

# Functional Airspace Block Europe Central

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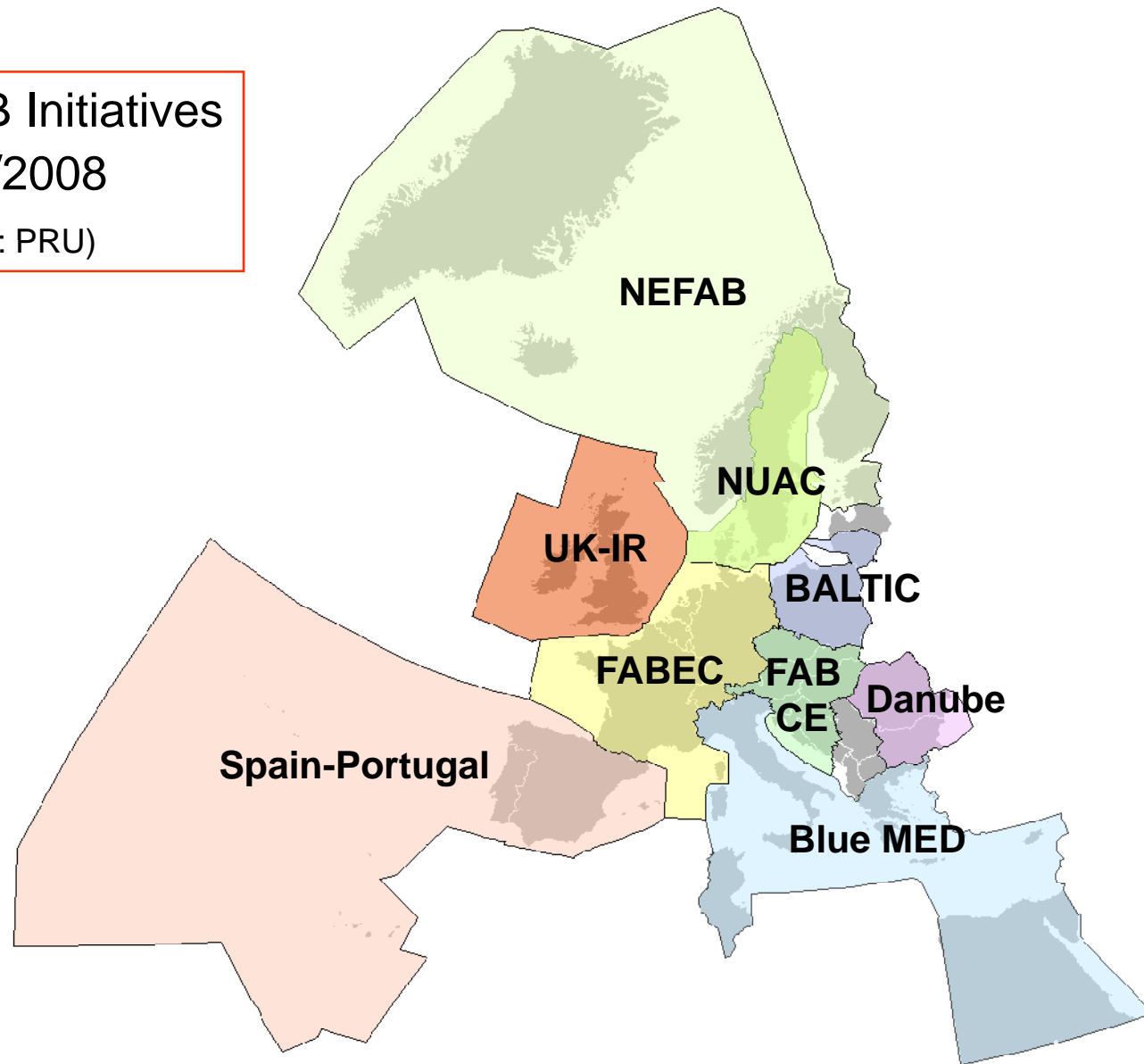
# SES Airspace regulation

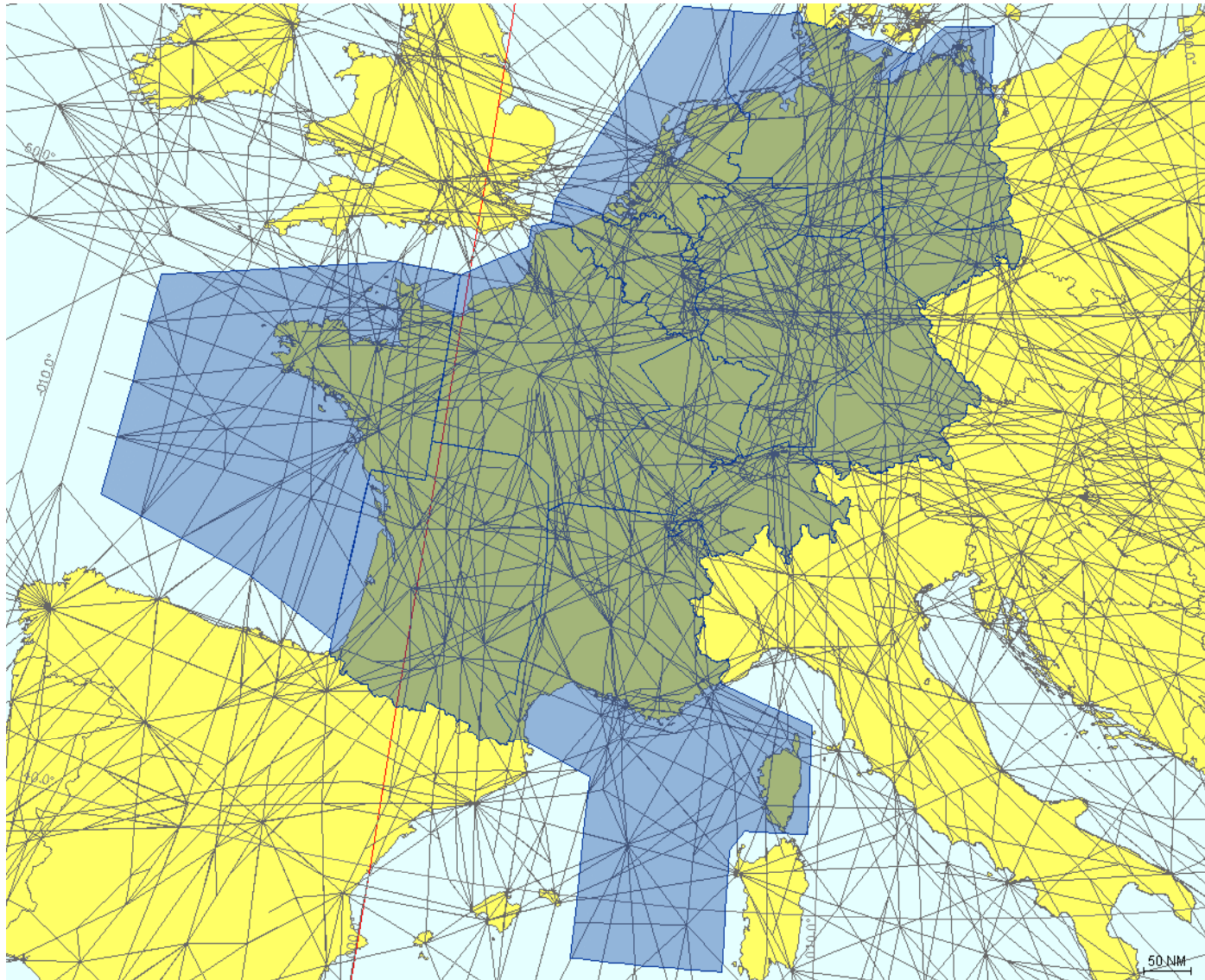
- **The upper airspace shall be reconfigured into functional airspace blocks**
- **The reconfiguration should be based on operational requirements regardless of existing boundaries**
- **FABs shall be established by States**
- **Main goal: defragmentation of European without affecting national sovereignty**
- **FABs shall**
  - Enable optimum use of the airspace
  - Be justified by a cost benefit analyses
  - Be supported by a safety case

**MAP of FAB Initiatives**

01/07/2008

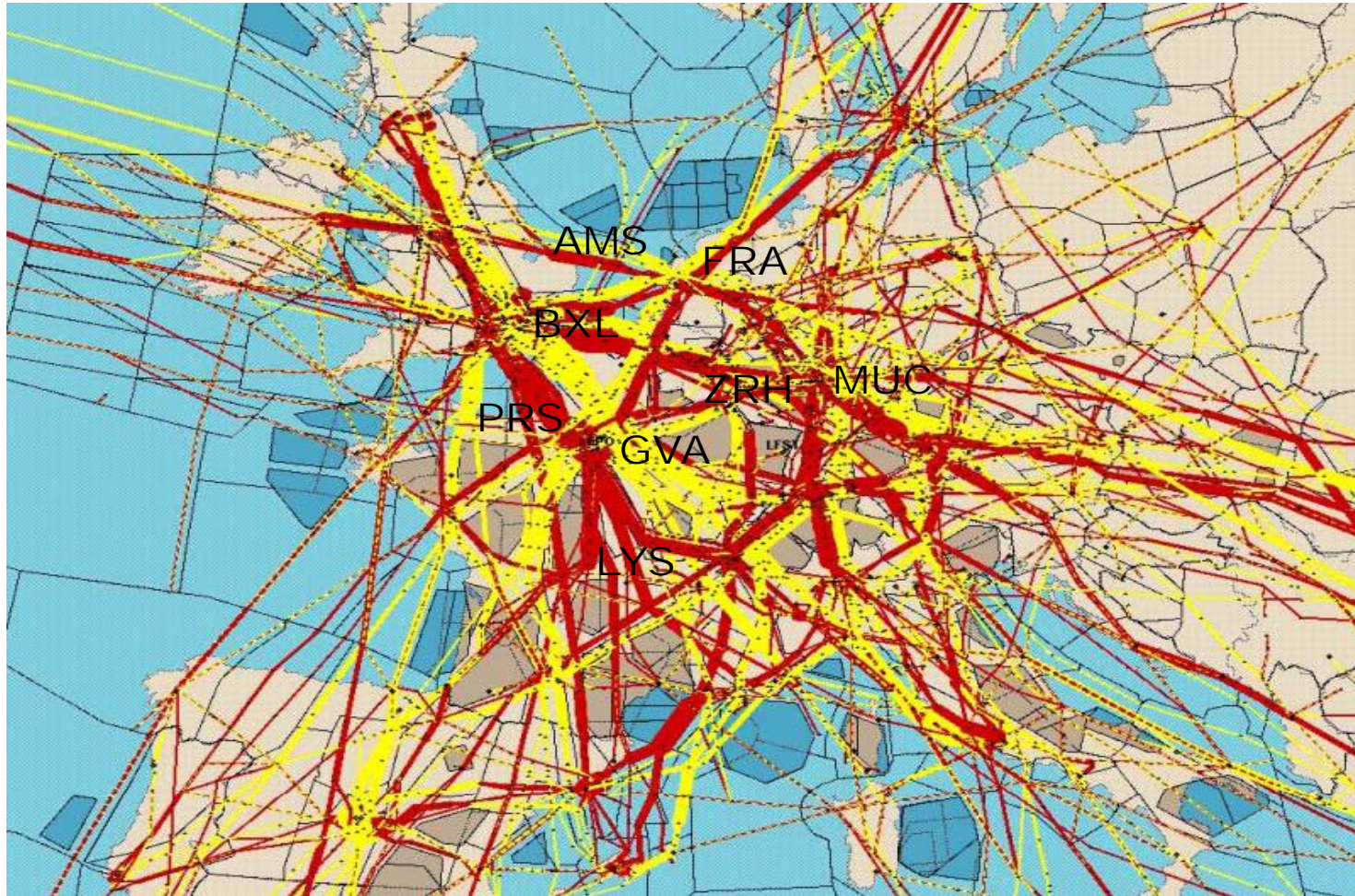
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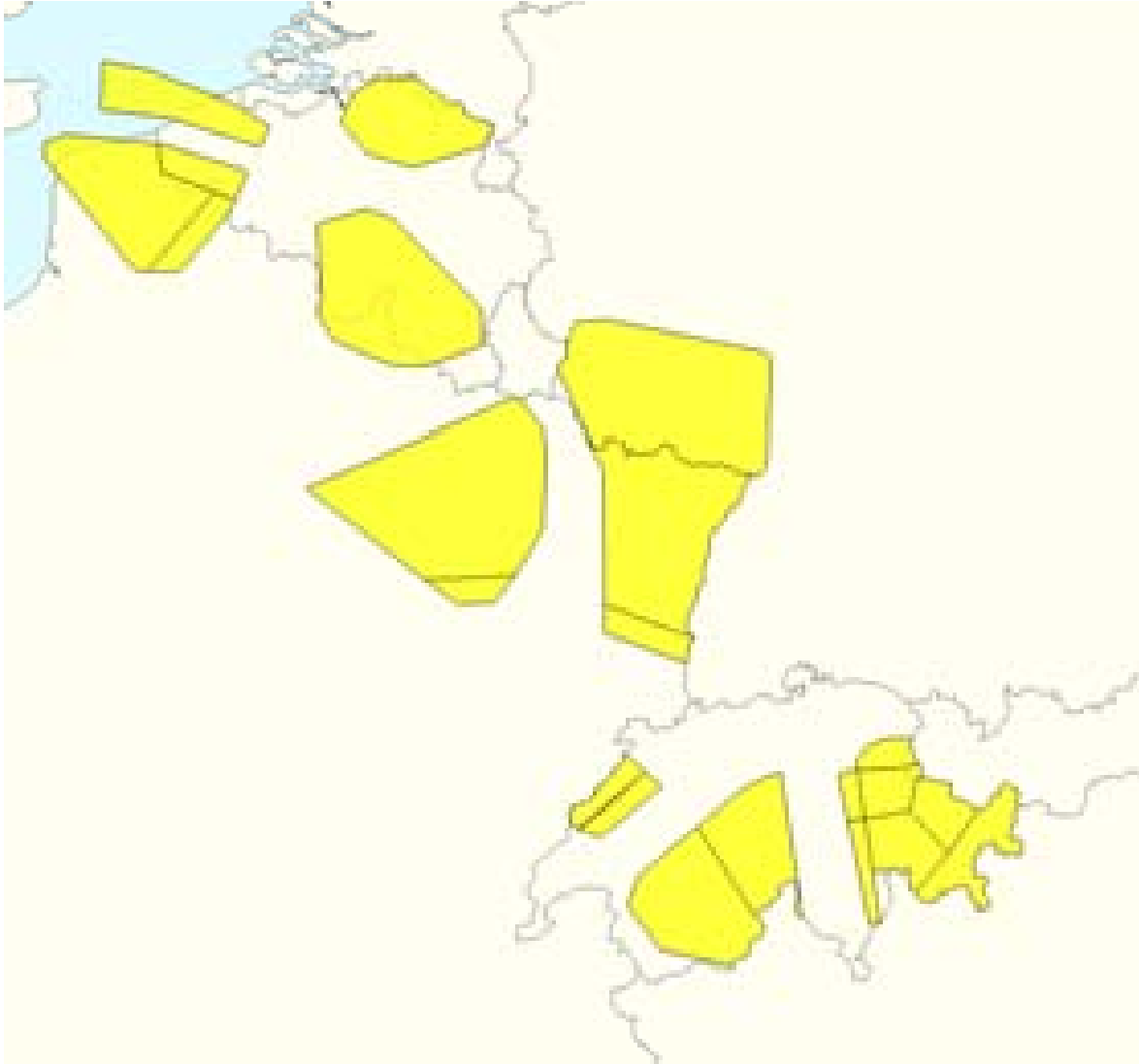




# FAB Europe Central:

- Core area of European airspace
- One of the world's highest traffic densities
- Several major airports in a small area
- Complex civ/mil airspace





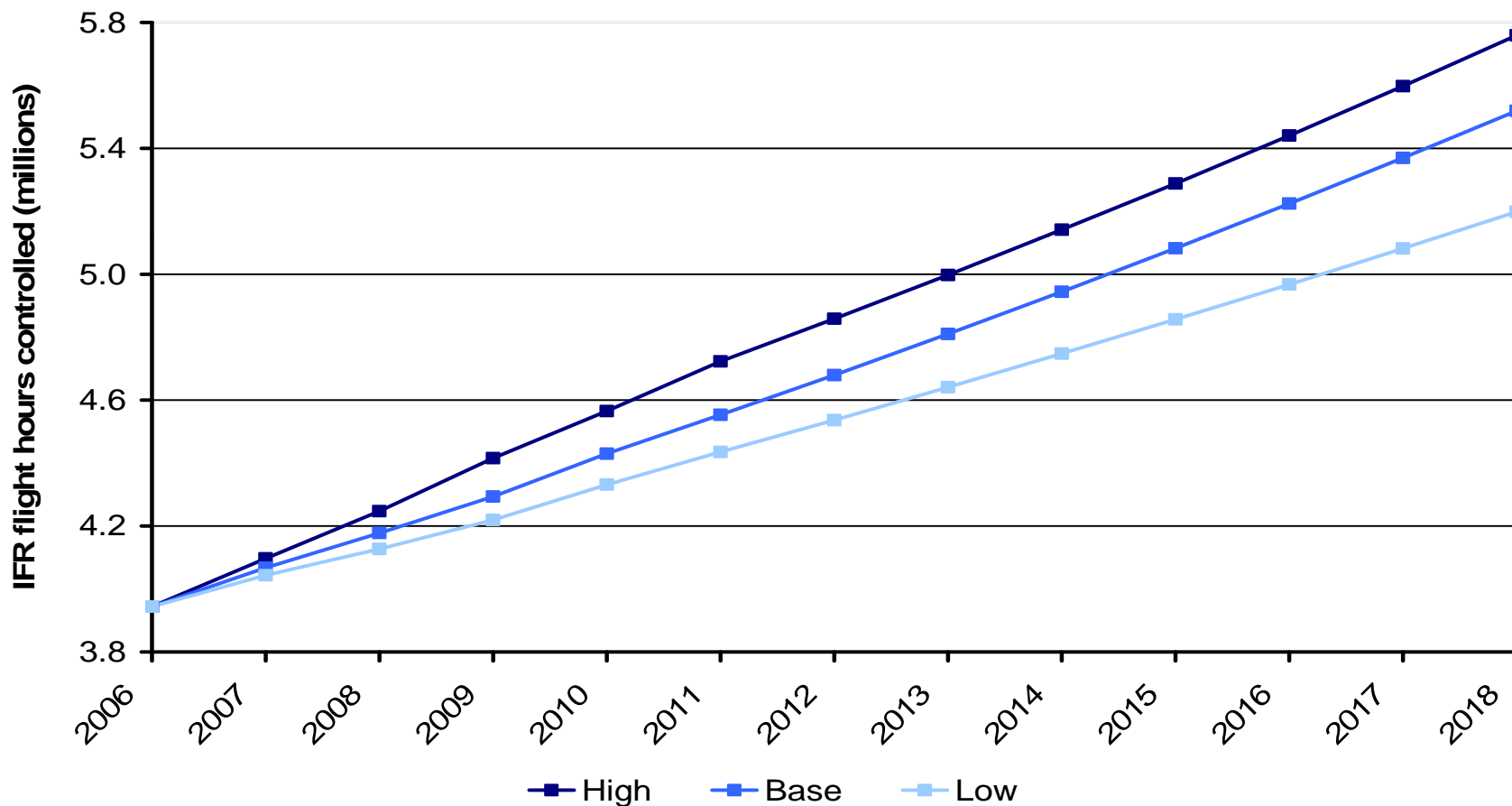


# FABEC share in 9 FAB initiatives

Area	17%
Flights	55%
Flight hours	37%
Costs	37%
ATCOs	36%



# FABEC Traffic forecast







# Feasibility study

- **6 States airspace**
  - Upper & lower
  - Civ & Mil airspace
  - Incl. TMAs main airports
  
- **Scope:**
  - Operations
  - Technical
  - Finance / CBA
  - HR
  - Institutional / Regulatory
  - Civ/Mil
  - Safety





# Feasibility Study

## Main improvement proposals (1)

<p><b>Common operational concept</b></p>	<ul style="list-style-type: none"> <li>▪ Enhanced FUA concept</li> <li>▪ Single ATFCM/ASM</li> <li>▪ Virtual single centre</li> <li>▪ Contingency</li> </ul>
<p><b>Airspace design</b></p>	<ul style="list-style-type: none"> <li>▪ Design irrespective of national borders</li> <li>▪ Hot spots</li> <li>▪ Optimized location of TSAs</li> <li>▪ Optimized route structure and flight profiles</li> </ul>
<p><b>Common technical systems</b></p>	<ul style="list-style-type: none"> <li>▪ Joint convergence roadmap</li> <li>▪ Incl. ATS, CNS and ATFCM systems</li> <li>▪ Optional: common technical services</li> </ul>
<p><b>Safety management</b></p>	<ul style="list-style-type: none"> <li>▪ Common SMS</li> <li>▪ Centralized Safety Management Office (target setting, performance monitoring and reporting)</li> </ul>



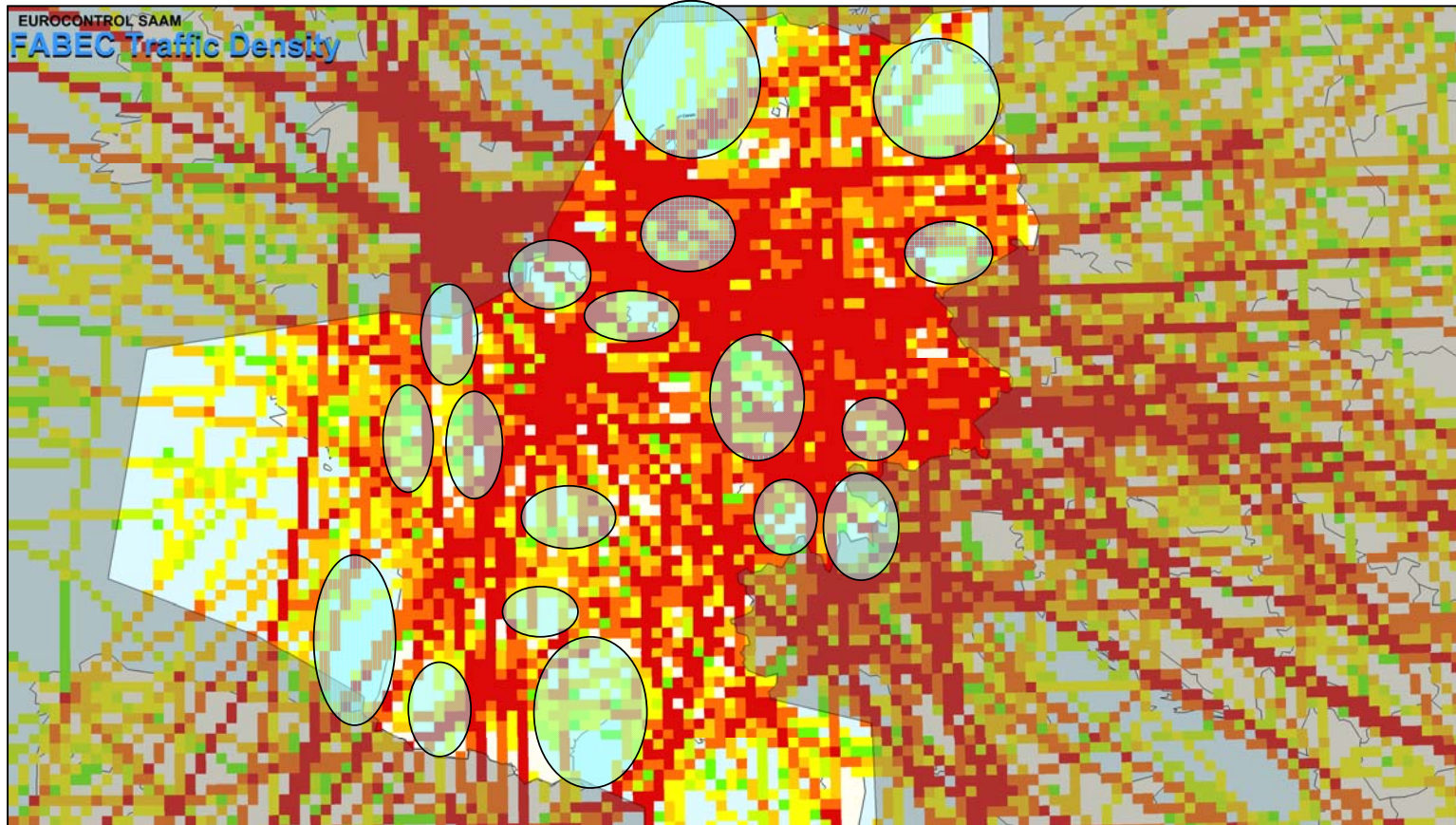
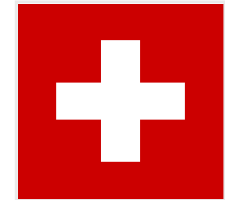
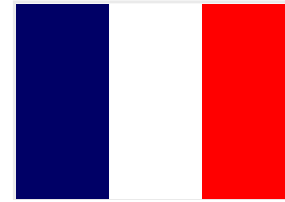


# Feasibility Study

## Main improvement proposals (2)

<p><b>Common charging scheme</b></p>	<ul style="list-style-type: none"> <li>▪ Single charging zone</li> <li>▪ Single cost base</li> <li>▪ Single en-route unit rate</li> </ul>
<p><b>Training cooperation</b></p>	<ul style="list-style-type: none"> <li>▪ Convergence to common ATCO training enabled by: Common operational concept Common technical systems &amp; services</li> <li>▪ Optional: single recruitment and training organization</li> </ul>
<p><b>Other opportunities</b></p>	<ul style="list-style-type: none"> <li>▪ MET cooperation</li> <li>▪ AIS cooperation</li> </ul>
<p><b>Enablers</b></p>	<ul style="list-style-type: none"> <li>▪ Institutional</li> <li>▪ Regulatory</li> </ul>







# FABEC performance indications

	<b>FABEC target (incl. reference case)</b>	<b>FABEC performance indication (CBA)</b>
Capacity	2018: Delay < 1 min/flight with demand +50%	2013: Delayed flights 10% → 3% Delayed flights average 12 min → 7 min  2018: Delay < 1 min/flight Delayed flights average 6 min
Cost efficiency	En-route unit cost – 17% by 2017 (max 25% total cost increase with 50% capacity increase)	17% target will be met. NPV (Net Profit Value): 2014 € 571 2020 € 3832 2025 €7300 – €13.300
Safety	No increase of absolute number of ANS-induced accidents and risk-bearing incidents	Safety indication study: target can be met with common SMS
Flight efficiency	Average route extension (ref. great circle) in 2006 was 48 km 2010 - 2 km 2018 -38 km	Deterioration in reference case. With FABEC -19 km in 2018 by: Airspace redesign Common technical systems Common charging scheme
Environment	Improvement of routes, flight profiles and distances flown	2018: - 139 kg fuel burn/flight estimated.
Military mission effectiveness	Improvement of military airspace use; No cancellation of missions due to ATFCM	Further study necessary

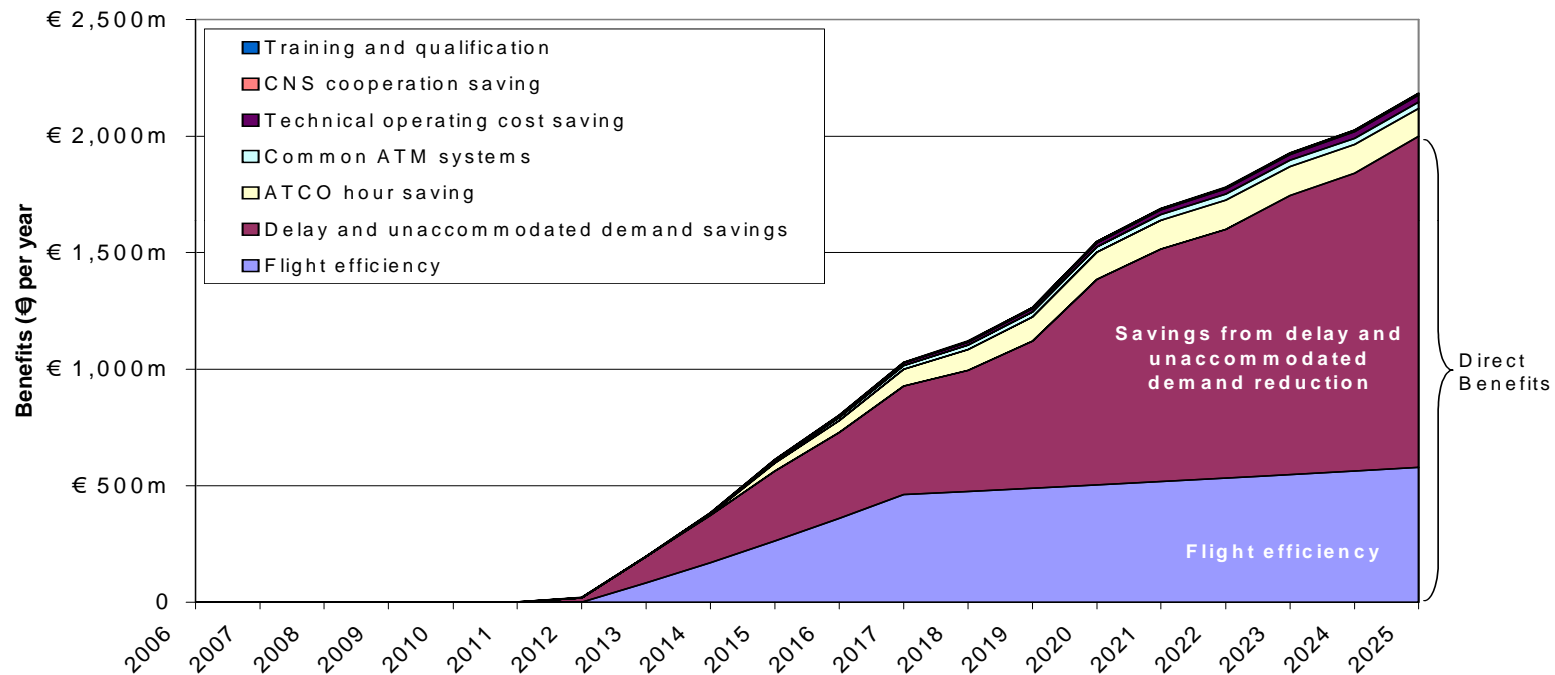


# Feasibility study Cost Benefit Analyses



# CBA Results

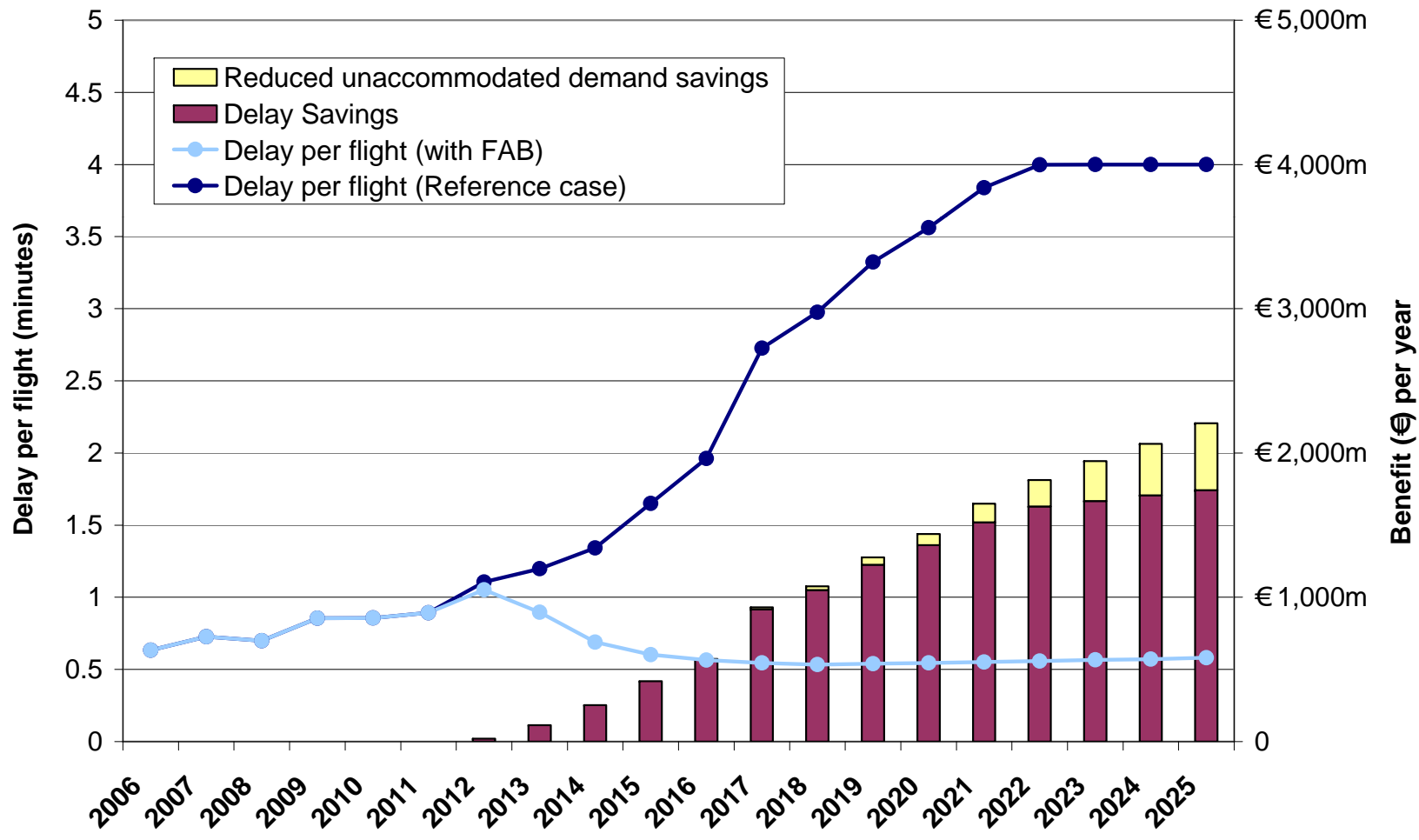
Direct users benefits:	2014: €376 m	2020: €3'147 m
NPV of ANSP cash flow:	€195 m	€ 685 m
Project NPV:	€571 m	€3'832 m



Significantly **growing benefits over time:**

- 2012-2015: FAB benefits are identified as better **QoS**
  - 2015+: larger proportion of **cost savings by ANSPs**
- > The financial cost-effectiveness **target is reached**

# Delay and unaccommodated demand







# Institutional development:

## States Agreement

## ANSPs Cooperation





# States Agreement





# States Agreement

## Scope:

- Establishment of the FAB (airspace boundaries)
- Arrangements for airspace management
- Cooperation between civil and military authorities
- Cooperation between national supervisory authorities
- States provisions for cooperation between ANSPs
- Joint designation of ANSPs
- Principles for cross border service provision:
  - ATS delegation principles
  - Liability regime
- Charging regime
- Regulatory Harmonization

## Governance bodies:

- FABEC Council (civil and military authorities)
- Airspace Committee
- Financial Committee
- Regulatory and Supervisory Committee





# ANSPs Cooperation



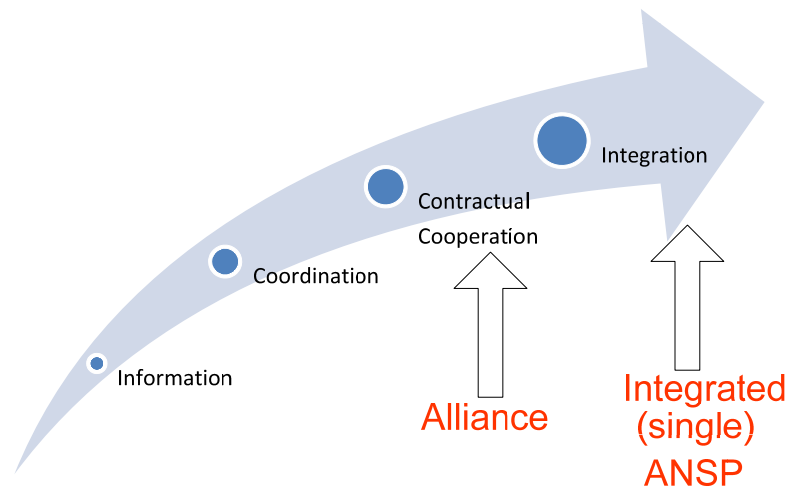


# ANSPs Cooperation

- **Progressively growing level of cooperation is necessary to implement the designed improvements:**
  - 2008 Alliance start up: Cooperation Contract
  - 2010 Alliance with central organization for better structured managerial and financial support
  - 2013 Alliance to enable establishment of integrated services
  - LT Single ANSP (optional)
- **Alternative: immediate choice for a Single ANSP**
  - Lengthy legislative process
  - Integration of ANSPs requires considerable convergence and standardisation process
  - Possible approach:
    - Alliance steps can be made during the legislative process
    - After legislative process transfer of ANSPs ownership to new organization



# Evolutionary cooperation development





# Options for common services

## Core business

- ATFCM/ASM function
- Technical support & maintenance services
- ATCO/ATSEP recruitment, training and qualification
- AIS

## Support

- Safety management
- System development
- Business planning
- Data services





# Legal aspects

- Civil ANSPs have different governance models with different levels of autonomy to establish joint services
  - State owned private law company
  - State Governmental directorate
  - International organization
  - Semi autonomous public organization
- MUAC position ?
- Public versus private law options
- Participation of mil ANSPs in private law options will be difficult
- States Agreement
  - Provisions necessary dependent of level and scope of integration/centralization
  - Single ANSP will require establishment of a States Treaty organization







# Current status

- Joint implementation program of States and ANSPs started Nov 08
- States signed a Declaration of Intent
- ANSPs Cooperation:
  - Contractual Cooperation (ANSP Agreement signed)
  - Study of further institutional steps
- Task Forces in place for:
  - Hot spots (early benefits in airspace design)
  - Improved city pairs
  - Night routes
  - ATFCM/ASM
  - Commonality in several technical systems
  - Training
  - Performance Management & Business planning
  - States Agreement
  - Liability regime
  - Common Charging regime
  - Cooperation of supervisory authorities





# FABEC & Single European Sky II package

## Acceleration in establishment of FABs

- Bottom-up approach maintained, but:
- Mandatory Deadline 2012
- Moved from Airspace regulation to service provision regulation
- Performance framework for ANS provision (2012)
  - FABs as a tool for performance improvement

## Performance framework

- Generic targets Community-wide
- Specific targets at National or FAB level 532
- Compliance supervision by NSAs
- EC Performance Review Body
- Incentives/sanctions scheme

