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Challenges of Growth 2013-2035

An Environmental Perspective

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October 2014

Summary

- CG13 overview
- Environment
  - In the methodology
  - In the inputs
  - In the 2035 forecast
  - Climate resilience
- Some gaps

Updating the ‘best-achievable’

2001 2004 2008 2013

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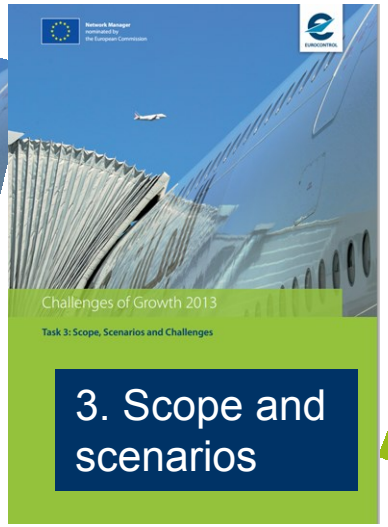
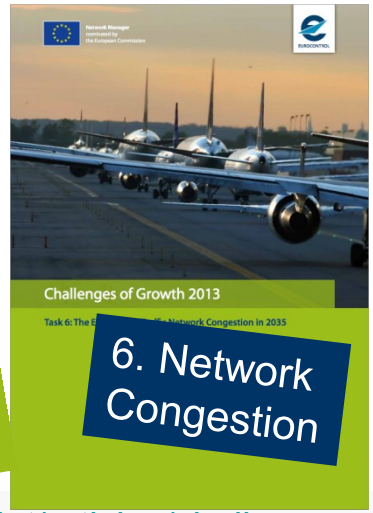
www.eurocontrol.int/articles/challenges-growth

Seven technical reports, and one Summary





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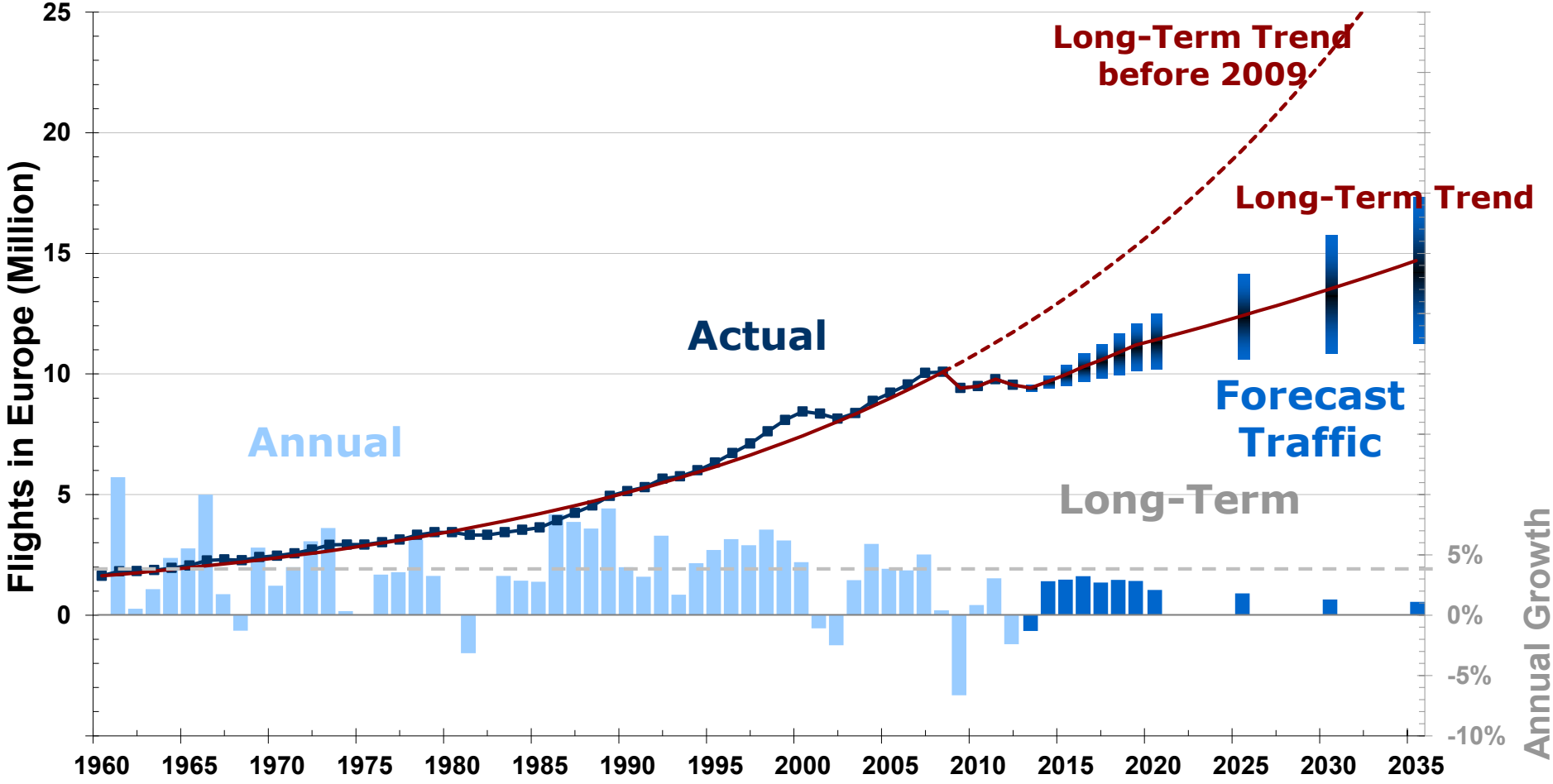
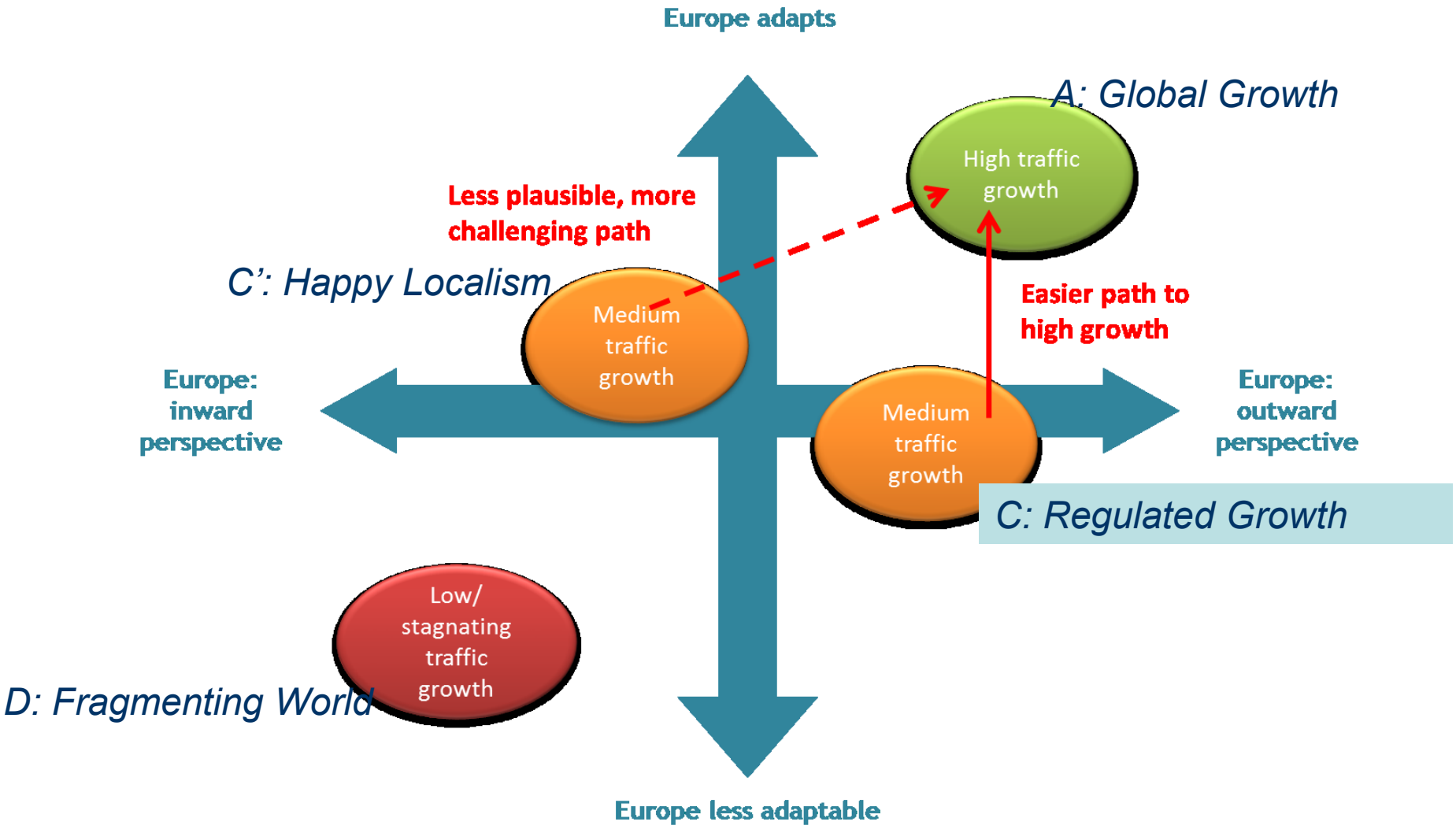
Introduction

- traffic did *not* follow the most-likely scenario of 2008 study
- revision of the forecasts

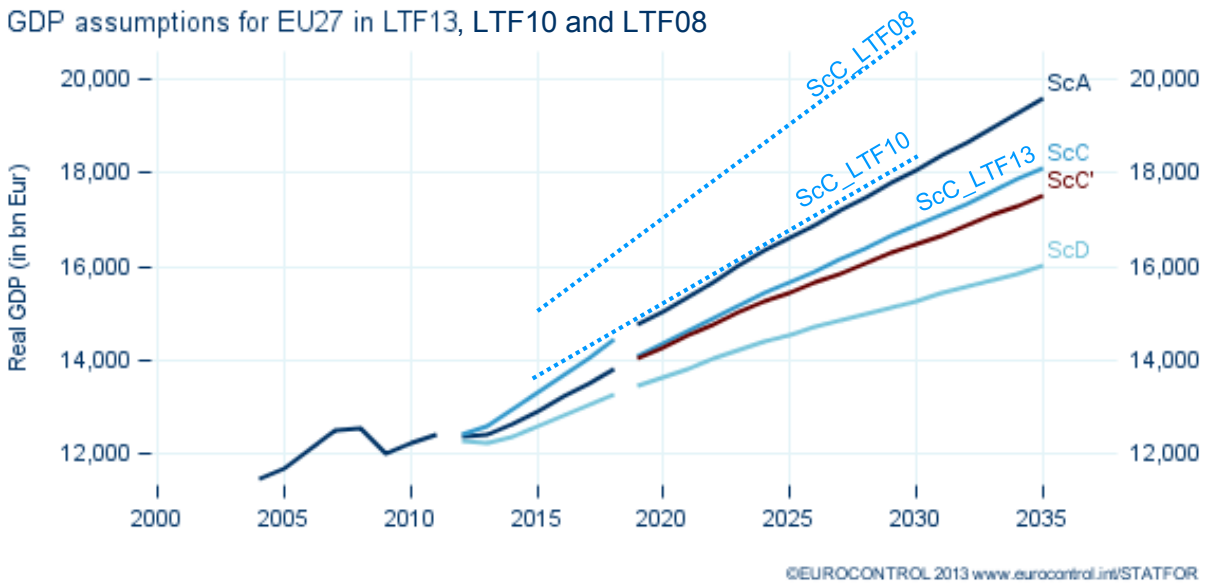


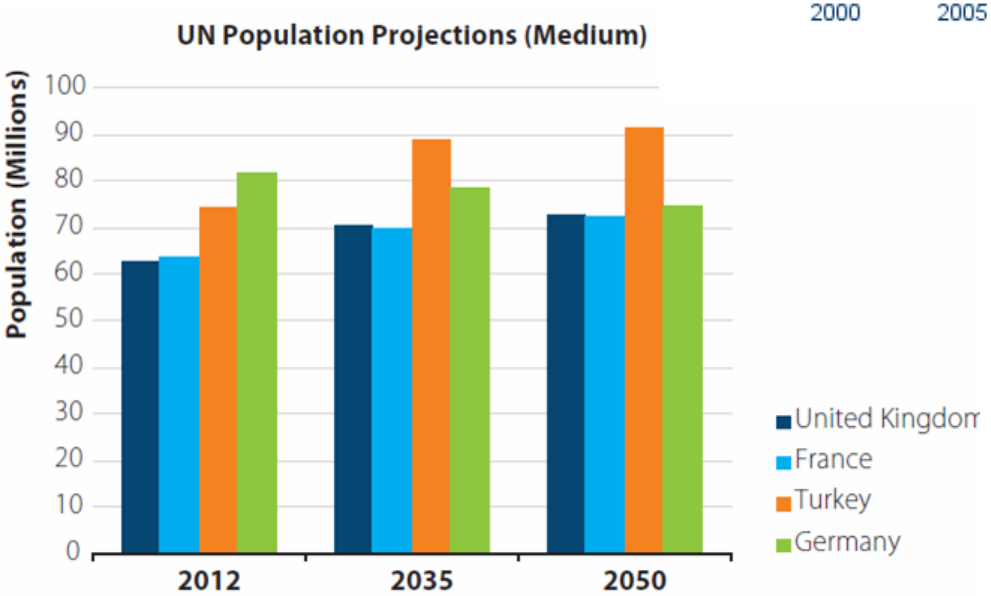
Four scenarios



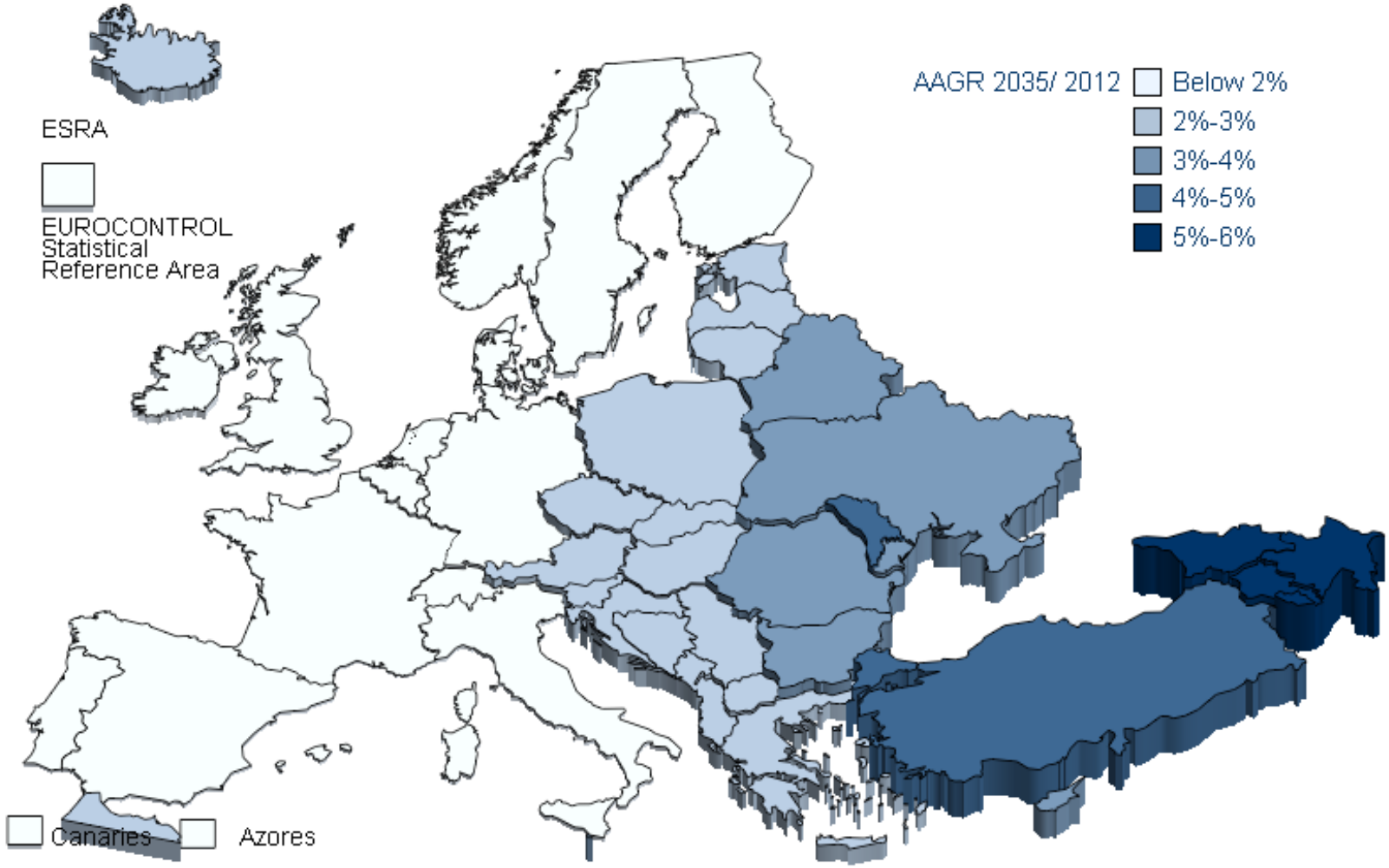
Assumptions (background to future demand)

- Economy,
- Demographics,
- Aircraft size,
- Hubbing,
- High-Speed Train,
- …

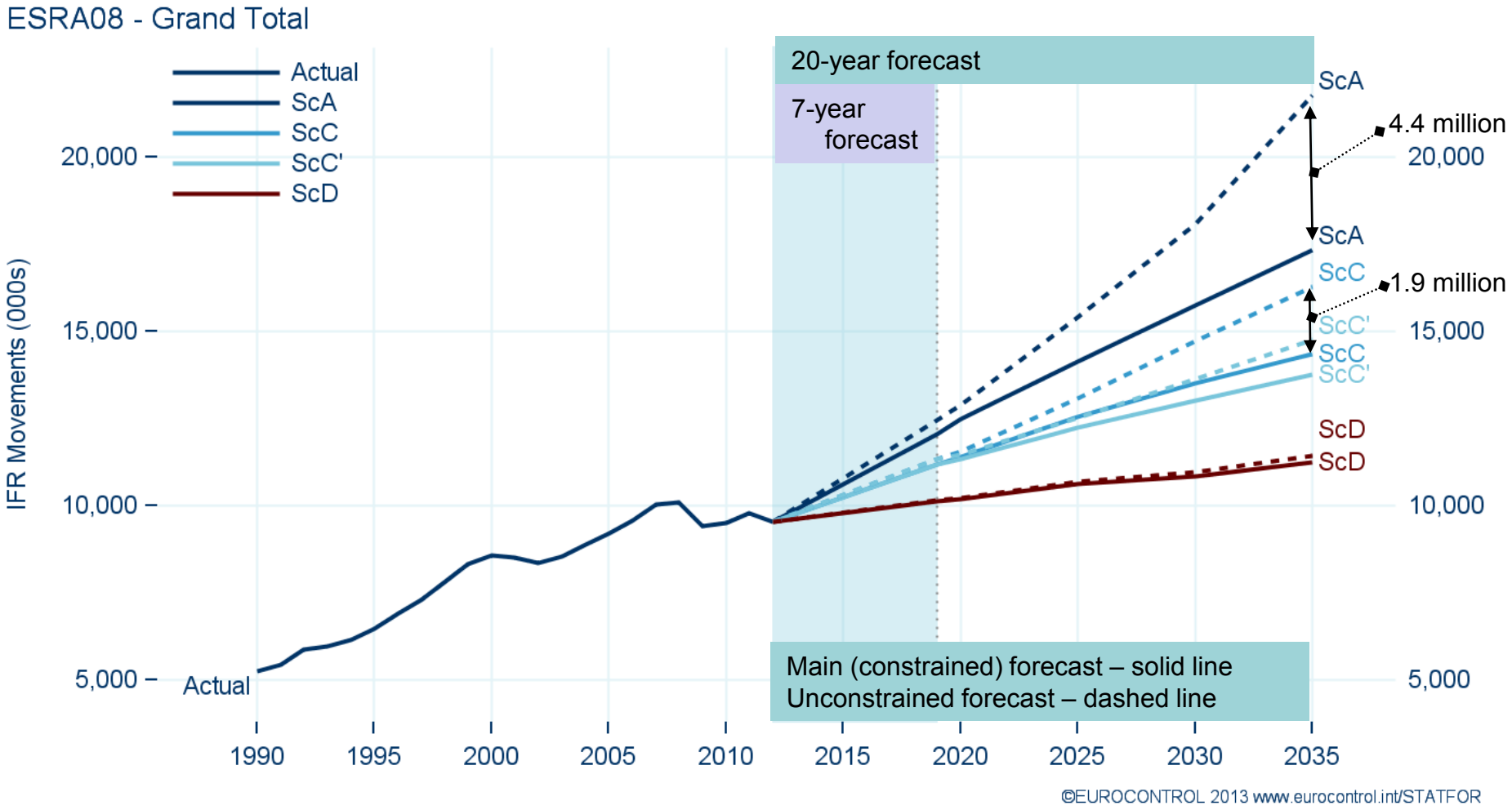




Growth stronger in Eastern Europe



Unconstrained demand exceeds capacity at airports



Five Major Challenges

- Deliver planned airport capacity and bridge the 1.9million flight gap
- Deliver network performance, with airport delays up by factor of 5
- Adapt to an era of slower growth perhaps half the historic rate
- Ensure sustainability of that growth, eg emissions will continue to grow
- Build resilience to climate change that will affect demand, infrastructure and day-to-day operations

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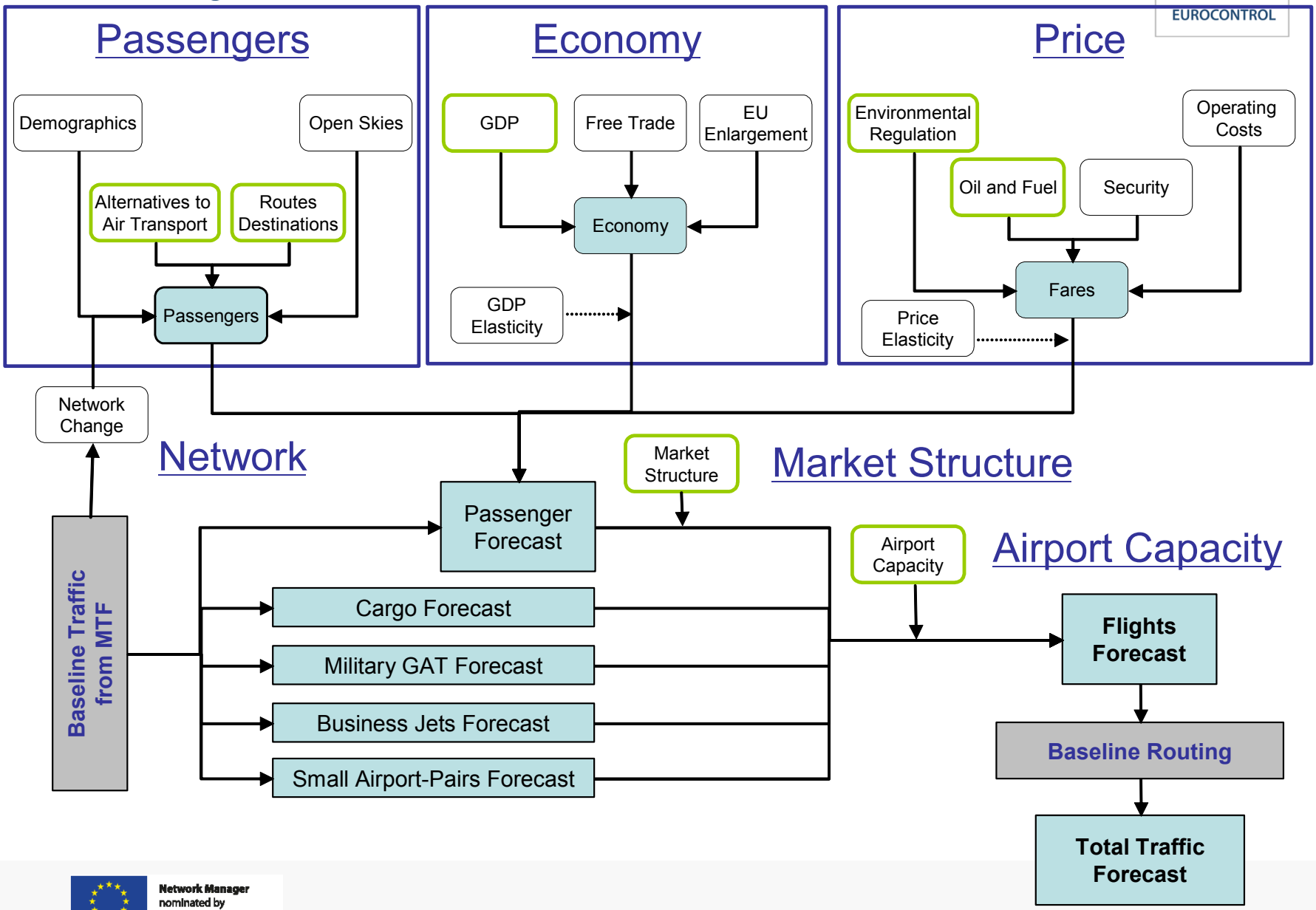
Environment in the Methodology & Inputs

Finding the environment in the forecast…



Airport Data Collection

- Questionnaire to airports. Consider:
  - ✓ Major infrastructure changes (airside and terminal)
  - ✓ Variations on peak / off peak hours, night capacities
  - ✓ Seasonal or weekly operations variations
  - ✓ Opening hours
  - ✓ ATS service provision
  - ✓ Environmental constraints
  - ✓ TMA changes
  - ✓ Intermodality plans (air-rail)
  - ✓ Transfer of traffic between airports
  - ✓ Political issues
  - ✓ And a number of other factors influencing demand and /or capacity plans

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Environment Issues 2035

Environmental Sustainabilty

- Technological and operational improvements continue to reduce relative environmental impact
- Challenging political targets and regulatory measures will drive sustainability

BUT

- Even with moderate traffic growth, overall impacts will increase (although may be considerably mitigated)
- High growth in emerging markets may incite new opposition

Achieving sustainable growth

- Technological and operational improvements essential to counteract growth

Global Impacts

- Absolute CO_2 emissions will continue to grow but at a slower rate than traffic
- Emissions per passenger km *may* decrease by up to 2% per year if fuel efficiency and traffic forecasts evolve as expected
- Development of competitively-priced low-carbon fuels and market-based measures also required
- Understanding of non-CO_2 impacts will improve
  - responses may involve trade-offs

Local Impacts

- Technological/operational improvements and noise certification will continue to reduce aircraft engine noise
- Improvements may be offset by traffic growth and evolving public perception
- More stringent regulatory measures, noise quotas & curfews: challenge to constrained capacity
- Appropriate land-use planning essential to constrain impacts
- Onset of annoyance at lower noise?
- Larger aircraft, new generation aircraft and procedural changes may alter noise distribution

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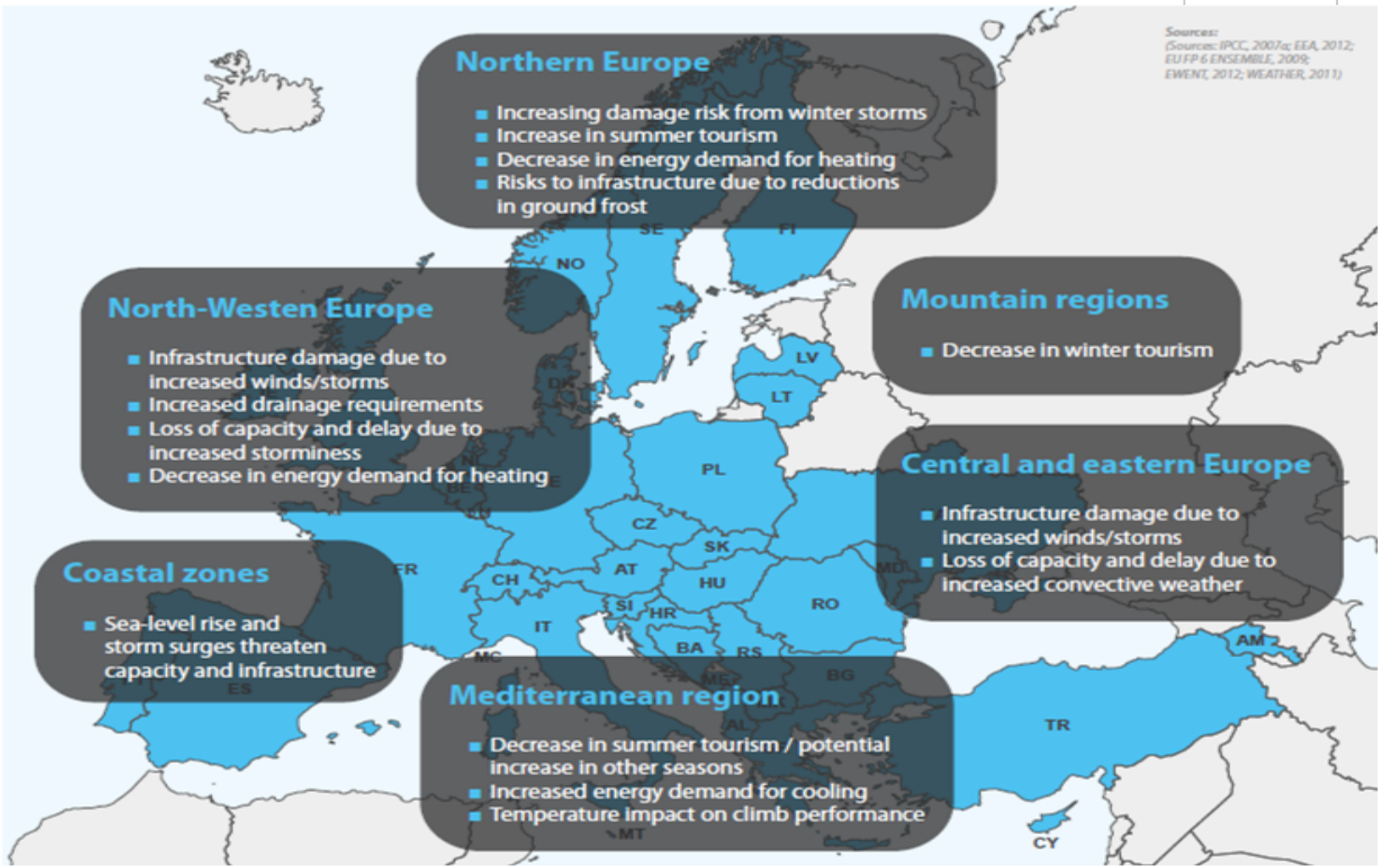
Challenges of Growth 2013

Climate Resilience:

Climate change is a threat. Early response could save money.

Challenge: Climate Resilience



Climate change will threaten infrastructure; impact day-to-day operations; change patterns of demand

Some organisations are taking action. ***But many are not***

Challenge: Climate Resilence

Solutions: integrate resilience to climate change as routine part of operational and business planning

- Identify risks and vulnerabilities (network and local)
- Identification/implementation of local and network resilience measures
- Build resilience into *current* infrastructure and operations planning.
- No-regrets measures (e.g. SESAR improvements)
- Cost-effective measures (e.g. training)
- Increased collaboration with MET (advanced forecasting techniques

Solutions not necessarily urgent or expensive but early action is cost-effective

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Finally

What isn't there?

- Some implications of regulations
  - Forthcoming ICAO
    - Chapter 14 noise standard
    - CO_2 engine standard
- Traffic stimulation through intermodality
- Route network effects of scenarios
- Some interactions, eg
  - Airport congestion (Task 6) has environmental impact
  - Mitigation (eg switch to larger aircraft) has environmental benefit