

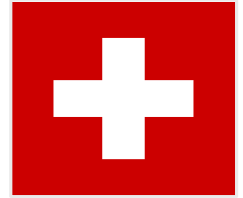
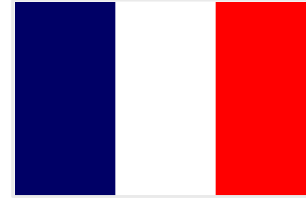
**FAB Europe Central**

**Cost-benefit Analysis**

**Round-Table Workshop on Financial Aspects**

**19 May 2008 – Airport Club Frankfurt**





# Methodology





## FAB EC – CBA methodology (external consultant Helios)

Standard CBA methodology was used to

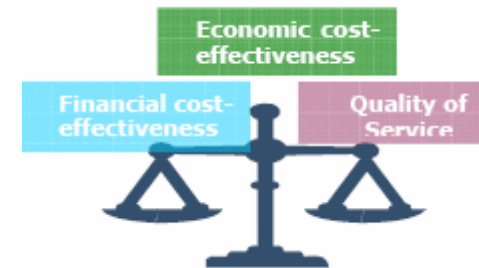
- define the scope and parameters;
- describe the reference case (the ‘without FAB’ case);
- identify the areas of improvement the project will bring about through discussions with working groups;
- assess, and where possible quantify, the impact of each of those areas of improvement on the full range of stakeholders identified;
- produce the CBA for the project as a whole;
- analyse the distribution of net benefits; and
- assess the impact on performance indicators.





# PRU methodology

An assessment of the overall performance of an ANSP should take into account all the areas related to the economics of ANS, i.e. not only financial cost-effectiveness but also the quality of service (QoS) provided, such as efficient routings and adequate levels of ATC capacity while ensuring ANS safety.



Trade-off between cost-effectiveness and quality of service





# PRU methodology

Benefits are split into categories:

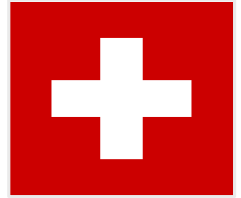
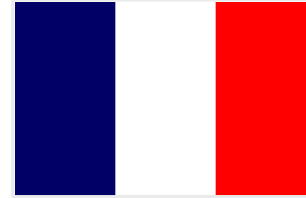
- Indirect benefits to users (cost reductions that will result in lower unit rates)
- Direct benefits, which are further broken down into flight efficiency benefits and delay savings

The direct benefits are difficult to assess and require modelling of the relationship between delay, demand and capacity. These models have drawn on the work of the performance analysis subgroup of the OPS WG, which consists of performance analysis experts, and detailed simulation modelling undertaken with respect to the with-FAB and without-FAB scenarios.

Alternative optimistic and pessimistic reference scenarios show how capacity - and hence delay - might change over the time horizon of the analysis in the absence of the FAB.

Delays and flight-efficiency benefits have been valued using the PRU's methodology.





# Reference case





## Reference case

The reference case ('without FAB' case) is a detailed description of how the costs and performance (traffic, capacity, delays, flight efficiency, investment, cost and performance indicators) associated with ANS provision will change over the time horizon of the analysis (2006 - 2025).

- Starting point: actual data 2000-2006
- Business plan and LCIP's 2007-2012
- ACE 2006





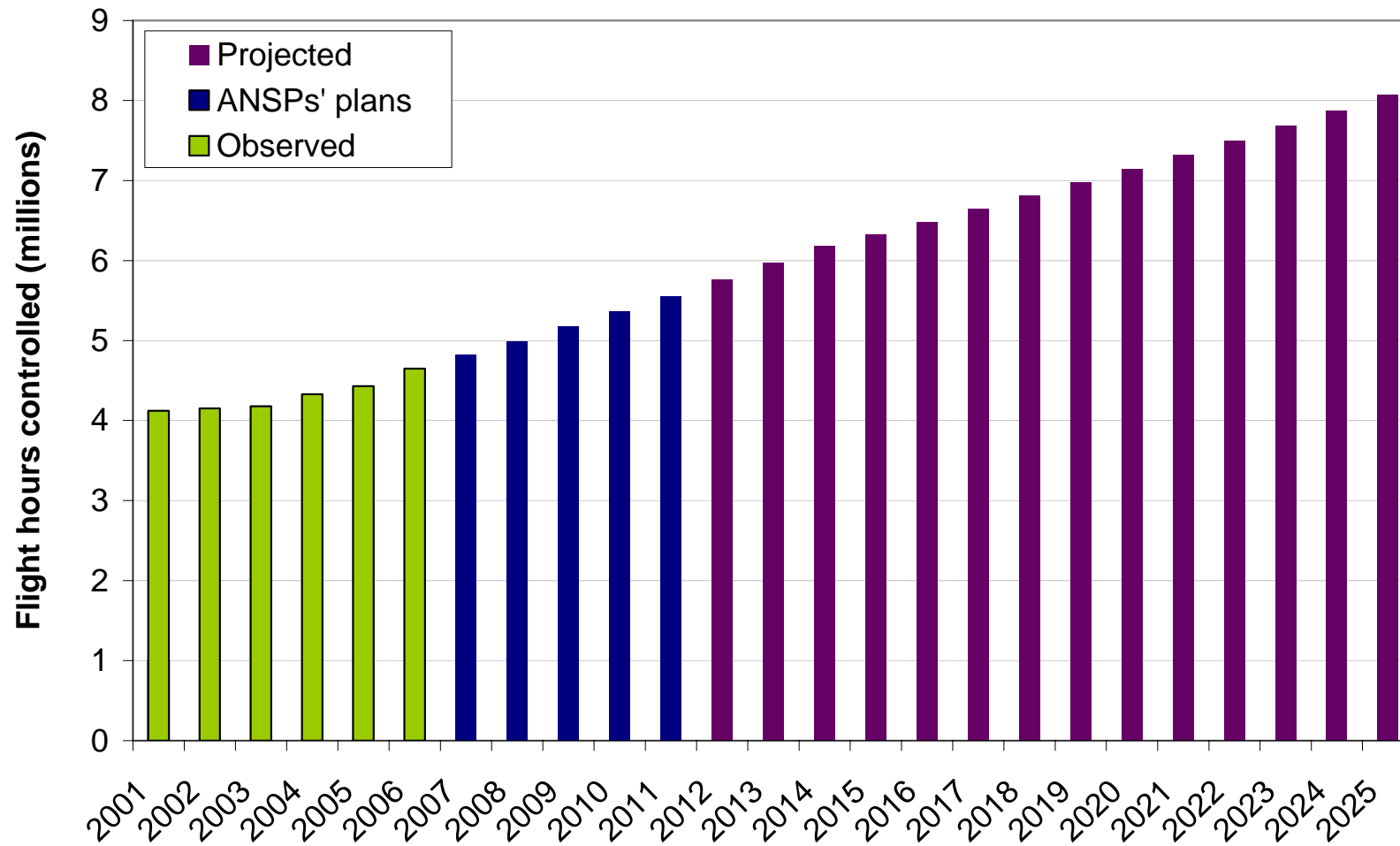
# Variables and assumptions

- Price base: constant 2006 prices
- Discount rate: 6% per year in real terms (including sensitivity tests)
- Performance indicators
  - en-route cost per flight hour
  - ATCO productivity at ACCs
  - flight-efficiency (percentage of actual km flown over great-circle distances within FAB EC airspace)
  - delay (ATFM delay per movement)
  - etc.
- MET, “regulatory” and Eurocontrol costs are not included



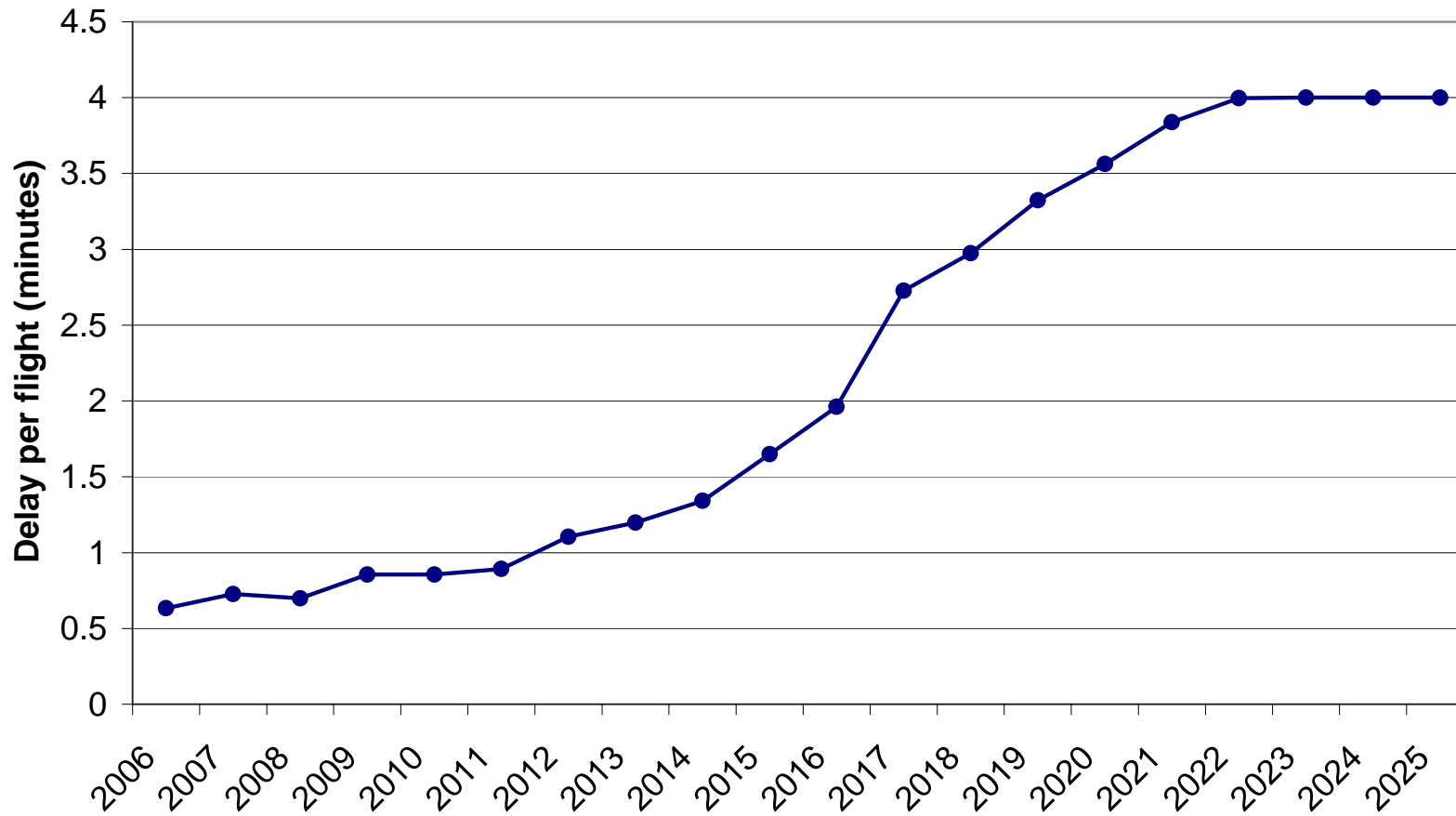


# Flight hours controlled – reference case



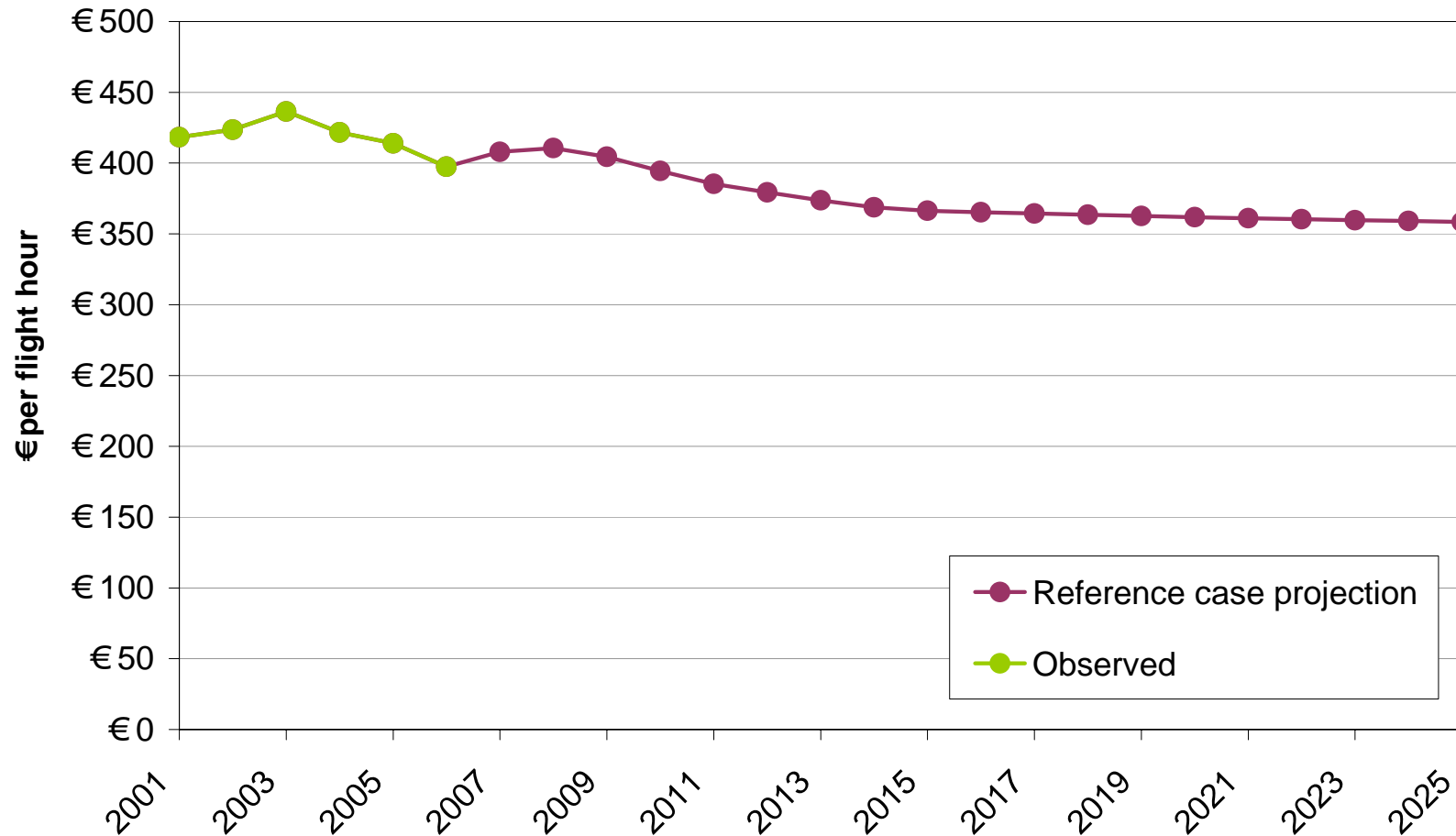


# Delay per flight – reference case





# En-route financial cost effectiveness – reference case

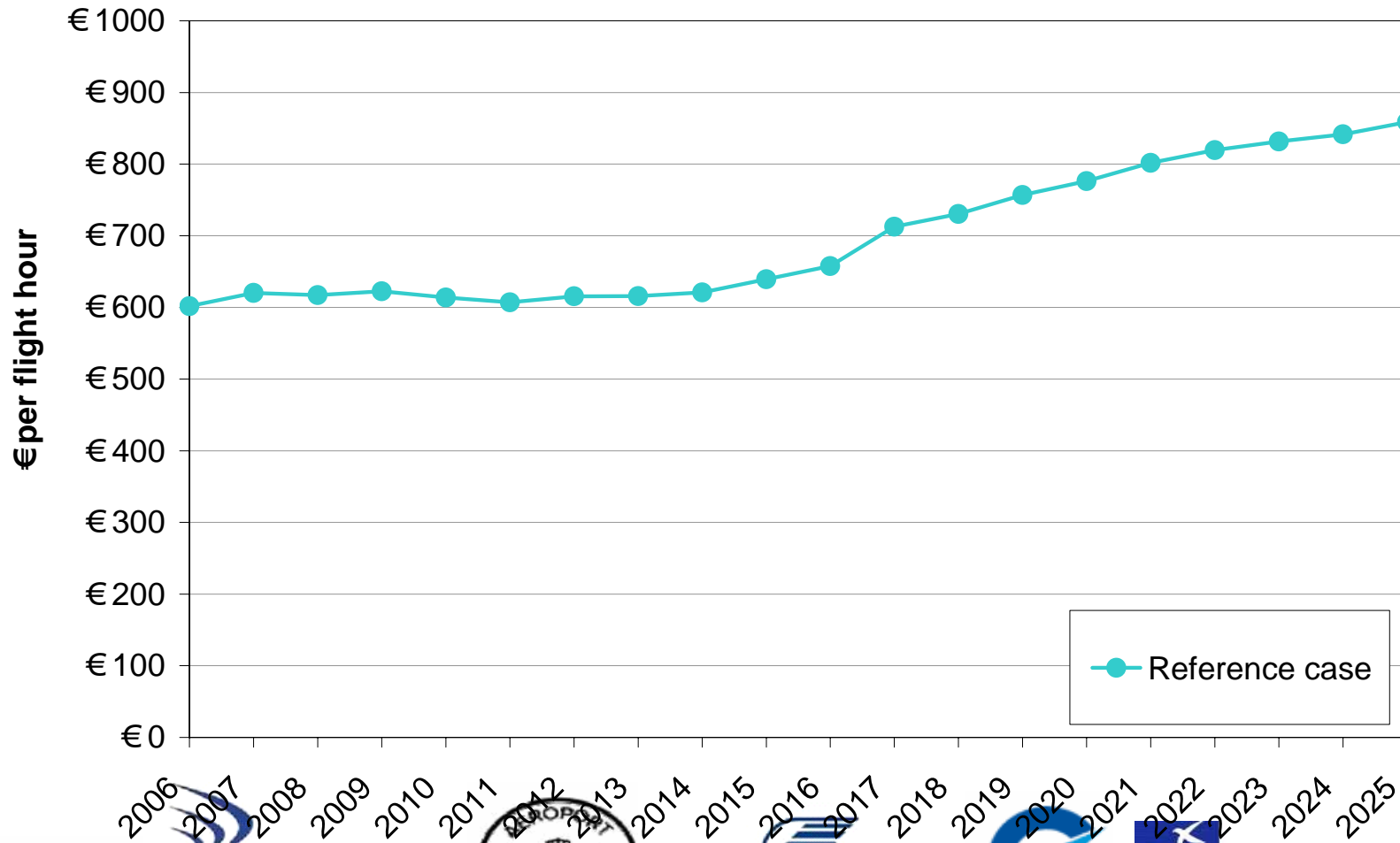


Luchtverkeersleiding Nederland  
Air Traffic Control the Netherlands





# En-route economic cost effectiveness – reference case



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Air Traffic Control the Netherlands



DFS Deutsche Flugsicherung



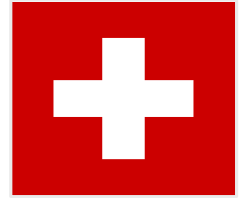
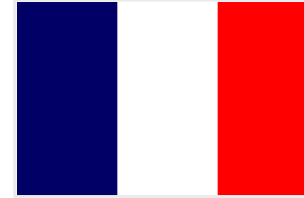


## Conclusion reference case

Reference case (= business as usual in the absence of enhanced cooperation in FAB EC area) indicates that the financial cost-effectiveness of the en-route service provision will improve in the medium term but stabilise in the long run. The quality of the service provided however will decline (more delays, less flight efficiency).

If one considers the cost of service provision and the quality of the service provided, the overall economic cost per flight hour for airspace users is expected to rise.





# Initiatives





# Initiatives

- Airspace design
- Operational concept
- Common FAB EC contingency planning
- AIS cooperation
- MET information integration
- Technical initiatives
- Common training and qualification





## FAB EC scenarios

- Three scenarios were identified for comparison with the reference case. However, only one – the alliance model – has been investigated in depth. The three scenarios were:
  - Contractual cooperation
  - Alliance model
  - Single ANSP
- Detailed discussions with the ANSPs showed that the contractual cooperation model and the alliance model yield essentially the same benefit. The main difference between the two is that the cooperation model has an increased level of risk, both in terms of delay to the development and implementation of initiatives and also potentially increased costs due to the delays. This increased risk has been described qualitatively, and has not been quantified.
- The single ANSP model has been analysed qualitatively. Detailed analysis would require further specification which has not been done yet.





## First trends

Figures are still under validation, but first trends show that:

- users will benefit the most in terms of flight efficiency and a reduction in delays
- during the next decades, the financial cost-effectiveness performance in the FAB EC area will increase constantly and in a sustainable way in terms of € per flight hour
- due to the FAB EC initiative the financial cost-effectiveness performance will further increase
- the proportion of cost savings will increase over time



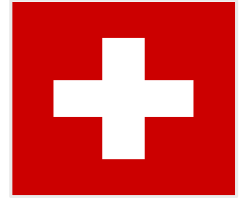
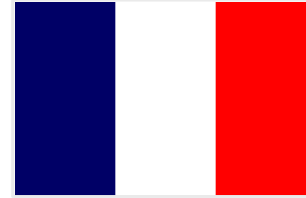


# Performance targets

The performance targets presented at the last Stakeholder Forum will be met.

- **Cost-effectiveness:**  
Within FAB EC, the expected 50% increase in civil traffic by 2018 shall not result in more than a 25% increase in total cost based on current rules of cost recovery (leading to a 17% reduction in the real en-route unit cost). On the military side, a decrease in ATM cost shall be realised.
- **Flight efficiency:**  
The FAB EC development shall significantly contribute to improving the flight efficiency by improvements of routes, flight profiles and distances flown. The target will be a reduction in the FAB EC area in the average route extension per flight of two kilometres per annum until 2010, increasing to an accumulated total of 10km by 2018.





# Charging



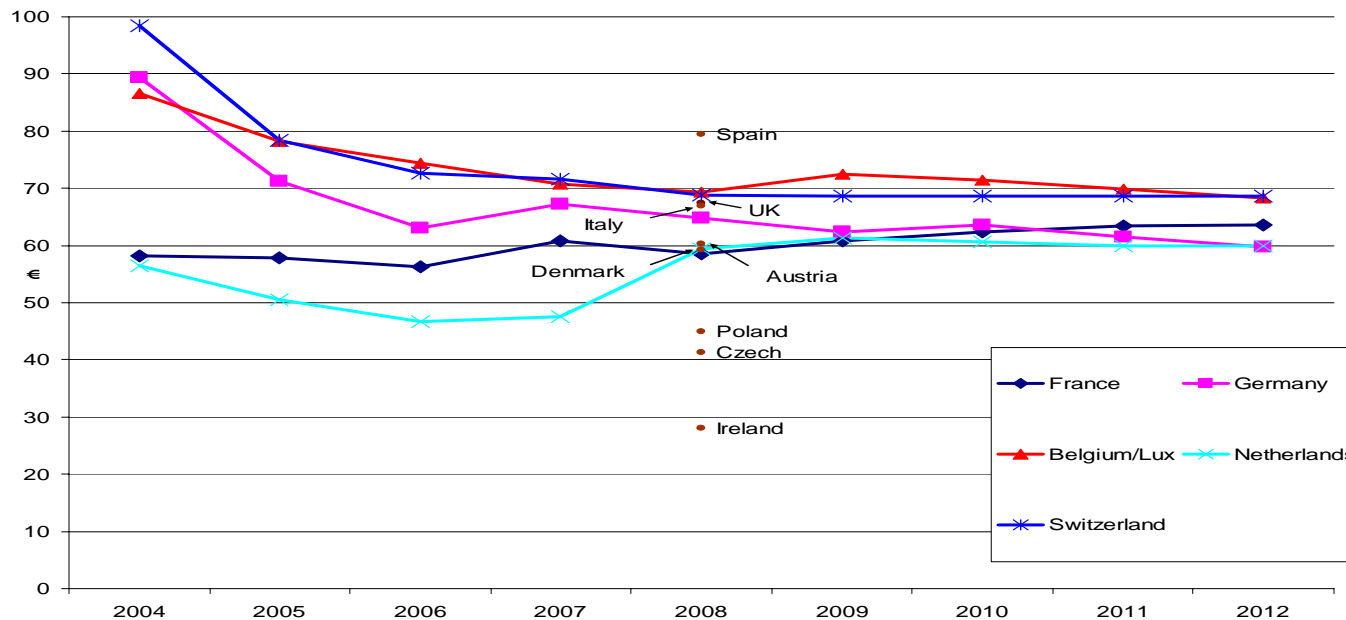


# Charging issue

Decisions on charging are the prerogative of states.

Nevertheless, the FABEC project recommends the establishment of a single charging zone, and a single en route unit rate

National unit rates





## The FAB EC Single en-route unit rate

- Is seen as an essential enabler for cooperation on improving capacity, airspace reconfiguration and improved flight efficiency in the FAB EC area.
- Cost base pooling and revenue sharing is regarded as vital: no “competition for traffic” should be allowed.





## The FAB EC Single en-route unit rate

- The implementation of the common FAB en-route unit rate will have a differential impact on users, favouring some and disadvantaging others. This could be unacceptable to some users and be an obstacle for implementation. If national unit rates would converge, however, it would solve this problem.
- It is therefore desirable that the observed & forecasted convergence of national unit rates will be realised and thus reduce the differential impact of the FAB charging regime for the users.





## The FAB EC Single en-route unit rate

- The Fin WG has developed two options for a metric of unit rate convergence:
  - The first one measures the difference between the national unit rates and the average unit rate weighted by the service units in each of the national charging zones.
  - The second metric measures the proportion of total user charges transferred from winners and losers.
- It is up to the States to decide on the workability of these metric.  
The implementation date for the FABEC single unit rate could be made dependant on a certain value of this convergence metric.





## The FAB EC Single en-route unit rate

- Effective management of a FAB EC charging regime with a common cost base and a single en-route unit rate requires a coordinated approach to cost control.
- This should be obtained through coordinated business and investment planning process to deal with major items, and a common cost management policy at ANSP level.





## States' view on this issue

- The State authorities intend to work towards defining a close coordination on the en-route charging scheme, that supports the use of the optimal possible routes for airlines.
- This work will also address the possibility of a single unit rate if this is shown to foster overall performance of FABEC, together with a convergence scheme based on agreed criteria.
- This work will be undertaken after the signature of a Declaration of Intent on the FAB EC by the State authorities, to take place in November, 2008.

