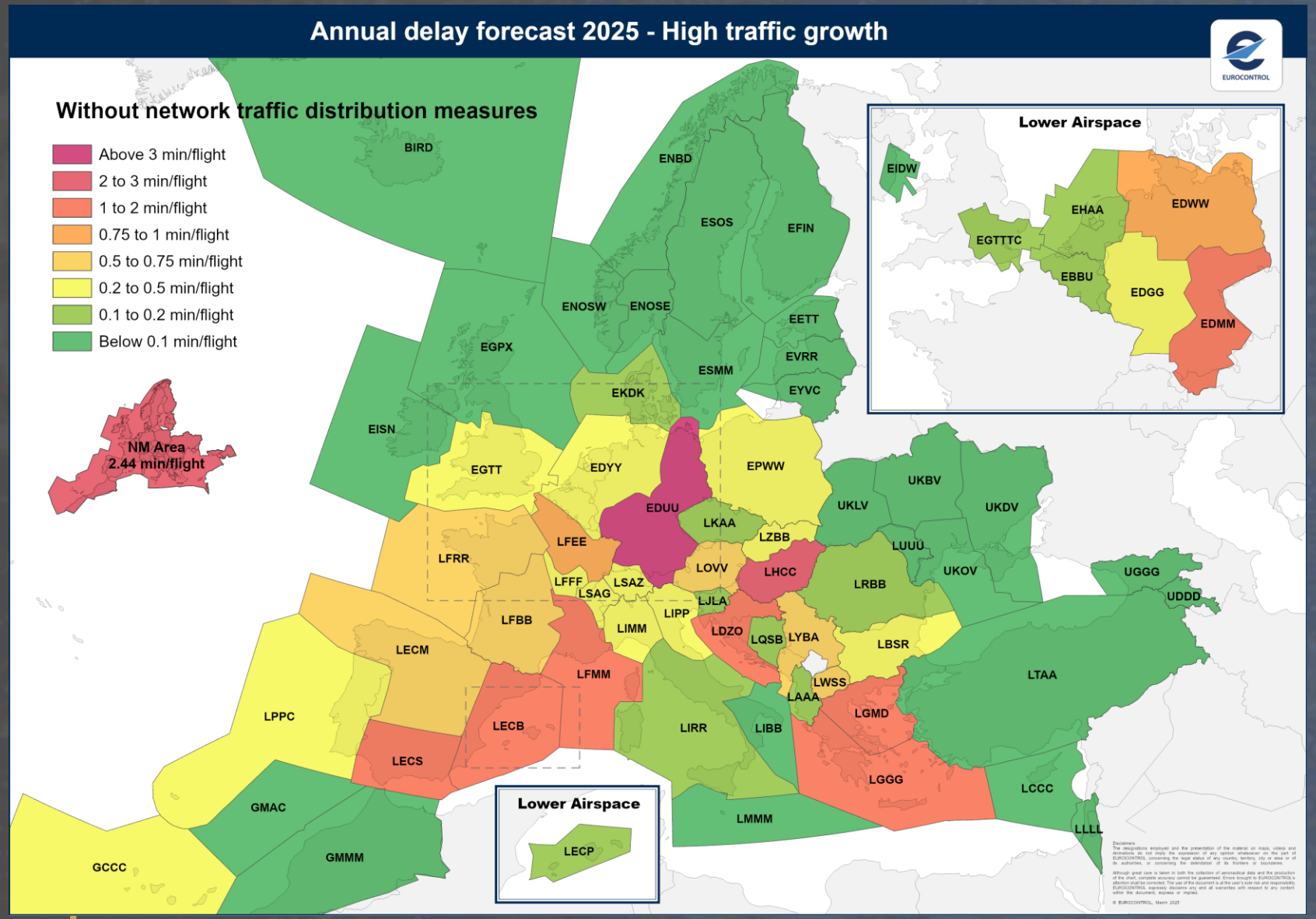
2024	2025	2026	2027	2028	2029
0.5	0.9	0.7	0.6	0.5	0.5

Capacity requirements & plans 2025





Delay forecast 2025



Weather delay

Included at a statistical level of **0.49 min/flight** based on the period 2018 to 2024 (excluding 2020 and 2021).

NOT included

- effects of the daily activities of the NMOC aimed at delay reductions
- effects of the network orientated ATFM and weather-related measures

Capacity Planning Annual Cycle

Summer

- Evaluation of summer performance
- ACC Capacity Baseline

Autumn

- Traffic Forecast Update
- Traffic Demand and Distribution
- Capacity Requirements and Delay Reference Values
- Interactive Capacity Planning
- ANSP Plans

Winter

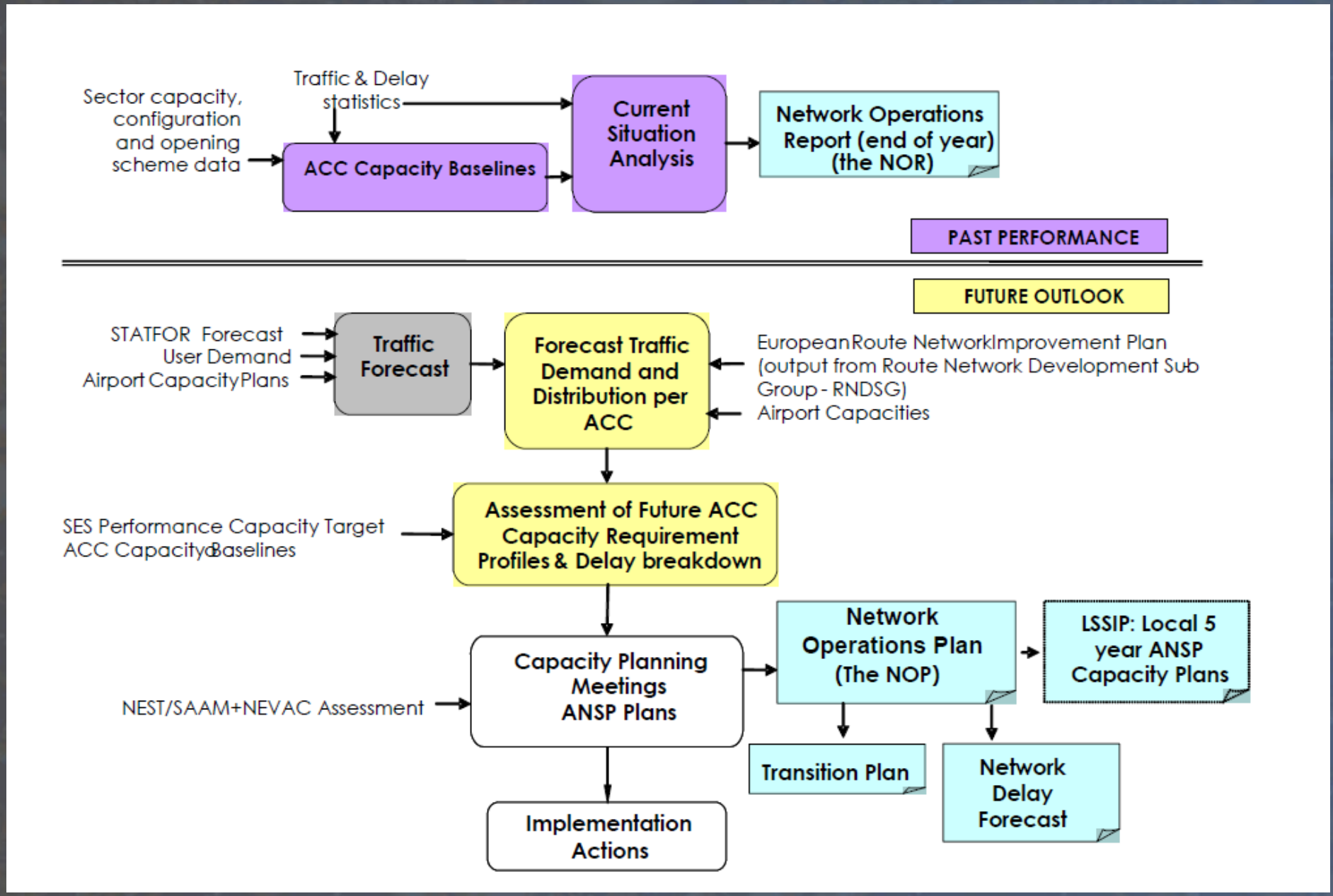
- Annual Performance Analysis – Network Operations Report (NOR)
- Consolidation of Plans – Network Operations Plan (NOP)

Spring

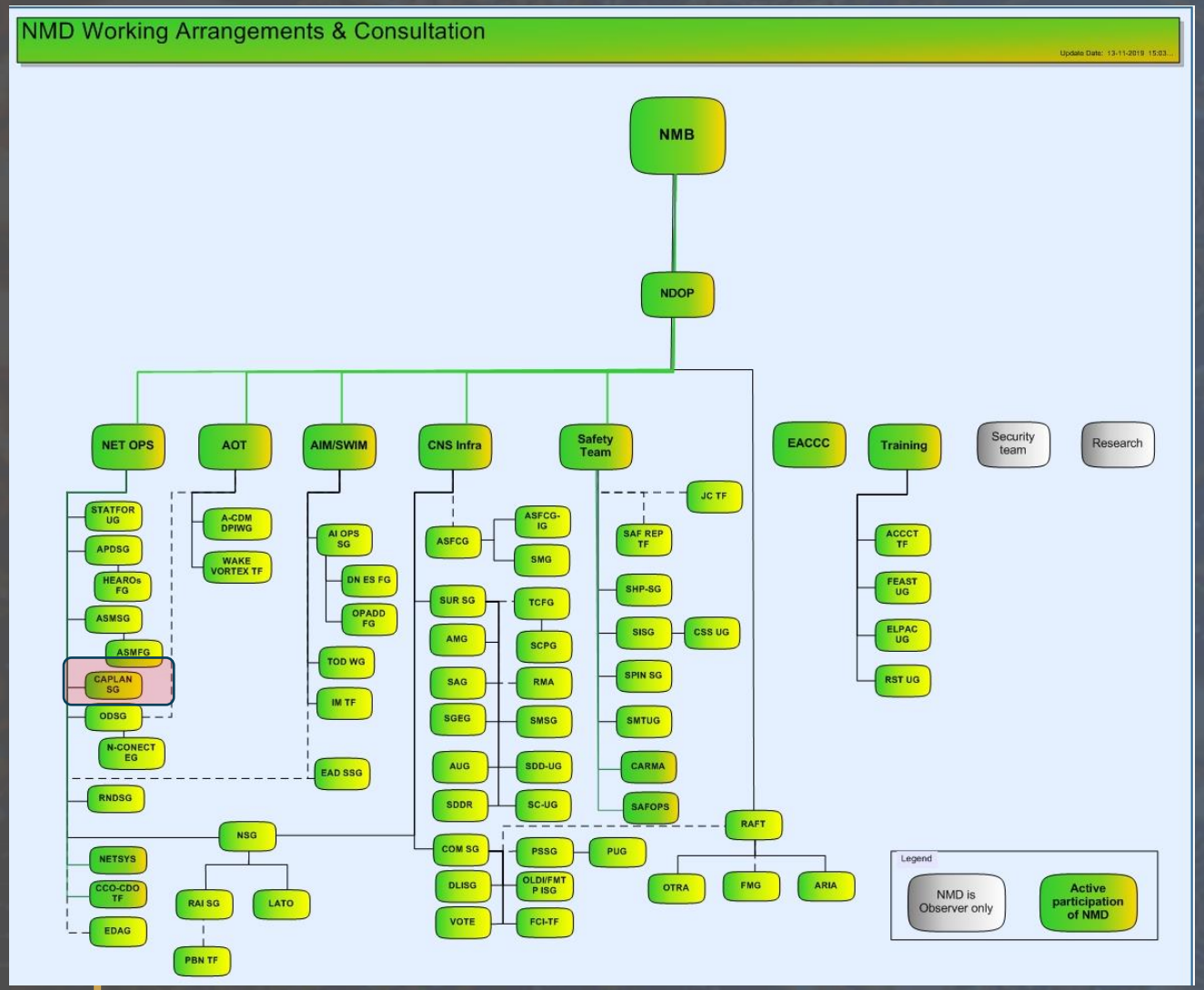
- Traffic Forecast NEW
- Network Delay Forecast
- Capacity Plans Updates
- NOP updates

NEST
Network Strategic Tool

DDR2
Demand Data Repository


Sector capacity, configuration and opening scheme data
Traffic & Delay statistics
ACC Capacity Baselines
Current Situation Analysis
Network Operations Report (end of year) (the NOR)
PAST PERFORMANCE
FUTURE OUTLOOK
STATFOR Forecast
User Demand
Airport Capacity Plans
Traffic Forecast
Forecast Traffic Demand and Distribution per ACC
European Route Network Improvement Plan (output from Route Network Development Sub Group - RNDSG)
Airport Capacities
SES Performance Capacity Target
ACC Capacity Baselines
Assessment of Future ACC Capacity Requirement Profiles & Delay breakdown
NEST/SAAM+NEVAC Assessment
Capacity Planning Meetings ANSP Plans
Network Operations Plan (The NOP)
LSSIP: Local 5 year ANSP Capacity Plans
Transition Plan
Network Delay Forecast
Implementation Actions

CAPLANSG
Capacity Planning Sub-Group



Is a **co-ordination forum** on capacity planning methodologies, development of capacity plans, performance forecasts and supporting tools

brings together capacity managers from **all** the European ANSPs.

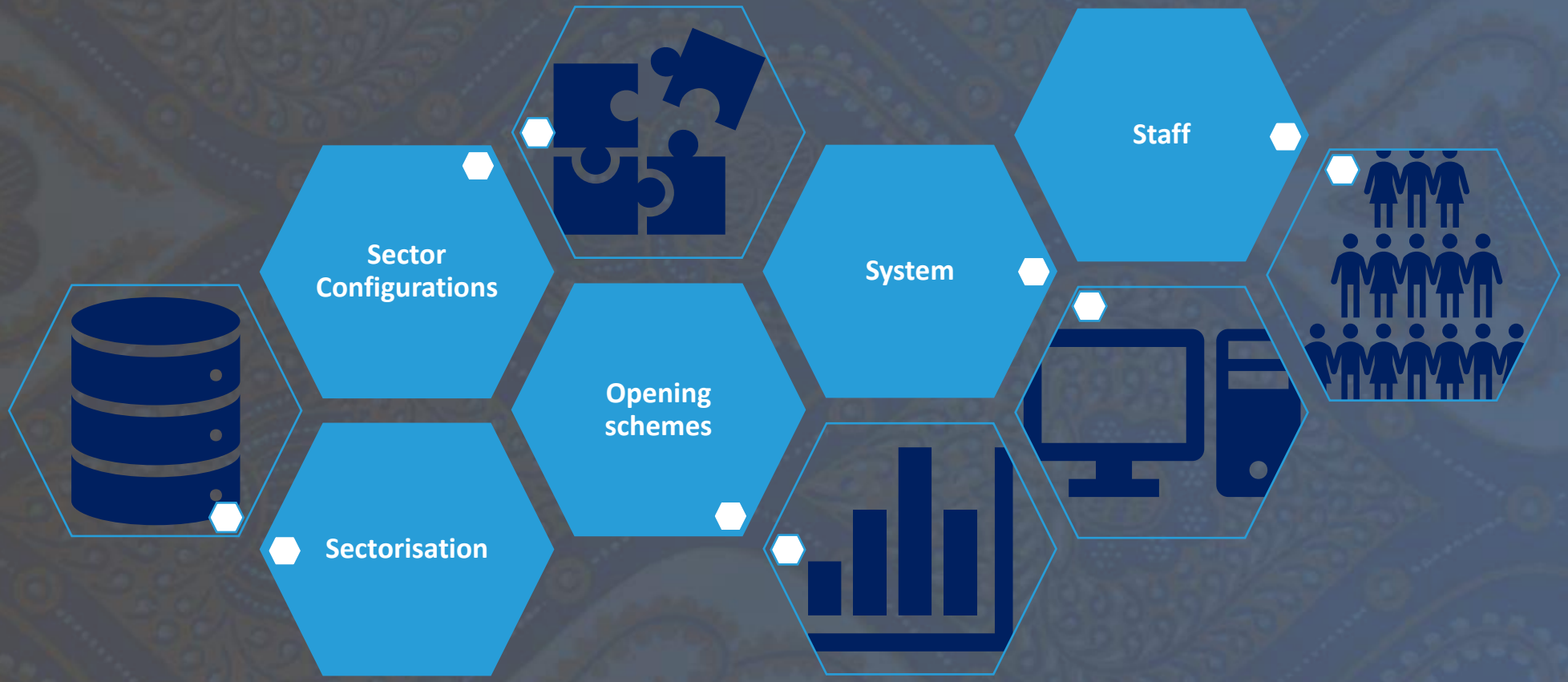
recommends **measures to improve transparency** of the overall process

develops an effective, **interactive approach with stakeholders** in order to reach a **consensus** on capacity planning aspects.

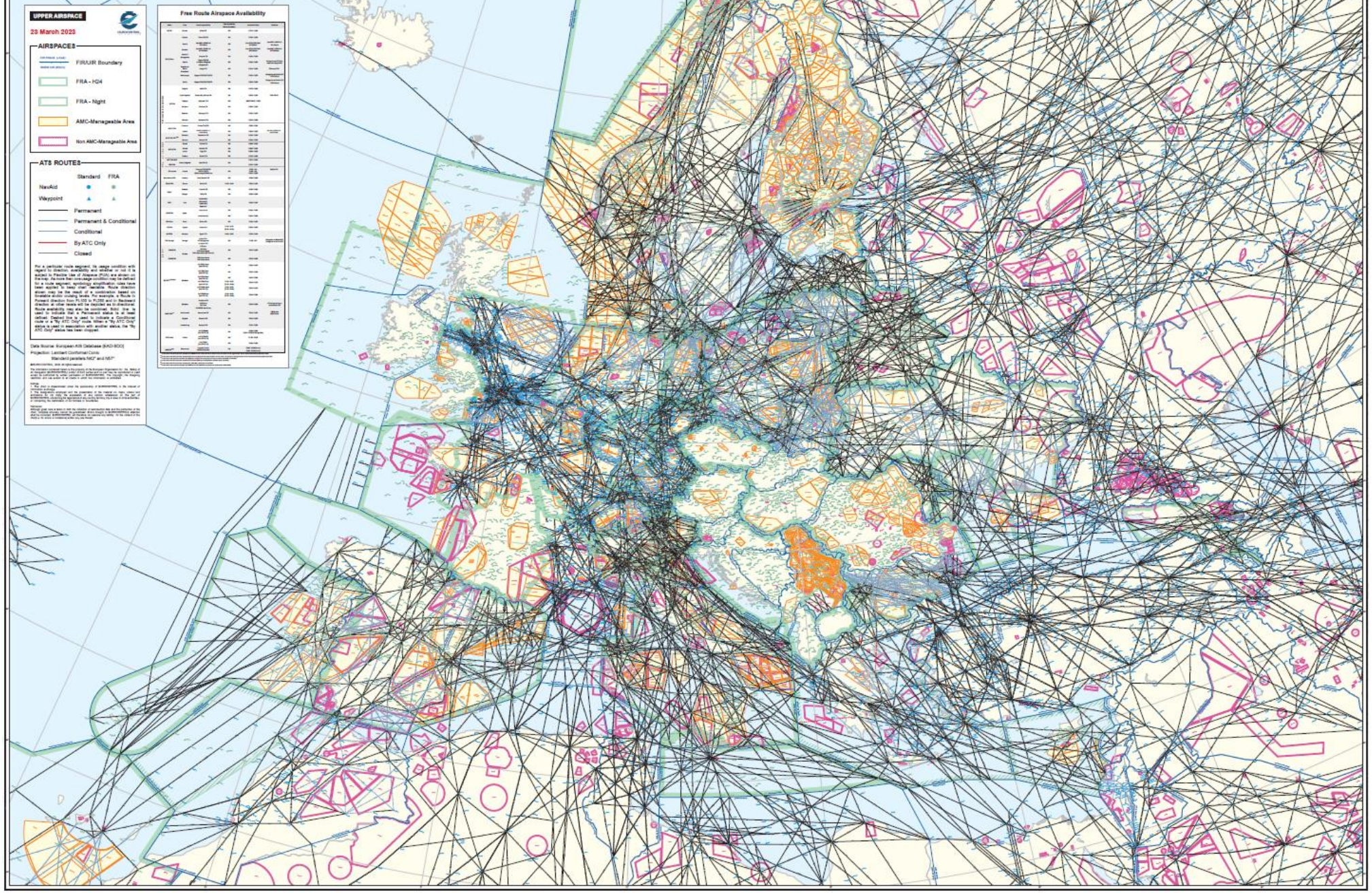
addresses the **development and implementation of concepts** currently under development within SESAR.

has an essential input for the **implementation of seamless processes from planning into operations**.

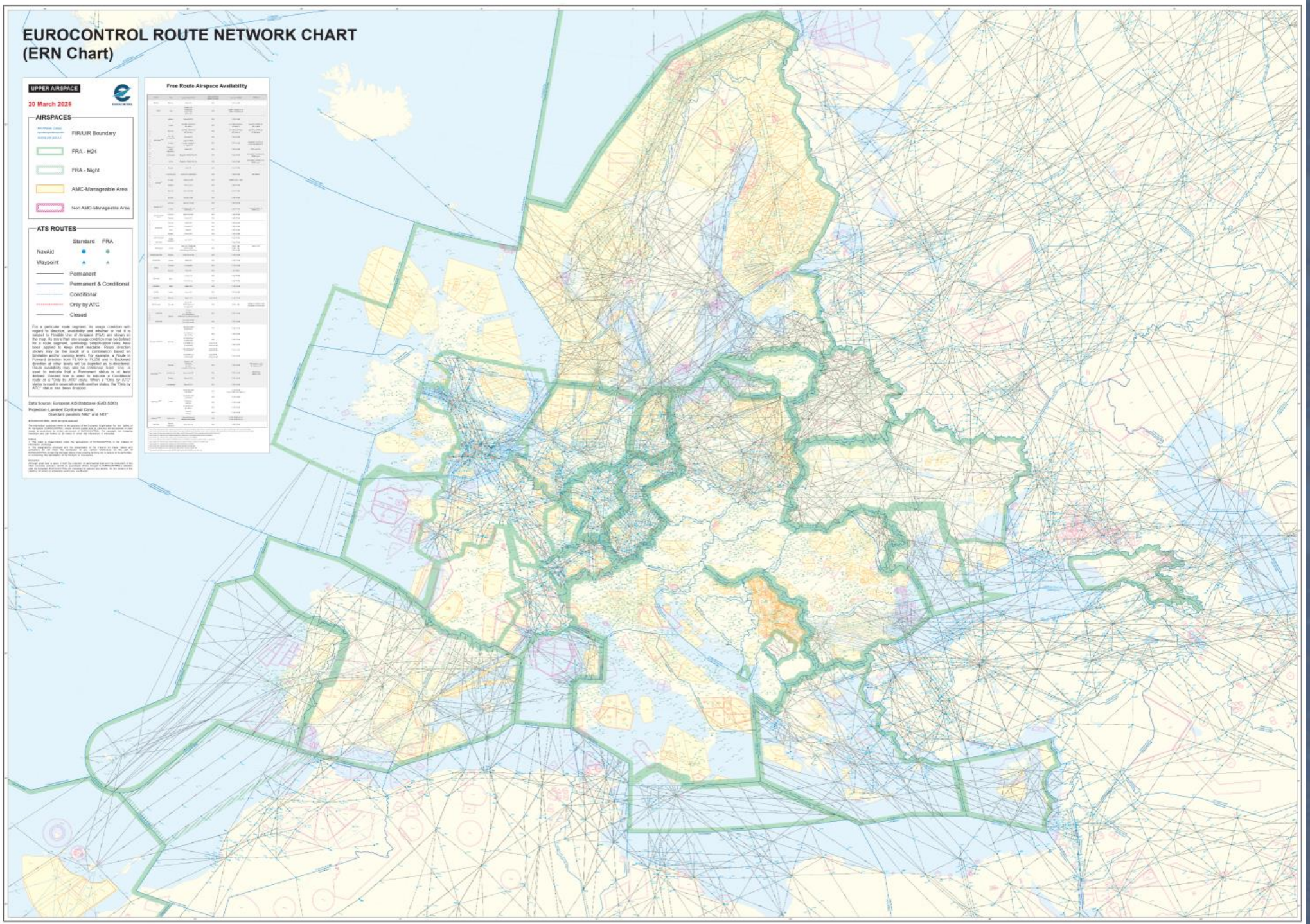
Actions to increase Airspace Capacity



EUROCONTROL ROUTE NETWORK CHART (ERN Chart)

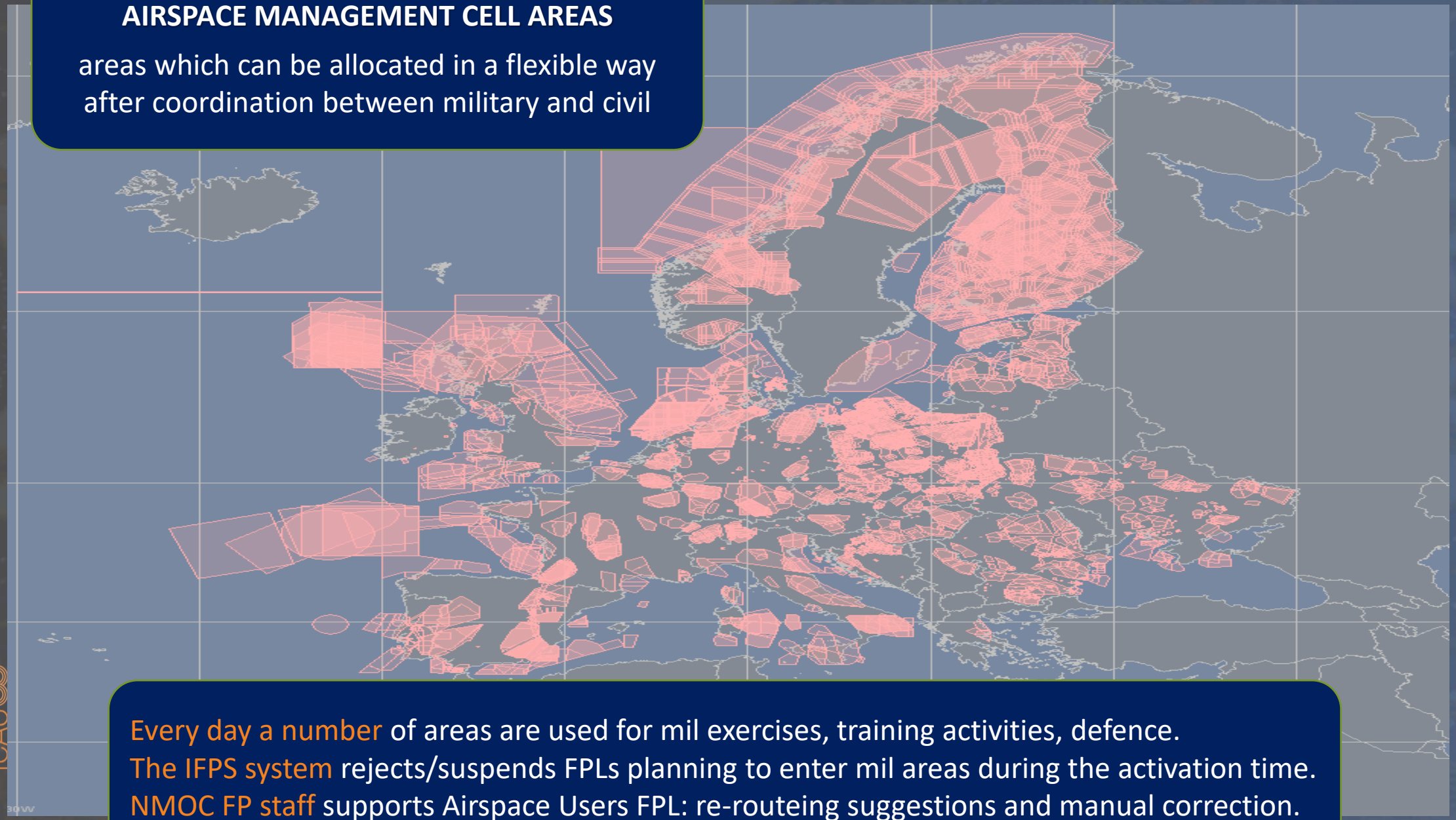


EUROCONTROL ROUTE NETWORK CHART (ERN Chart)



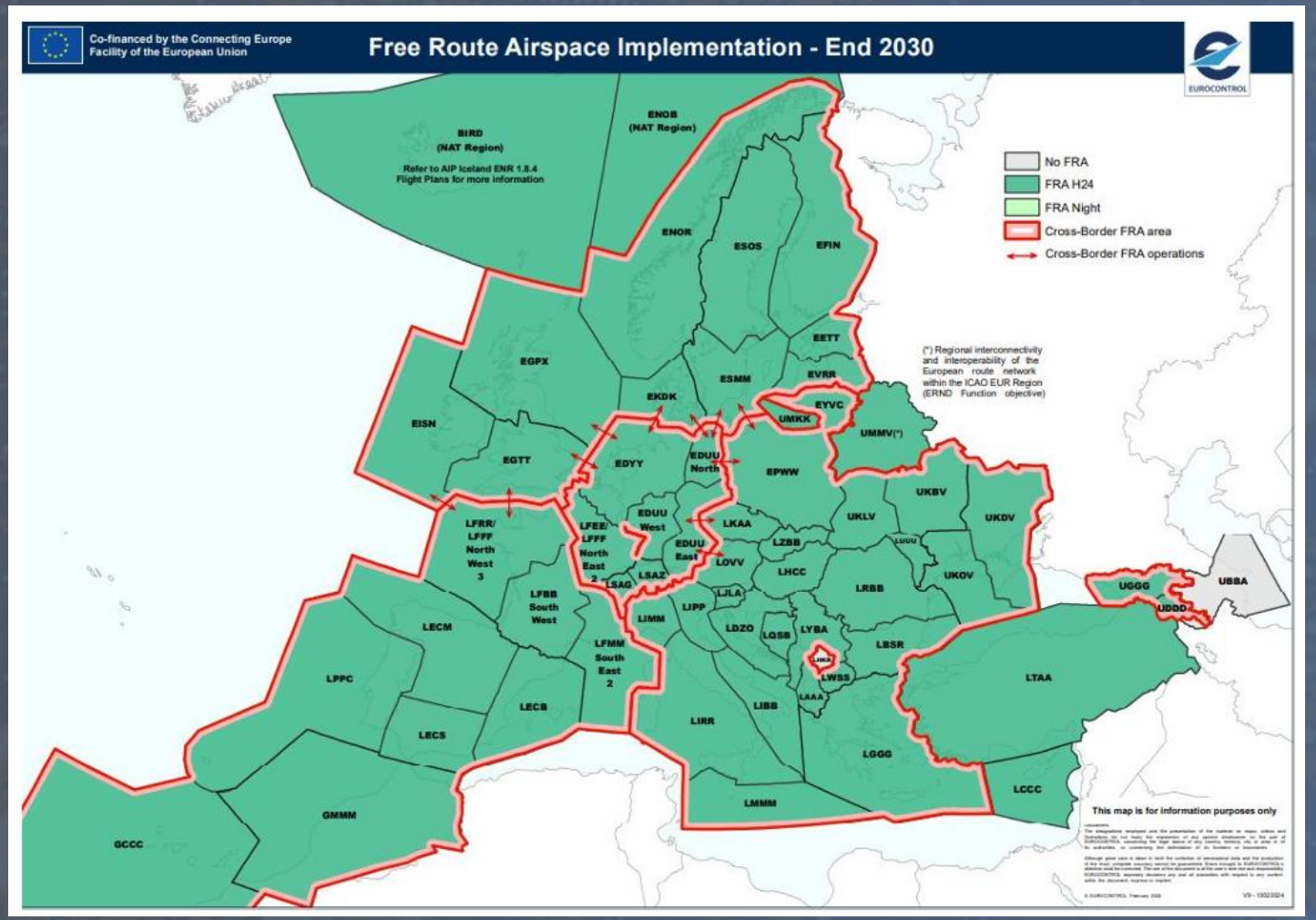
AIRSPACE MANAGEMENT CELL AREAS

areas which can be allocated in a flexible way after coordination between military and civil



Every day a number of areas are used for mil exercises, training activities, defence.
The IFPS system rejects/suspends FPLs planning to enter mil areas during the activation time.
NMOC FP staff supports Airspace Users FPL: re-routeing suggestions and manual correction.

Airspace Restructuring
ERNIP Part 2 – ARN Version 2024-2030



Capacity Plan Example
Nicosia ACC
NOP 2019 - 2024

Actions to improve airspace capacity

Summer Capacity Plan						
	2019	2020	2021	2022	2023	2024
Free Route Airspace				Free Route implementation according to PCP		
Airspace Management Advanced FUA	Stepped implementation of A-FUA					
Airport & TMA Network Integration						
Cooperative Traffic Management*	Improved ATFCM, including STAM					
Airspace	Stepped re-sectorisation of Nicosia ACC					
Procedures		Reduce Nicosia FIR separation standard from 10 to 5 NM				
Staffing	4 ATCOs less on the roster	2 ATCOs less on the roster due to retirement	7 additional ATCOs[1]	7 additional ATCOs		
	Continuation of staff performance scheme until the creation of the new ANSP					
Technical			Implementation of Approach Radar function at LCLK and LCPH airports			
	Datalink					
	ATM system upgrades				New ATM system	
Capacity	More flexibility in sector configuration openings					
	Improve Civil-Military cooperation in the South-East part of the FIR					
		Operation of a 6th en-route sector during peaks				
	Revision of sector capacities					
Significant Events	Transition to the new ACC (pending approvals)			Training for the new ATM system		
Max sectors	5	5/6	6	7	7	7
Planned Annual Capacity Increase	5%	5%	5%	8%	8%	8%
Reference profile Annual % Increase	14%	5%	5%	5%	5%	4%
Difference Capacity Plan v. Reference Profile	-8.9%	-8.4%	-8.0%	-5.5%	-3.1%	0.0%
Annual Reference Value (min)	0.25	0.36	0.34	0.26	0.16	0.16
Annual en-route delay forecast without eNM/ANSP Measures (min)	1.06	1.13	0.43 – 1.18			
Annual en-route delay forecast with eNM/ANSP Measures (min)	1.06	1.13				
Additional information	[1]Actual net balance is 1 additional controller due to retirements in 2019 and 2020					

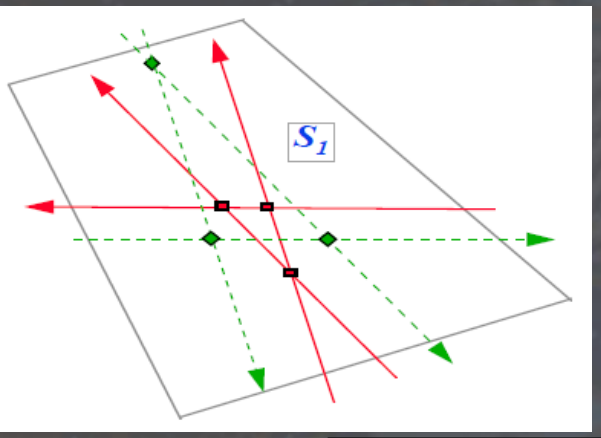
The delay forecast excludes delays for disruptions such as industrial actions and technical failures

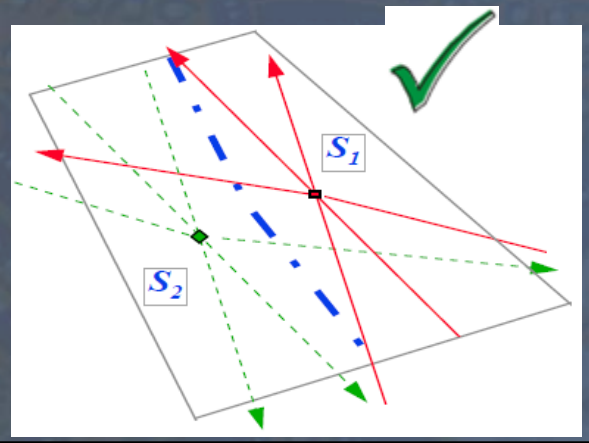
Capacity Plan Example
Nicosia ACC
NOP 2025/2026-2029

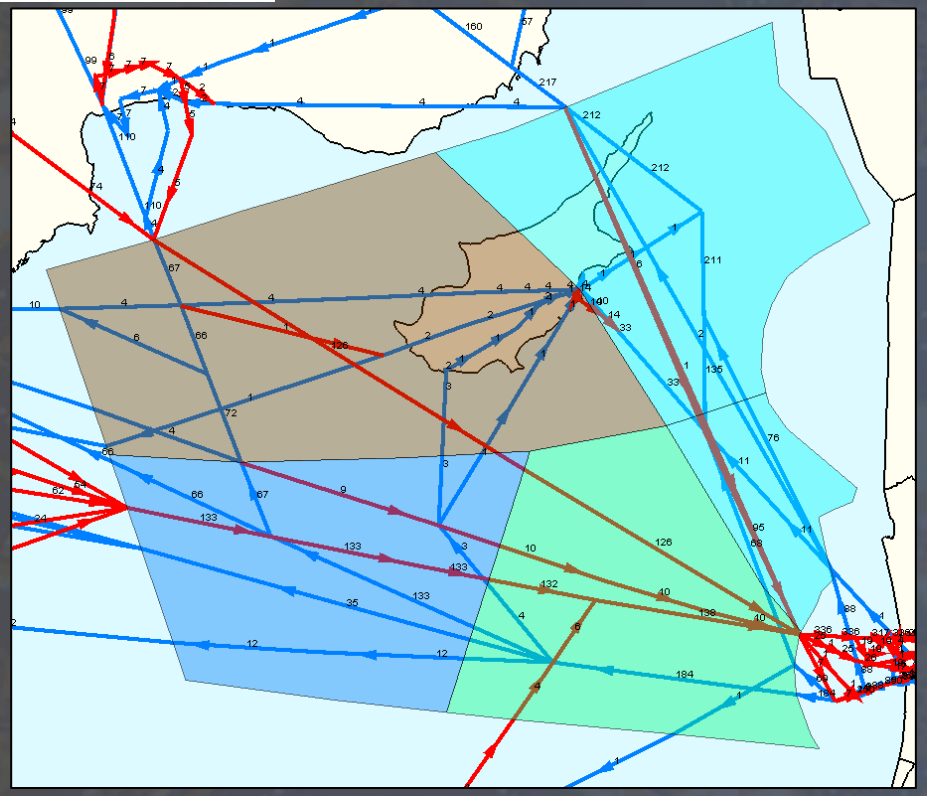
Actions to improve airspace capacity

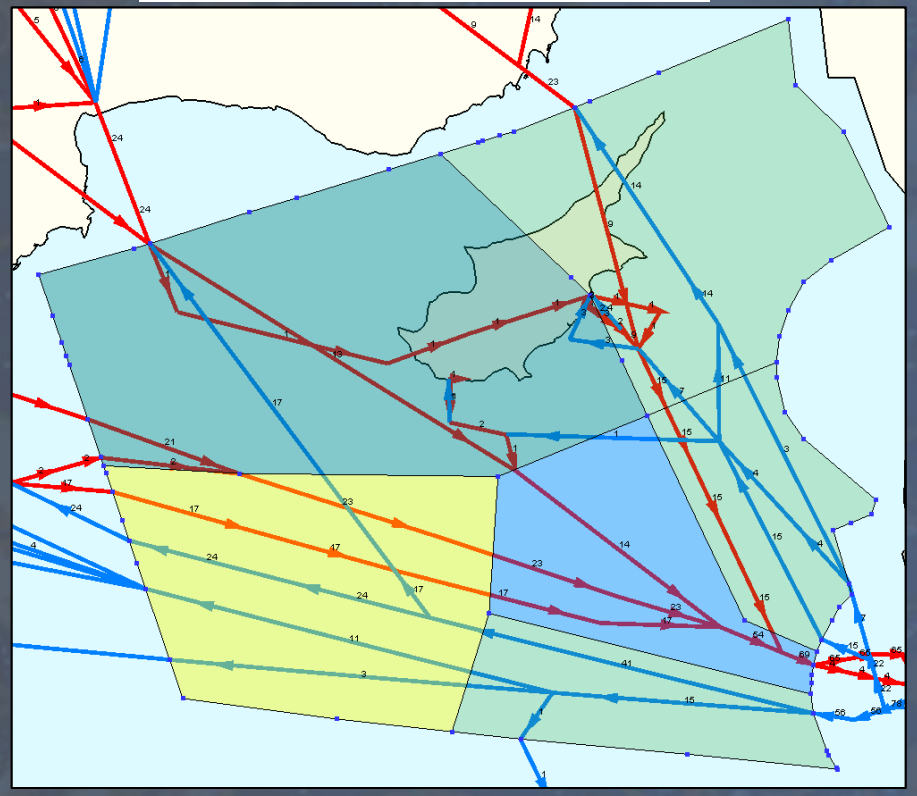
Summer Capacity Plan					
	2025	2026	2027	2028	2029
Free Route Airspace	FRA Phase 2	Cross-border FRA with Greece			
Airspace Management Advanced FUA	Stepped implementation of A-FUA				
Airport & TMA Network Integration	Larnaca APS Daily Service		Larnaca APS H24 Paphos APS Ad-hoc basis		
Cooperative Traffic Management	Improved ATFCM, including STAM				
Airspace	Continuous improvement of route network				
	Assessment and implementation of re-sectorisation of Nicosia ACC				
Procedures		Reduce Nicosia FIR separation standard from 10 to 5 NM			
Staffing	Continuous effort for recruitment*				
	+5 (97)	+1 (98)	-3 (95)	+8 (103)	0 (103)
Technical	Annual ATM system upgrades, based on upcoming requirements				
Capacity	Continue to provide flexibility in sector configuration openings				
	Continue Civil-Military cooperation in the South-East part of the FIR				
	Dynamic management of sector capacities				
Significant Events	Move to the new ACC				
Max sectors	6	7	7	7	7
Planned Annual Capacity Increase	10%**	5%	2%	2%	2%
Capacity Profile Annual % Increase	3%	5%	6%	4%	3%
Capacity Plan v. Profile	8%	7%	3%	1%	0%
Annual Reference Value (min)	0.17	0.13	0.12	0.09	0.09
Annual en-route Delay Forecast (min)	0.09	0.09	0.09	0.09	0.09
Additional information	*Capability of 10 new ACC ATCOs every 2 years ** the planned capacity increase for 2025 is the combination of the planned projects for 2025 and the pre-existing capacity available at the ACC in 2024 The Capacity plan from 2026 may be positively impacted by the Corporatization of the ANSP – ongoing project				

Example: En-route Airspace Re-Design

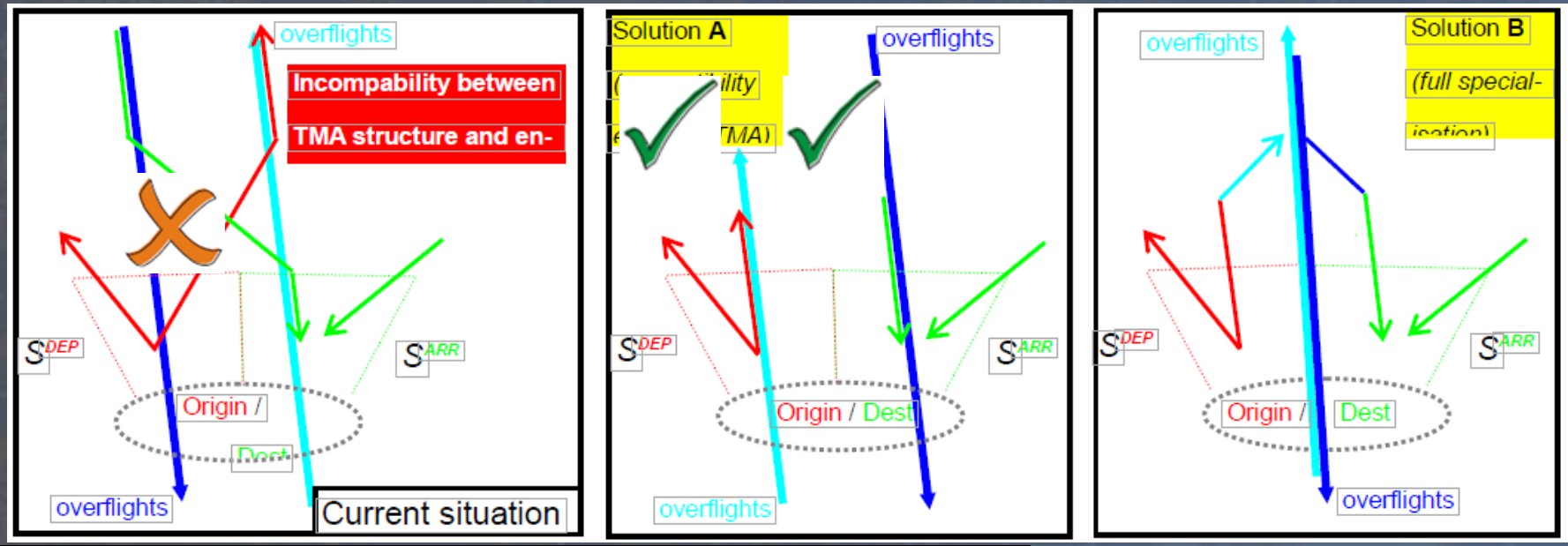


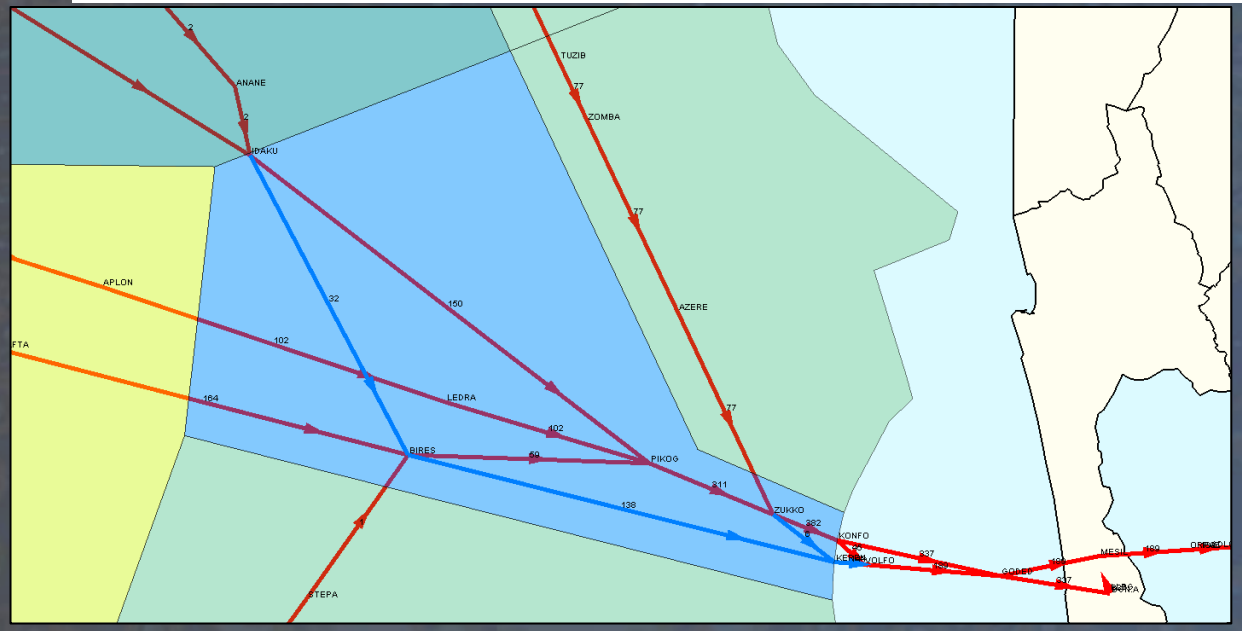




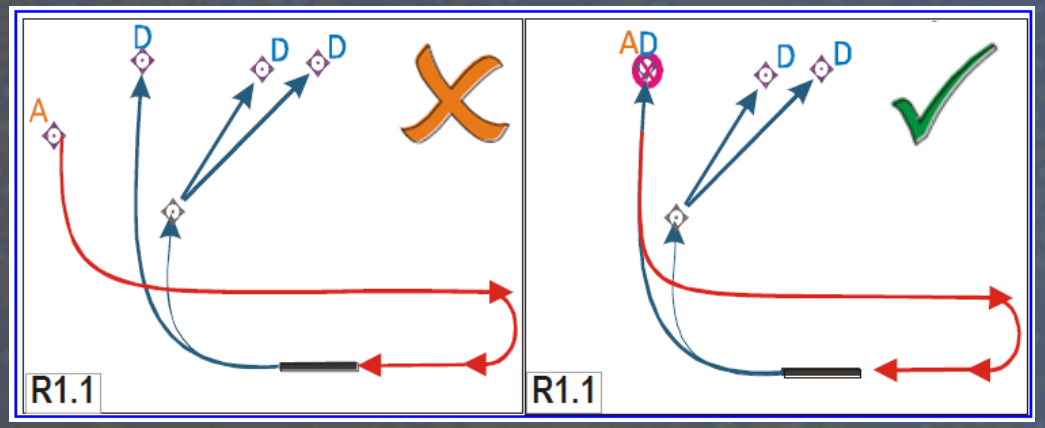


Example: En-route Airspace Re-Design

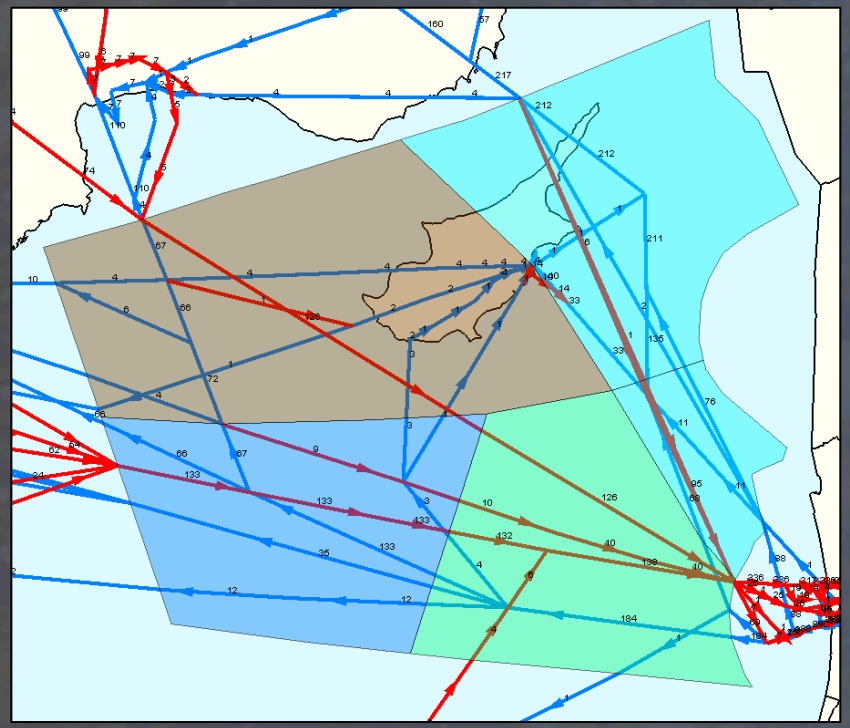


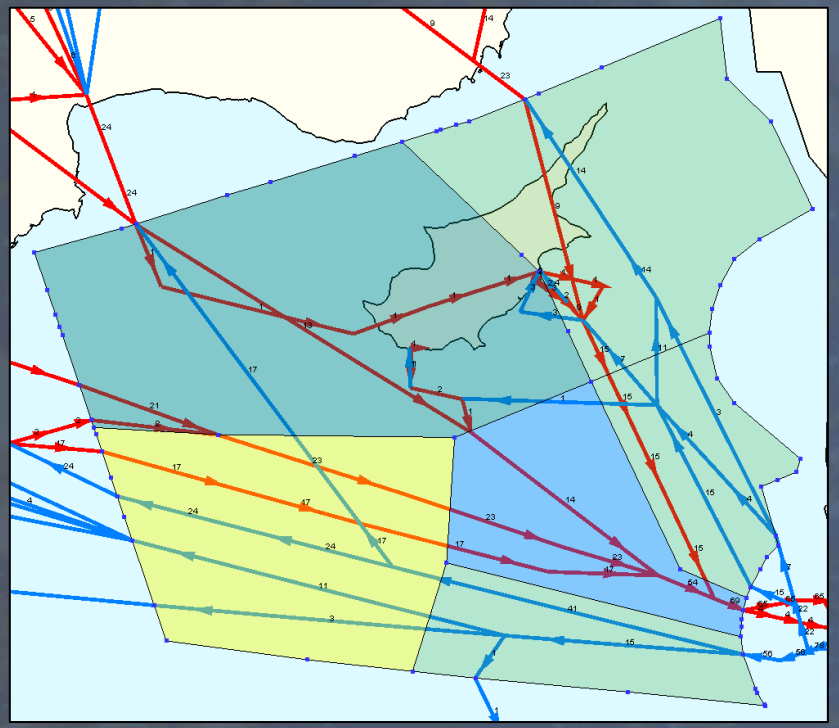


Example: En-route Airspace Re-Design



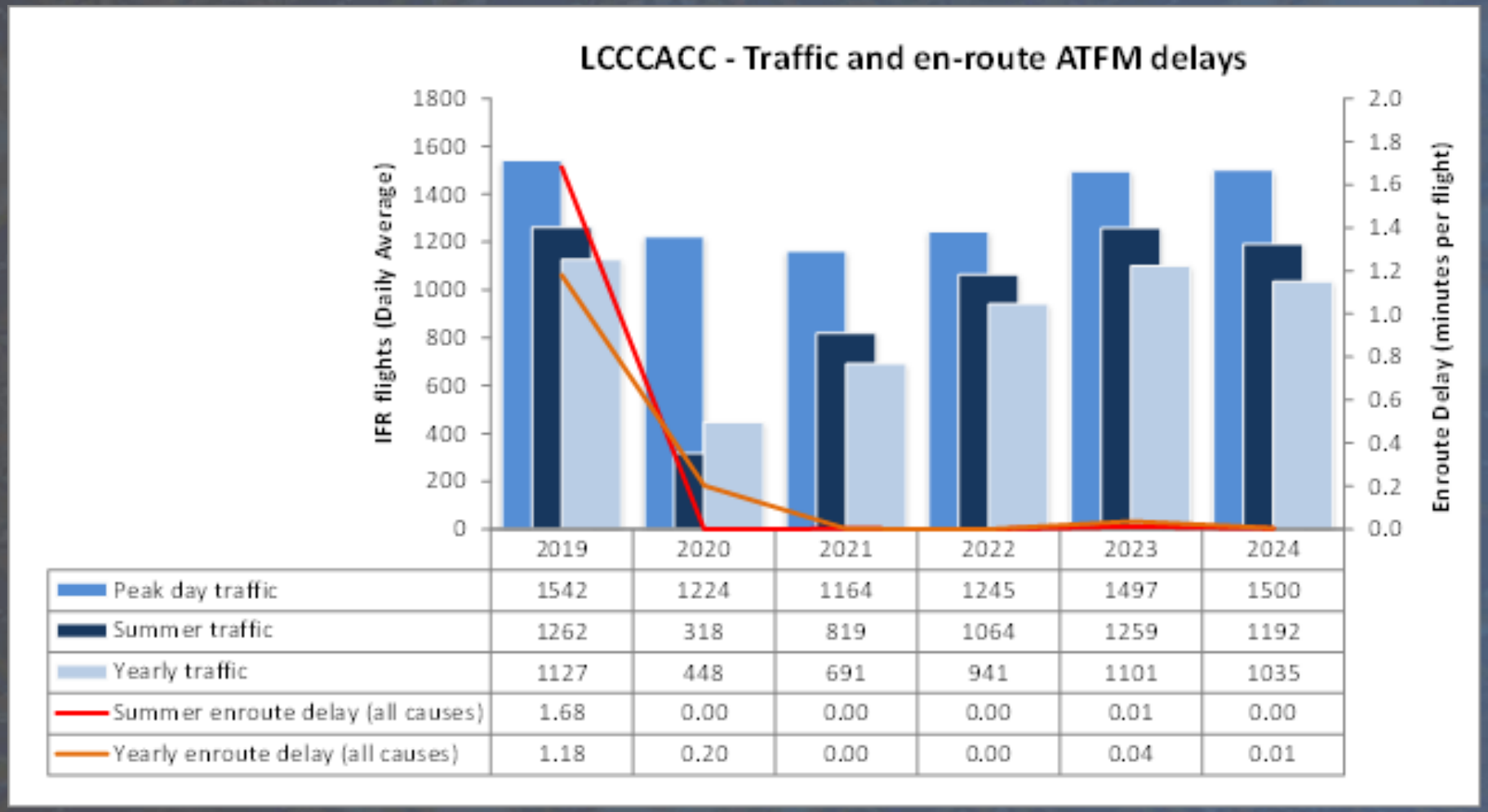
Terminal **arrival and departure** routes should be **laterally segregated** from each other





Capacity Delivery - Impact of planned actions to increase capacity

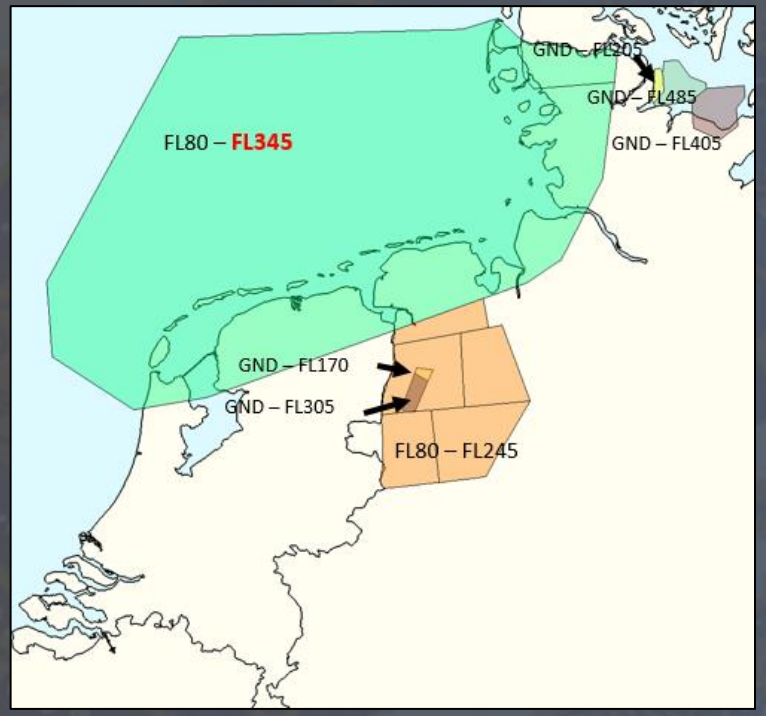
Example: Nicosia ACC
NOR 2024



	2019	2020	2021	2022	2023	2024
Peak day traffic	1542	1224	1164	1245	1497	1500
Summer traffic	1262	318	819	1064	1259	1192
Yearly traffic	1127	448	691	941	1101	1035
Summer enroute delay (all causes)	1.68	0.00	0.00	0.00	0.01	0.00
Yearly enroute delay (all causes)	1.18	0.20	0.00	0.00	0.04	0.01

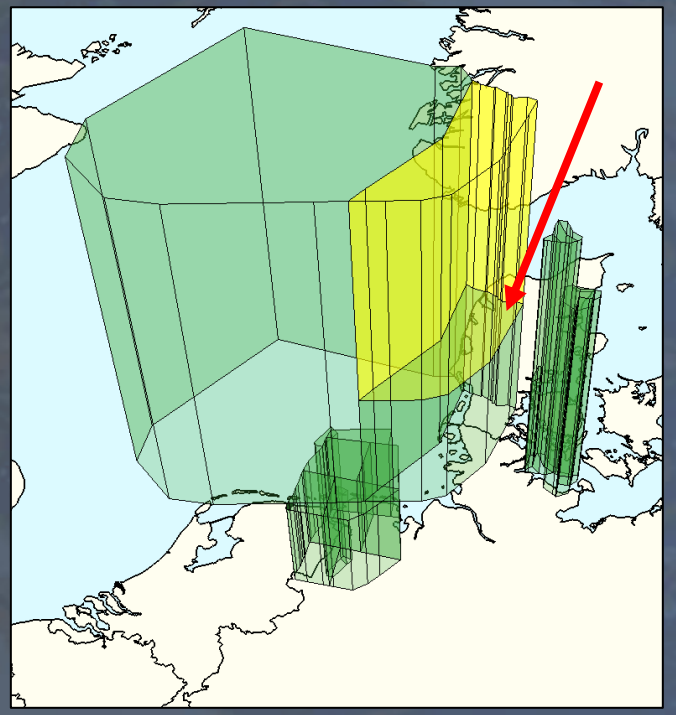
Example: En-route Airspace Re-Design Civil-Military requirements

CBA up to FL345



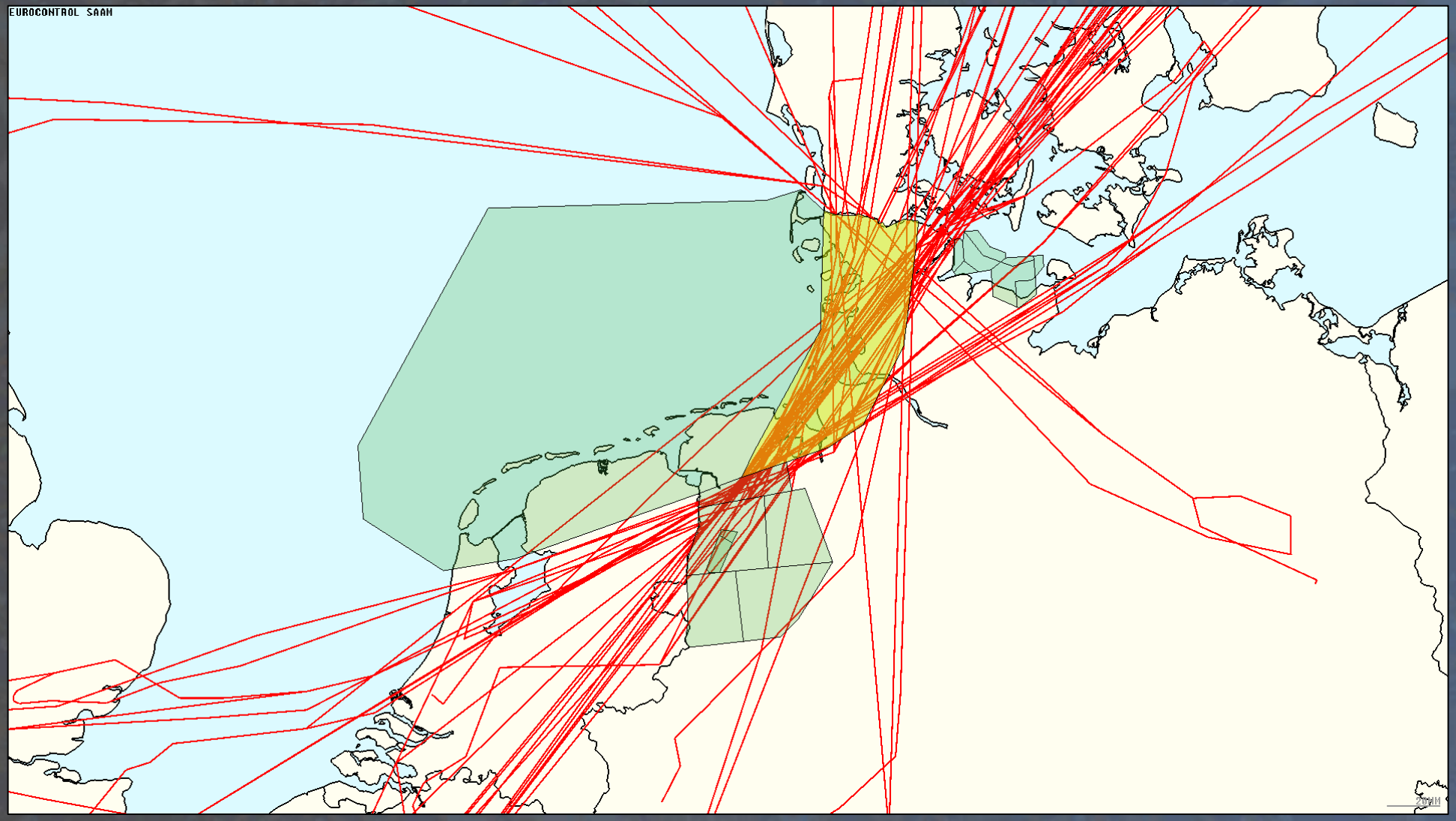
CBA adapted

Up to FL305



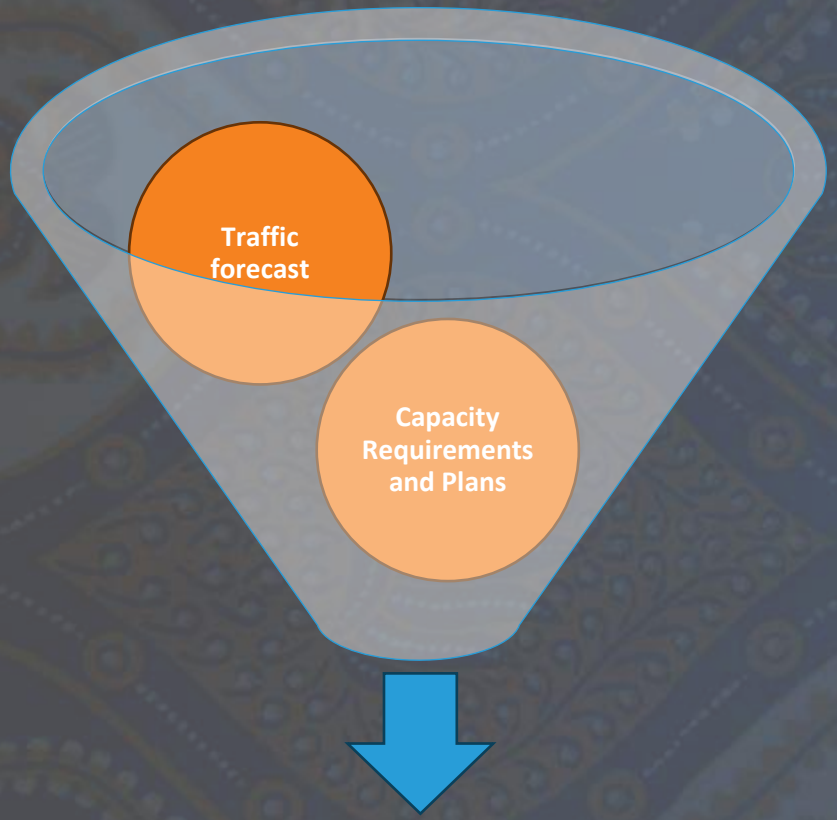
Example: En-route Airspace Re-Design Civil-Military requirements

153 flights crossing the yellow airblock above FL305



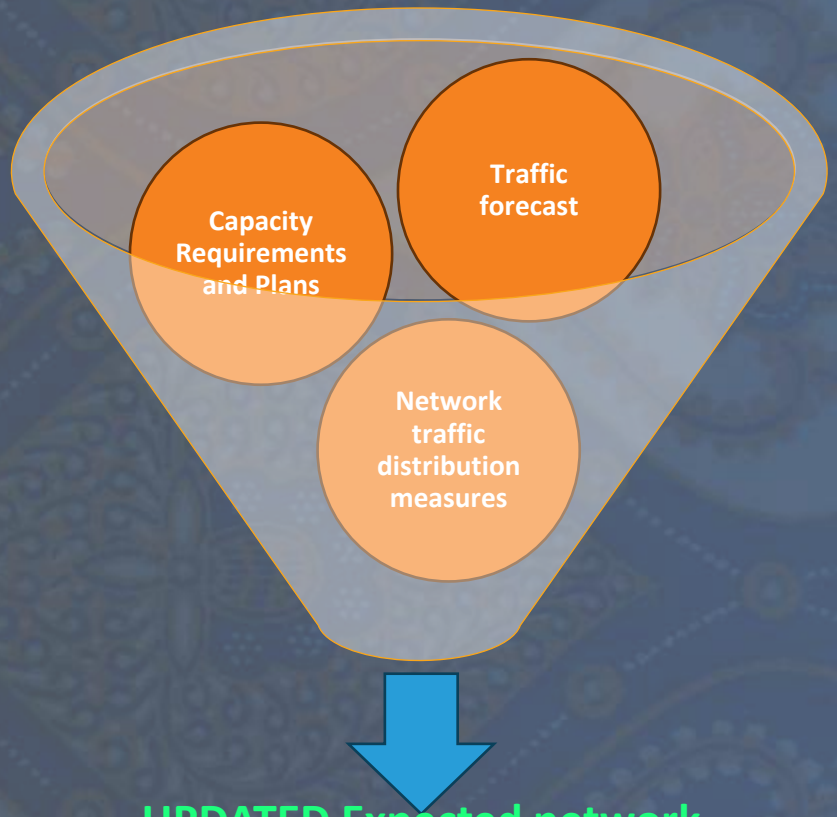
What if planned actions are NOT enough?

What can be planned before pre-tactical and tactical phases



Expected network performance

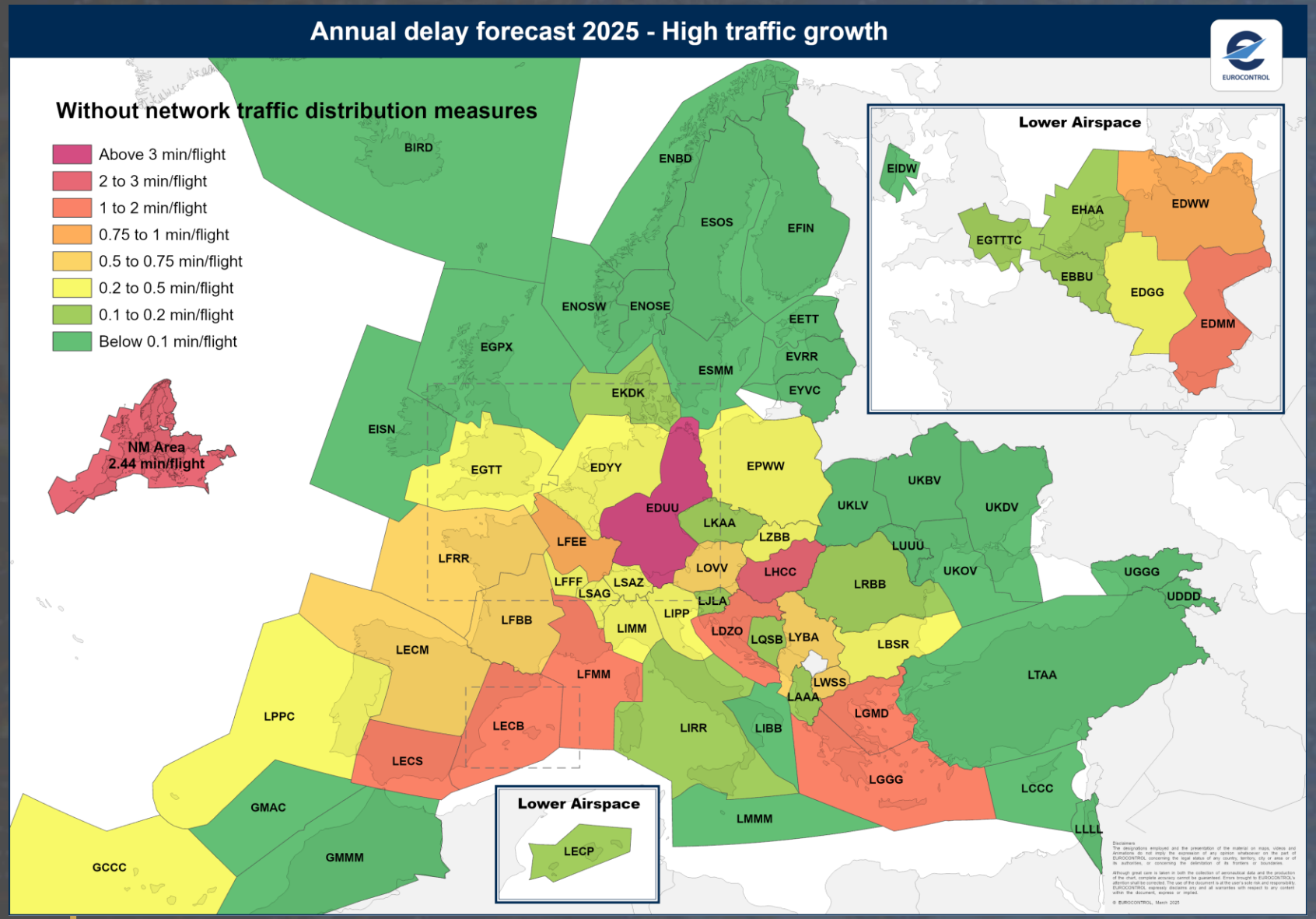
DELAY FORECAST



UPDATED Expected network performance

REVISED DELAY FORECAST

Delay forecast 2025



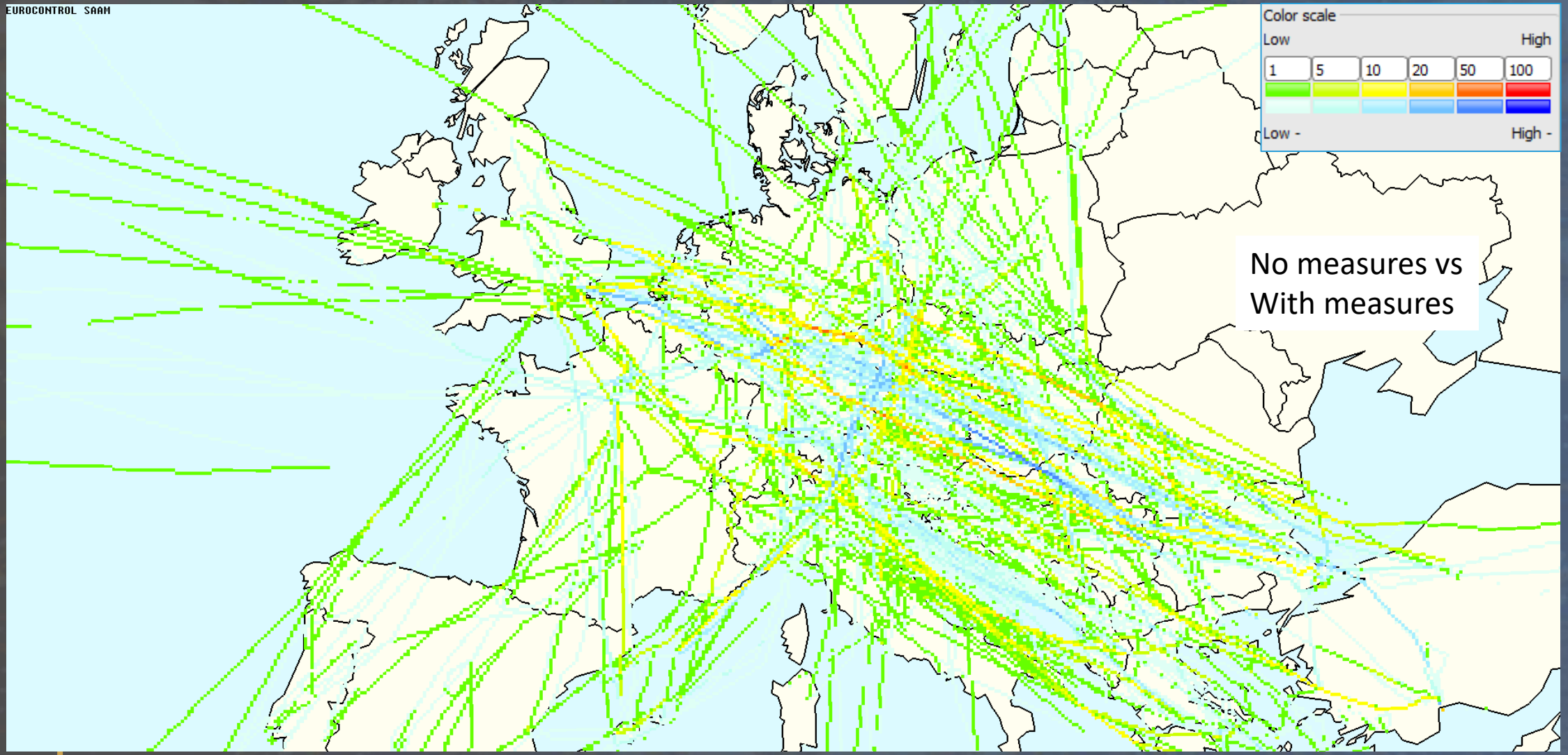
Weather delay

Included at a statistical level of **0.49 min/flight** based on the period 2018 to 2024 (excluding 2020 and 2021).

NOT included

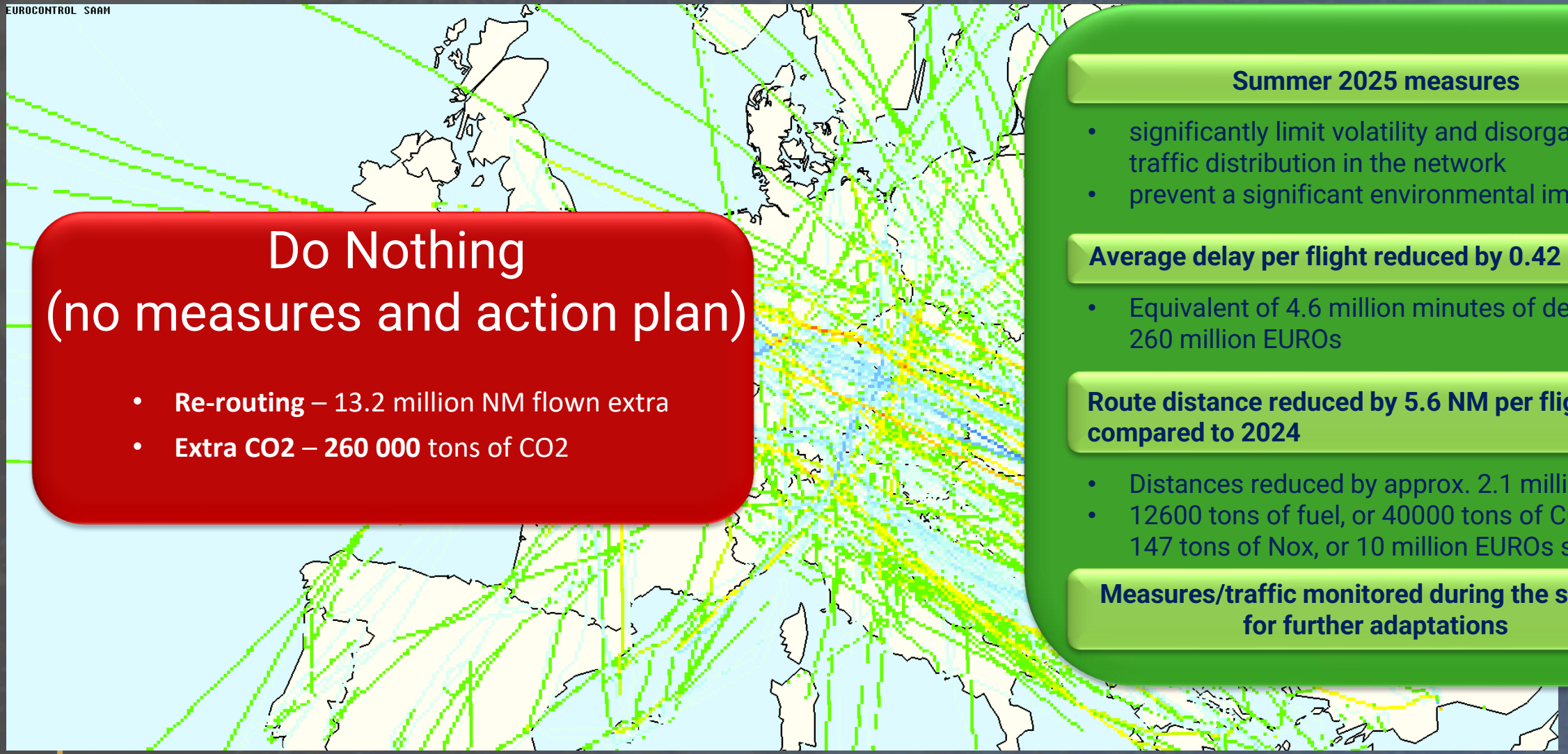
- effects of the daily activities of the NMOC aimed at delay reductions
- effects of the network orientated ATFM and weather-related measures

Summer 2025 Network traffic distribution measures



Summer 2025 Network traffic distribution measures

Impact assessment



Do Nothing
(no measures and action plan)

- **Re-routing** – 13.2 million NM flown extra
- **Extra CO2** – **260 000** tons of CO2

Summer 2025 measures

- significantly limit volatility and disorganised traffic distribution in the network
- prevent a significant environmental impact

Average delay per flight reduced by 0.42 minutes

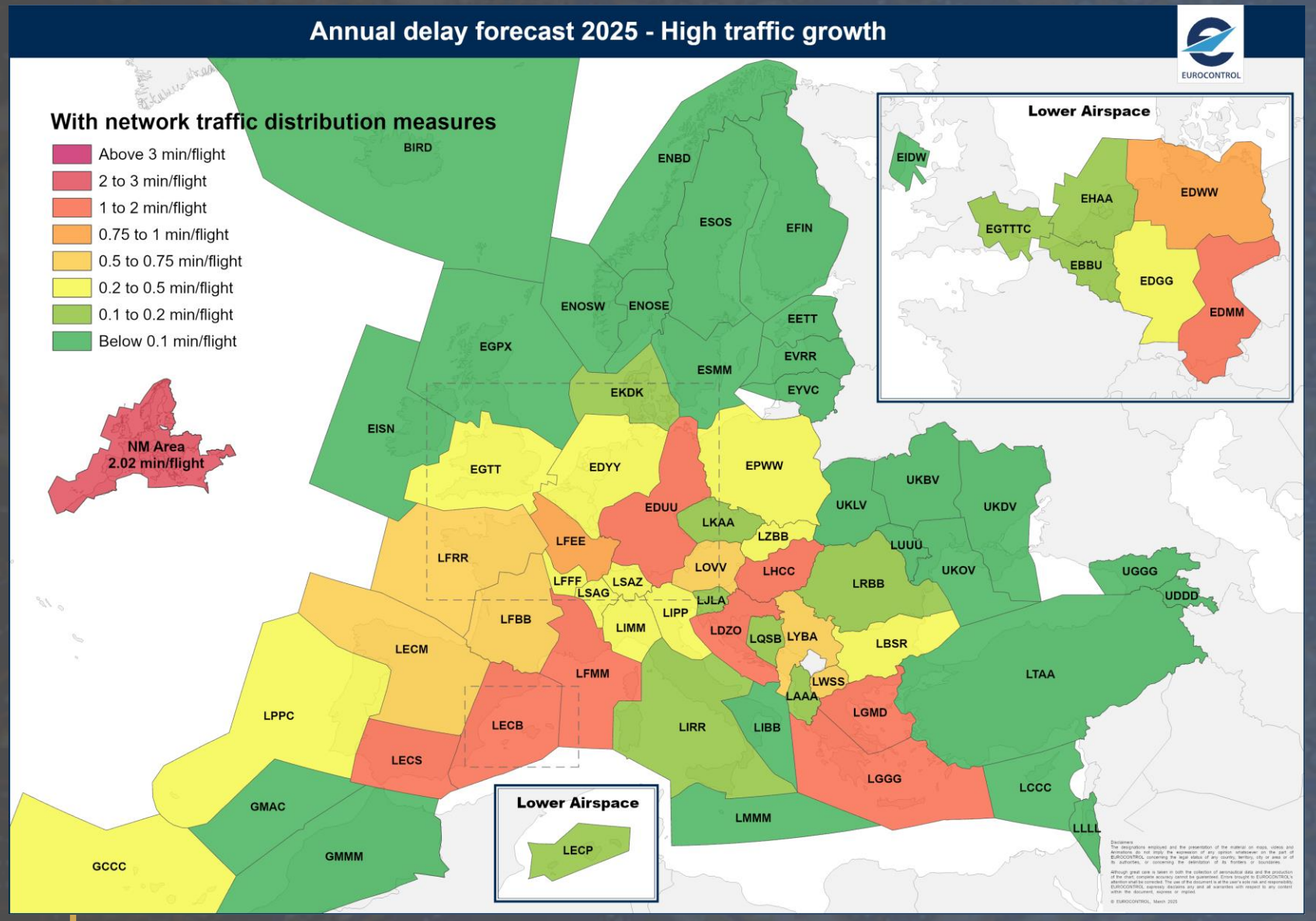
- Equivalent of 4.6 million minutes of delay or 260 million EUROs

Route distance reduced by 5.6 NM per flight compared to 2024

- Distances reduced by approx. 2.1 million NM
- 12600 tons of fuel, or 40000 tons of CO2, or 147 tons of Nox, or 10 million EUROs savings

Measures/traffic monitored during the summer for further adaptations

UPDATED Delay forecast 2025



Weather delay

Included at a statistical level of **0.49 min/flight** based on the period 2018 to 2024 (excluding 2020 and 2021).

NOT included

- effects of the daily activities of the NMOC aimed at delay reductions
- effects of the network orientated ATFM and weather-related measures

***Note**: Updates received following Summer 2025 Ad-Hoc NDOP on 18 February*
Upgrades of the capacity plans received for BULATSA, ENAIRE, DSNA, DFS, CCL and SMATSA
Upgrades pending for Hungarocontrol

Summer 2025 Network traffic distribution measures

Measures agreed on meeting on 20 February 2025

RAD publication - NMxxxx measures

Traffic evolution to be **monitored** through Rolling Seasonal NOP

Adaptation of measures if necessary depending on traffic evolution

Delay reattribution as a minimum for

Austrocontrol, Skeyes, BHANSA, BULATSA, ANS CR, MUAC, DSNA, HASP, ENAV, LVNL, MNAV, PANSA, NAV Portugal, ROMATSA, SMATSA, CCL, LPS, Slovenia Control, ENAIRE, skyguide, NATS

Thank you

ICAO 80