EUROCONTROL Long-Term Forecast

Flight Movements 2010 - 2030

EUROCONTROL

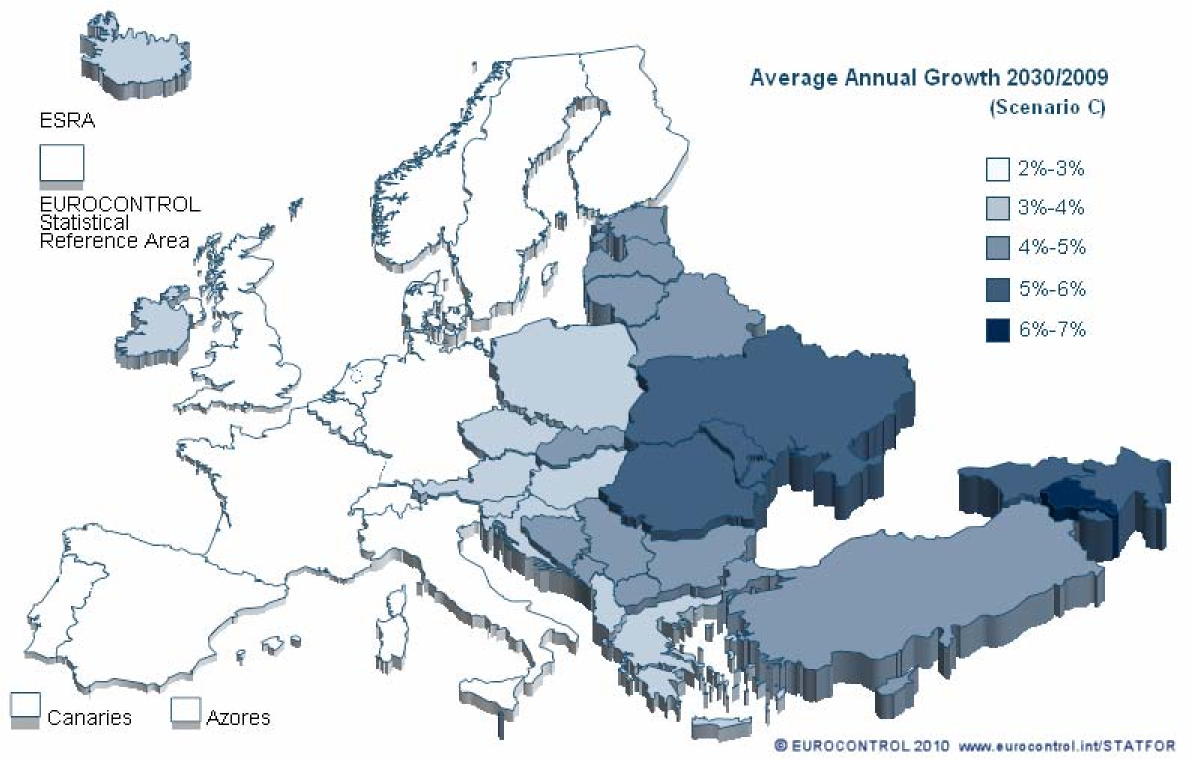
EXECUTIVE SUMMARY

This report presents the 2010 update of EUROCONTROL Long-Term Forecast of IFR flight movements in Europe up to 2030. It focuses on developments after 2016; traffic evolution between now and 2016 is discussed in the EUROCONTROL Medium-Term Forecast published in September 2010 (Ref.1). This forecast replaces the EUROCONTROL Long-Term Forecast issued in November 2008.

The forecast uses four scenarios to explore the future of the aviation and the risks that lie ahead: *A: Global Growth, C: Regulated Growth, D: Fragmenting World*, and *E: Resource Limits*. They produce different levels of traffic and follow different paths of growth according to their storylines and mix of characteristics factored into the forecast. Scenario C has been constructed as the 'most-likely' continuing in current trends, scenario E investigates the consequences of peak oil[1] on aviation.

In the 'most-likely' scenario C of the LTF10, there will be 16.9 million IFR movements in Europe[2] in 2030, 1.8 times more than in 2009. The range of the forecast scenarios is between 13.1 and 20.9 million flights in 2030, 1.4-2.2 times the traffic in 2009. The growth will average 1.6%-3.9% annually (2.8% in the 'most-likely'), it will be faster in the early years, stronger in Eastern Europe and for arrivals/departures to/from outside Europe than for intra-European flights.

Figure 1: Average annual growth (Scenario C: Regulated Growth, the 'Most-Likely')



[1] Peak Oil is defined as "the point in time when the maximum rate of global petroleum extraction is reached, after which the rate of production enters terminal decline".
[2] In Eurocontrol Statistical Reference Area (ESRA), see Annex B.1

Future air traffic will be limited by capacity at the airports, 0.7-5.0 million flights will not be accommodated in 2030, 5%-19% of the demand. The congestion is now lower than in the forecast two years ago. The recent drop in traffic has given the system some extra years to react and adapt but once the limits are reached the number of unaccommodated flights increases quickly. Congested airports create pressure on the flow of operations in the network and will exacerbate delays.

Even with airport capacity restrictions airports will grow. In 2030, there will be 13-34 airports as big as the top 7 are now. Some of the faster growing East-European airports will join the top 25. European hubs will be faced with competition from hubs outside Europe, primarily in the Middle-East.

Oil and fuel prices are expected to continue to grow and play an important role in airline economics. They are likely to push for an increase in costs of travel for passengers. Scenario *E: Resource Limits* explores a particularly difficult path for the aviation with peak in oil production reached in 2020.

For a number of reasons (more business opportunities in emerging economies, saturation of intra-European markets, green thinking and alternative modes of travel, etc.) passengers will travel on average farther in 2030 than they do now. They will also fly in larger aircraft, especially on long-haul. On short-haul, high speed train (HST) will continue to compete with the air transport. New or improved HST connections on some 40 city-pairs will decrease the demand for flights by a little over 0.5%, but the effect will be more significant locally.

The current forecast finishes by around 1.6-1.9 million flights below the LTF08. The previous LTF08 was prepared at the top of a cycle and was based on expectations of continuing strong growth in the medium-term. The drop in traffic in the last two years and slow recovery shifts the forecast traffic volumes back by about 5 years.

Figure 2. Summary of forecast for Europe.

	IFR Movements(000s)								Traffic Multiple 2030/ 2009
	2006	2007	2008	2009	2016	2020	2025	2030	
A: Global Growth	9,561	10,043	10,083	9,413	12,529	14,877	17,925	20,906	2.2
C: Regulated Growth	.	.	.	.	11,533	12,727	14,714	16,887	1.8
D: Fragmenting World	.	.	.	.	11,533	12,445	13,632	14,895	1.6
E: Resource Limits	.	.	.	.	11,533	12,950	11,389	13,142	1.4

	Average Annual Growth								AAGR 2030/ 2009
	2006	2007	2008	2009	2016/ 2010	2020/ 2016	2025 / 2021	2030/ 2026	
A: Global Growth	3.7%	5.0%	0.4%	-6.6%	4.2%	4.4%	3.8%	3.1%	3.9%
C: Regulated Growth	.	.	.	.	2.9%	2.5%	2.9%	2.8%	2.8%
D: Fragmenting World	.	.	.	.	2.9%	1.9%	1.8%	1.8%	2.2%
E: Resource Limits	.	.	.	.	2.9%	2.9%	-2.5%	2.9%	1.6%

With twenty years horizon the forecast is clearly prone to changes in economic, political and social conditions of the future World. Some of the risks have been addressed in the four scenarios of the LTF10 but there are many other factors that have the potential to change the aviation as we know it. Some of the major ones are discussed in section 2. Users are advised to consider these when using the forecast results.

EUROPEAN ORGANISATION
FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

EUROCONTROL Long-Term Forecast: IFR Flight Movements 2010-2030

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Abstract

This report presents the forecast of annual numbers of instrument flight rules (IFR) movements in Europe up to 2030. It has been prepared by the EUROCONTROL Statistics and Forecast Service (STATFOR) in 2010 and it replaces the Long-Term Forecast issued in November 2008.

The document outlines four scenarios for future air-traffic growth in Europe, discusses some major factors and summarises the main results. Traffic forecasts per State are provided in an Annex.

Keywords

STATFOR	Air Traffic	Forecast	Long-Term
Movements	Flight Movements	Trends	Traffic Flow
Scenarios	High Speed Rail	Fuel Price	Peak Oil

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List of Figures.

1. INTRODUCTION

1.1 General

This report presents the forecast of annual numbers of instrument flight rules (IFR) movements in Europe[3] up to 2030. It has been prepared by the EUROCONTROL Statistics and Forecast Service (STATFOR) in 2010 and it replaces the Long-Term Forecast issued in November 2008 (Ref.2). The EUROCONTROL Long-Term Forecast is normally updated every two years.

The report contains a summary of the forecast scenarios (section 3), and a discussion of the forecast results (section 4). The annexes give more detail on the forecast method (Annex A), geographical definitions (Annex B) and list the annual total forecasts per State (Annex D), and major flows in the ESRA (Annex C).

STATFOR also prepares a short-term forecast (2 years) and a medium-term forecast (7 years). Both are available in summary in the STATFOR web pages (Ref.3).

1.2 Summary of forecast method

The EUROCONTROL long-term forecast uses a model of economic and industry developments taking into account a number of factors influencing the future IFR traffic. It uses a set of four scenarios to explore specific paths leading to different traffic levels. It starts and continues from the latest MTF published in September 2010.

The EUROCONTROL long-term forecast (LTF) is developed by growing baseline traffic using a model of economic and industry developments, taking into account factors related to economic growth, passenger demand, prices, air network structure and fleet composition. Specific models are used to address passenger, cargo, military GAT, business aviation and infrequently-flown airport-pairs. Forecast arrivals and departures are constrained by annual airport capacities and total traffic per State is calculated assuming fixed routing as in the starting year (the end of the MTF). The LTF uses the last forecast year of the most recent medium-term forecast as the starting point and develops the forecast further into the future. This LTF starts from the MTF published in September 2010 (Ref.1).

The LTF uses scenarios to illustrate and explore possible developments for future aviation, each following a specific path of events leading to a different level of traffic. After consulting the STATFOR User Group, four scenarios have been developed for the LTF10: *A: Global Growth*, *C: Regulated Growth*, *D: Fragmenting World*, and *E: Resource Limits*. Scenario C has been constructed as the ‘most-likely’ continuing most-closely in the current trends. The LTF scenarios are detailed in section 3. More detail of the LTF method is given in Annex A.

[3] Unless otherwise stated, when referring to Europe or ESRA in this report we use the ESRA08 definition of Annex B.1

2. WHAT MIGHT FUTURE DEMAND BE LIKE?

There is growth to come over the next twenty years of aviation but it may look quite different from what we have been used to. The long-term forecast challenges our pre-conceptions of 'business as usual scenario'.

Two years ago in the long-term forecast (Ref 2, section 2) we observed that "There is plenty of potential for further growth of air traffic in Europe. But the demand is not homogenous and the traffic growth will not be uniform." Since then we have seen the biggest decline in traffic on record: 6% fewer flights in Europe in 2009 than in 2008, but those observations remains true: for most, there is growth to come, but each market segment will be different, long-haul different from short-haul, and each part of Europe different from the other. This time, in introducing the new long-term forecast we focus on a different deviation from uniformity: between the past and the future.

It can be too easy to imagine that future air traffic will be rather like the past, only with more of it.

This, in a nutshell, is the 'business as usual scenario'. One role of a long-term forecast is to challenge the assumptions and pre-conceptions underlying such a scenario. Different decision-makers may indeed have different views about what 'business as usual' means (one of the reasons we have stopped using the term). The scenarios of a long-term forecast are there to provide not just a quantitative foundation for thinking about a baseline case, but also to inform a discussion of **risks**. The long-term forecast is above all about helping decision-makers to understand the risks: what might happen, and will our plans work if so?

Some fundamentals will remain with us: IFR flights will still be about moving people and goods safely, efficiently, cost-effectively and with minimum impact on the environment. Aviation will still be an economic catalyst for business, for tourism, and for manufacturing industry. Aviation will still deliver social connectivity and security – bringing families, friends and States together. If these fundamentals, the "why?" of aviation, are immutable then the "when?", "what?", "where?", "how?" and "how much?" are all up for change.

This is a twenty-year forecast. Twenty years ago, to give just a few examples: the deregulation of aviation in Europe was a work-in-progress (1992 milestone yet to come); Ryanair (in 1990) had just abandoned business class in the process of becoming low-cost; the Baltic States were taking steps towards independence (1990-1991); Tim Berners-Lee had just kicked off the world wide web (1989); London/Heathrow had 50% more flights than Paris/Charles de Gaulle (1991), not 10% fewer (2010 to date); the first Al Qaeda attack on the World Trade Center in New York was three years in the future (1993).

So what are the factors that have the potential to be far bigger in the next 20 years than ever they did in the last?

- **Regulation** is returning. After the recent banking failures, in which too little regulation played its part, more is to be expected. Not the piecemeal regulation of prices and market access that was the theme of the regulations un-wound in the 1990s, nor regulation that is entirely new: noise chapters have been with us for some time, but now the pace of environmental regulation is accelerating (CO_2 of course, from 2012, but then CO_2 standards, NO_x, contrails,…); and competition regulators are increasingly showing their teeth.

- Indeed, **costs** will be under scrutiny as never before, because the debts incurred during the recent financial crisis will reduce many a European government's ability to invest in infrastructure projects or subsidise their transport system through public-service obligation routes or otherwise.
- In this, air traffic management is a relatively small part, but the regulations related to the Single European Sky will fundamentally change the **value chain**, with the sharing of cost-risk and with the business trajectory putting more power in the hands of the aircraft operator. This has the potential to change operators' profitability, but also business models.
- **Co-modality**, whether competition or collaboration between modes, has certainly had significant local effects so far and more is in the pipeline. However, for reasons already discussed, further high-speed rail infrastructure is likely to come more slowly.
- On the forecasts we use, **China overtakes the US** in terms of total GDP before 2030. As well as its geopolitical implications, this will be accompanied by changes to the flows of the World economy: of raw materials, finished goods, and finance. Just as global transport re-configured for globalisation, so it will re-configure again for sinicisation[4] – or should that be BRIC-isation[5]?
- In terms of air traffic growth, **Europe will be in the slow lane**, with the Middle-East and China growing much more rapidly. The rapid growth of short-haul, low-cost in the last twenty years has changed passengers' expectations of short-haul aviation, and hence affected all carriers' short-haul models. Perhaps the competition from the Middle-East in long-haul will have a similar transformational power.
- The **climate is changing**. How it will change is increasingly becoming clear, more uncertain is when (Ref.4). After discussions with the STATFOR User Group, for this forecast we have assumed that the major impacts of this lie largely beyond 2030, but they are definitely risks for the later years of the forecast: the threats to the infrastructure and to daily operations, the changed travel patterns as Summer temperatures rise and skiing availability changes, the economic challenges of droughts.
- **Oil prices and supply** are well explored in the scenarios of the forecast, including a new scenario looking at the economic and aviation impacts of dwindling supplies. We have seen no incontrovertible evidence for or against a near-term peaking of oil; but it at least seems a possibility that must now be quantitatively assessed.
- The economic crisis has provided an additional opportunity for governments to address what has long been identified: the sustainability, or rather unsustainability, of pension provisions. In many European countries there will be **older pensioners, and poorer**. In fact, the effects of this could be a higher propensity to fly on average, since those of working age fly more often.
- For short-haul flights, it might seem that every new European airline in the last ten years has trumpeted its low-cost credentials. The **transformational business model** of the next twenty years may be with us already, or yet to appear. Perhaps long-haul low cost, or the multi-national alliance, air taxi, or the co-modal firm?

[4] Sinic ≈ Chinese
[5] BRIC: Brazil, Russia, India and China.

- Transport remains a target for terrorists and the '**hassle factor**' of security checks which has been talked about so much since 2001 has, if anything, become even more an issue with a growing perception of the intrusiveness of the data and physical checks. This could blend back into the accepted background again, but it could also turn into a disincentive for travel to some destinations.

3. FOUR SCENARIOS FOR THE FUTURE

The LTF uses a set of four scenarios to explore the future of the aviation: *A: Global Growth*, *C: Regulated Growth*, *D: Fragmenting World*, and *E: Resource Limits*. Each scenario has a specific storyline and a mix of characteristics following a particular path in the future with the aim to improve our understanding of factors of future traffic growth and the risks that lie ahead. Scenario C has been constructed as the 'most-likely' continuing in current trends, scenario E looks the effects of peak oil on aviation.

Looking twenty years ahead, the World we live in may change in many ways and it is virtually impossible to predict all of the factors, events, decisions and actions that will form it. Our understanding of the global system dependencies and dynamics can never be perfect and, perhaps even more importantly, it is limited by our current experience and knowledge. To overcome this pitfall, the LTF uses scenarios to explore various possible ways in which the future might evolve.

In contrast to medium-term (MTF) and short-term forecasts (STF) which develop a central forecast as a base scenario and an interval around with bounds referred to as high and low scenarios, the LTF scenarios are individual qualitatively-different representations of the many possible futures. Rather than creating an interval that is likely to cover the number of future flights, they each follow a specific path of events and developments that corresponds to the forecast traffic. What the LTF aims at is not providing the exact future traffic counts but it is more the understanding the factors that will form the future air traffic and the risks that lie ahead. None of the scenarios will actually become true in 2030. In reality, the future number of flights will be the result of the actual realisation of the various factors and will be nearer to some of the LTF scenarios than some others. Nevertheless, the LTF scenarios represent a range of likely outcomes that should be appropriate for planning and managing risk and that will be updated as the years pass.

The last long-term forecast LTF08 (Ref.2) used the following four scenarios largely based on previous versions of the LTF: *A: Global Growth, B: Business as Usual, C: Regulation & Growth, D: Fragmenting World*. The scenarios drew on the work done for CONSAVE[6], ACARE[7] and the IPCC[8] but they have been adapted to reflect the then views on likely future developments in aviation. Scenario C, in particular, was redefined to focus more on environmental challenges and constraints of the aviation industry and the World in general. Scenario *A: Global Growth* and *C: Regulation & Growth* were further used as the 'most-challenging' and 'most-likely' (respectively) scenarios in the Challenges of Growth 2008 study (Ref.5).

For this LTF, the scenarios have been again revisited and after discussion with the STATFOR User Group it has been decided to drop scenario B as no longer corresponding to what is now seen as 'business as usual' and to introduce a new scenario E investigating the consequences of the possibility of reaching the peak in oil production. Scenario *C: Regulated Growth* has been constructed as the 'most-likely' of the four, most closely following the current trends. The four LTF10 scenarios are:

- Scenario **A: Global Growth (Technological Growth)**: Strong economic growth in an increasingly globalised World, with technology used successfully to mitigate

[6] http://www.dlr.de/consave/
[7] http://www.acare4europe.org/
[8] http://www.ipcc.ch/

the effects of sustainability challenges such as the environment or resource availability.

- Scenario **C: Regulated Growth (Most-Likely)**: Moderate economic growth, with regulation reconciling the environmental, social and economic demands to address the growing global sustainability concerns.
- Scenario **D: Fragmenting World**: A World of increasing tensions between regions, with more security threats, reduced trade and transport integration and knock-on effects of weaker economies.
- Scenario **E: Resource Limits (Peak Oil)**: Strongly growing economies focusing on short-term gains rather than long-term sustainability are not able to react and adapt quickly when faced with unexpected persistent oil supply deficiency after a production peak in 2020.

The general 'storylines' above are further elaborated and translated into quantitative terms to serve as input assumptions in the LTF model. A summary of the main characteristics is shown in Figure 3, full details are given in the LTF Scenarios Document (Ref.6). Some of the more important ones are:

GDP growth for 2017-2030 in EU27 averages 2.2% p.a. in scenario C. It is 0.5 p.p higher in scenario A and 0.5 p.p lower in scenario D. Scenario E has similar growth as scenario C up until the peak in oil production in 2020. With industries very much depending on oil and not able to adapt fast the economic growth drops (average 0.6% p.a. in 2021-2026. It takes several years to decouple the economic growth from the growth in oil supply and for the economic recovery to start again (average 1.8% p.a. in 2027-2030).

Oil prices steadily grow in scenarios A and C reaching around $130/barrel (in 2008$) by 2030. Due to higher refining margins in scenario C the kerosene prices increase somewhat faster and therefore have somewhat stronger effect on raise in fares when these costs are passed onto passengers. Uncertainty about the stability of oil production in scenario D results in speculation and high price volatility in the markets. In the model, this is captured by persistently high oil prices starting at around $150/barrel in 2016 climbing to around $200/barrel in 2030. Scenario E sees a peak in oil production in 2020 followed by a shock and spike in oil prices which move from $110/barrel in 2020 to $270/barrel in 2025. After the industries adapt (and partly also as the economies slow down) the prices slowly decline to around $220/barrel in 2030.

Environmental regulation reflects the costs of EU Emission Trading Scheme for the airlines. As per current legislative proposals, the cap on historical emissions shall be reduced to 90% and 100% of the allocations shall be auctioned by 2020[9]. Scenario C sees the strongest regulation with highest CO_2 prices (around €90/tonne CO_2 in 2030). Scenarios D and E have weaker environmental regulation partly in negligence of the global long-term sustainability issues and partly due to slower economic growth (around €60/tonne CO_2 in 2030). In scenario A the technology has successfully moved towards less carbon-intensive energy sources and therefore has the lowest CO_2 prices (around €37/tonne CO_2 in 2030). The method assumes that these additional costs of airlines are fully passed onto passengers via an increase in fares. The effect is the strongest in 2020 when the full auctioning starts, stronger for long-haul flights.

Network structure of the airlines, i.e. concentration of traffic into hubs or use of more point-to-point operations, has an effect on the total number of flights and their regional

[9] Though discussions about the post-2020 amendments of the Scheme may have already started, there is little clarity on what these will be. Therefore other than further increase in CO_2 prices we do not assume any changes after 2020 here.

distribution. This LTF assumes a growing importance of Middle-East hubs (namely Dubai, Abu Dhabi and Doha) for connecting traffic to and from Middle- and Far-East and Southern Africa, resulting in declining number of transferring passengers at European hubs on these flows. This assumption is used in all but scenario D (possible instability in the Middle-East). Scenario C has in addition higher hubbing rates in general.

Figure 3. Summary characteristics of LTF10 scenarios.

	A: Global Growth	C: Regulated Growth	D: Fragmenting World	E: Resource Limits
MTF10b Scenario	High	Base	Base	Base
Passenger demand				
Demographics	Aging population, more young and senior leisure travellers	Aging population, higher retirement ages for business travellers	No migration and fast aging population, even higher retirement ages for business travellers	Aging population, mostly business travels in productive age
Routes and Destinations	Increasing long-haul	No change	Less long-haul	First no change, later less short-haul
Open Skies	EU enlargement later, Far and Middle East	EU enlargement earliest	EU enlargement latest	EU enlargement earliest
Alternative to Air Transport (new and improved HST connections)	43 city-pairs, fast implementation	43 city-pairs	39 city-pairs, late implementation	39 city-pairs, some early, some late
Economic conditions				
GDP growth[10] (EU27 average 2016-2030)	Stronger: 2.7%	Moderate: 2.2%	Weaker: 1.7%	Changing: 2.1%/ 0.6%/ 1.8%
EU Enlargement[11]	+8 States later	+9 States early	+5 States latest	+9 States early
Free Trade	Global, faster	Limited, later	None	Limited, later
Price of travel				
Environmental Regulation	Weakest, €37/tonne CO_2 in 2030	Strongest, €90/tonne CO_2 in 2030	Weaker, €60/tonne CO_2 in 2030	Weaker, €60/tonne CO_2 in 2030
Oil and Fuel[12]	Steady increase, $130/barrel in 2030	Steady increase, $130/barrel in 2030	Production uncertainty, price volatility, $200/barrel in 2030	Peak in production in 2020, $270/barrel in 2025, $220/barrel in 2030
Security	Decreasing costs	No change	No change	Increasing
Operating Costs	Decreasing, slower for long-haul	Decreasing, slower for long-haul	Slower decrease	Decrease, slowing in later years
Structure				
Network	Stronger role of Middle-East hubs	More hubbing & stronger role of Middle-East hubs	No change	More hubbing & stronger role of Middle-East hubs
Market Structure	More very small and very large aircraft	More larger aircraft	More large and very large aircraft	More larger aircraft

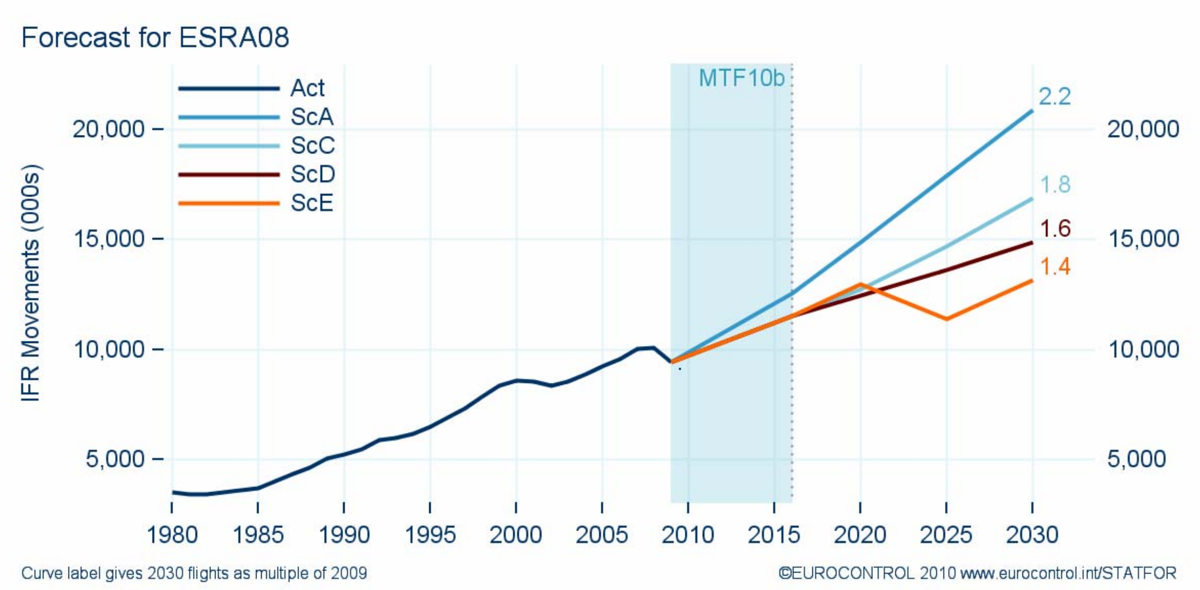
[10] Based on GDP forecasts prepared by Oxford Economics, Ltd.
[11] If political union proves elusive, but some degree of open aviation, free trade and free movement are still achieved, then the forecasted effects on traffic will still be valid.
[12] Assumptions for future oil prices draw on the EIA World Energy Outlook 2010 and Oxford Economics Ltd. assumptions for economic growth.

4. FORECAST RESULTS

4.1 Summary of results

In the 'most-likely' scenario C of the LTF10, there will be 16.9 million IFR movements in Europe in 2030, 1.8 times more than in 2009. The range of the forecast scenarios is between 13.1 and 20.9 flights in 2030, 1.4-2.2 times the traffic in 2009. The growth will average at 1.6%-3.9% annually (2.8% in the 'most-likely') but it will be faster in the early years, stronger in Eastern Europe and faster for arrivals/departures to/from outside Europe than for intra-European flights. Turkey will be the largest generator of extra flights in Europe, Germany will see the biggest number of additional flights in its airspace.

Figure 4: In 2030, 1.4-2.2 times more flights than in 2009



The current forecast is for between 13.1 and 20.9 million IFR movements in Europe in 2030, between 1.4 and 2.2 times more than in 2009. This means that on a typical day in a year there will be about 500-1500 extra flights to be handled than the year before on average every year between now and 2030. In the 'most-likely' scenario C of the LTF10, there will be 16.9 million flights in Europe in 2030, 1.8 times more than in 2009.

Traffic will increase on average by 1.6% to 3.9% per year overall (2.8% in the 'most-likely'), but the speed will not be the same every year. In scenarios A, B and C, the growth is faster in the early years. It slows in the later years as the markets saturate and, mainly in the strong-growth scenarios, as the airports near their capacity limits and cannot serve all the demand (see section 4.2 for more on airport capacities). Scenario E follows a specific pattern in growth which corresponds to its storyline: after a period of sustained growth in the early years, the traffic declines after 2020 following the peak in oil production, it recovers in the latest years when economies and industries adapt (see section 4.4 for a discussion of scenario E results).

Figure 5. Summary of forecast for Europe.

	IFR Movements(000s)								Traffic Multiple 2030/ 2009
	2006	2007	2008	2009	2016	2020	2025	2030	
A: Global Growth	9,561	10,043	10,083	9,413	12,529	14,877	17,925	20,906	2.2
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	Average Annual Growth								AAGR 2030/ 2009
	2006	2007	2008	2009	2016/ 2010	2020/ 2016	2025 / 2021	2030/ 2026	
A: Global Growth	3.7%	5.0%	0.4%	-6.6%	4.2%	4.4%	3.8%	3.1%	3.9%
C: Regulated Growth	.	.	.	.	2.9%	2.5%	2.9%	2.8%	2.8%
D: Fragmenting World	.	.	.	.	2.9%	1.9%	1.8%	1.8%	2.2%
E: Resource Limits	.	.	.	.	2.9%	2.9%	-2.5%	2.9%	1.6%

Growth will not be uniform across Europe, it will be faster in some regions and on some flows than others. As Figure 1 illustrates for the 'most-likely' scenario C[13], growth is stronger in Eastern Europe. These States have typically lower starting position in 2009 (e.g. when considering population[14]), their markets are relatively less mature, economies develop faster catching up with Western Europe, and there is more potential for air traffic growth. Situation in 2030 (in the 'most-likely' scenario C) is summarised in Figure 6.

While growth will be faster in the East, it is still mainly the big Western airspaces that will need to deal with the greatest increase in the number of flights. Figure 7 shows that Germany will handle over 5000 more flights per day in 2030 than it does now, followed by France, the UK, Turkey and Italy, each with between 3500-5000 extra daily flights. (Annex D gives forecast results for States and functional airspace blocks as currently defined.)

Flights in the airspace of a State are only partly generated in the State itself. For example, around 35% of flights in Germany enter and leave the German airspace without departing or landing at any of its airports. In this sense, Turkey will be responsible for the greatest number of the extra flights in the future European airspace, recording in 2030 over 2000 departures a day more than in 2009 (Figure 8), about as many as Germany has now. Of these around 60% will be internal flights landing again at some other Turkish airport. The remaining 40% will have destinations outside Turkey: mostly in Germany, Russian Federation or in the Middle-East.

[13] Similar patterns can be observed in the other LTF10 scenarios, yet with some variation at State and flow levels.
[14] Compare for example 14 yearly departures per 1000 capita in Germany in 2009 to 5 departures/1000 capita in Turkey, 18 in Spain to 2 in Ukraine, or 17 in Belgium/Luxembourg to 9 in the Czech Republic (States are paired by comparable total population). By 2030, these will shift to 13 yearly departures per 1000 capita in Turkey, 6 in Ukraine and 19 in the Czech Republic.

Figure 6: Total traffic in 2030

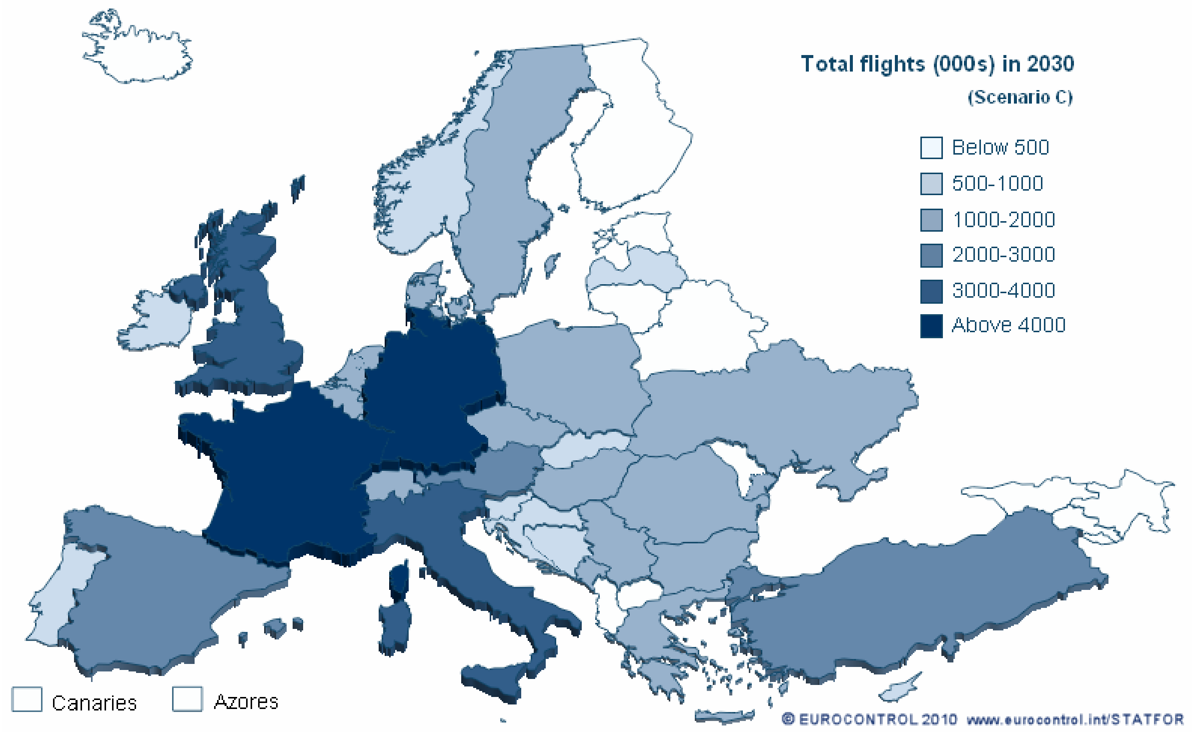
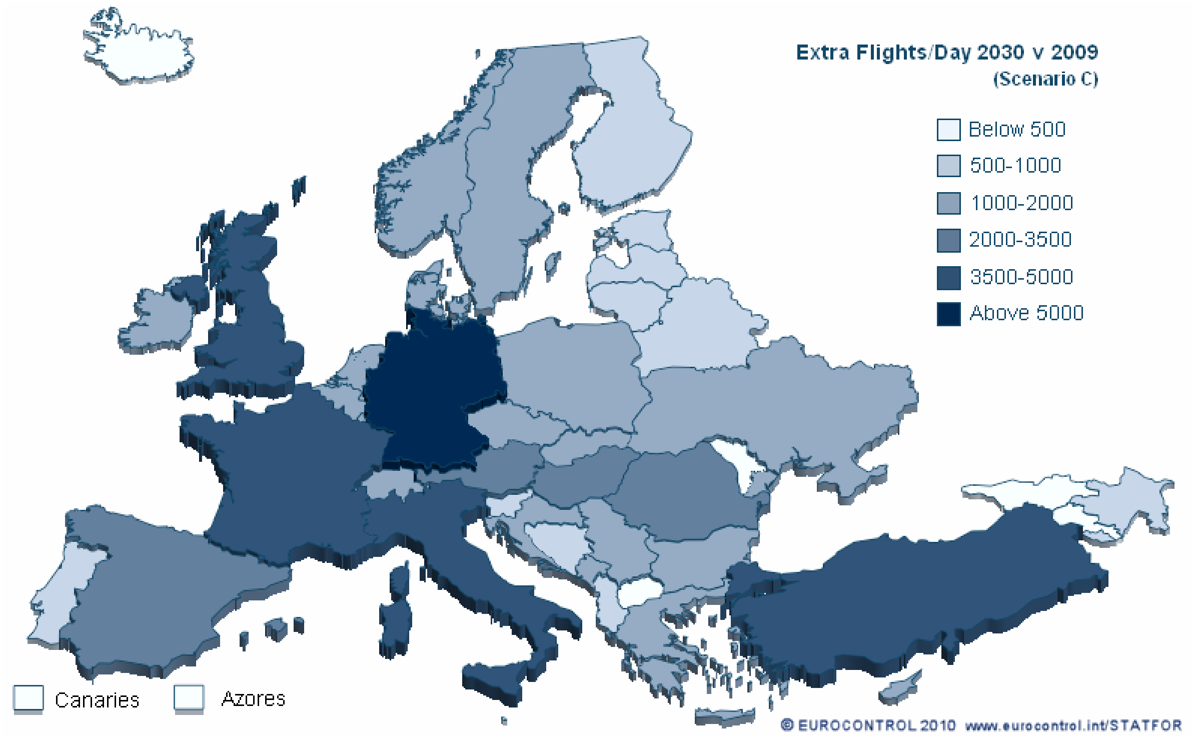
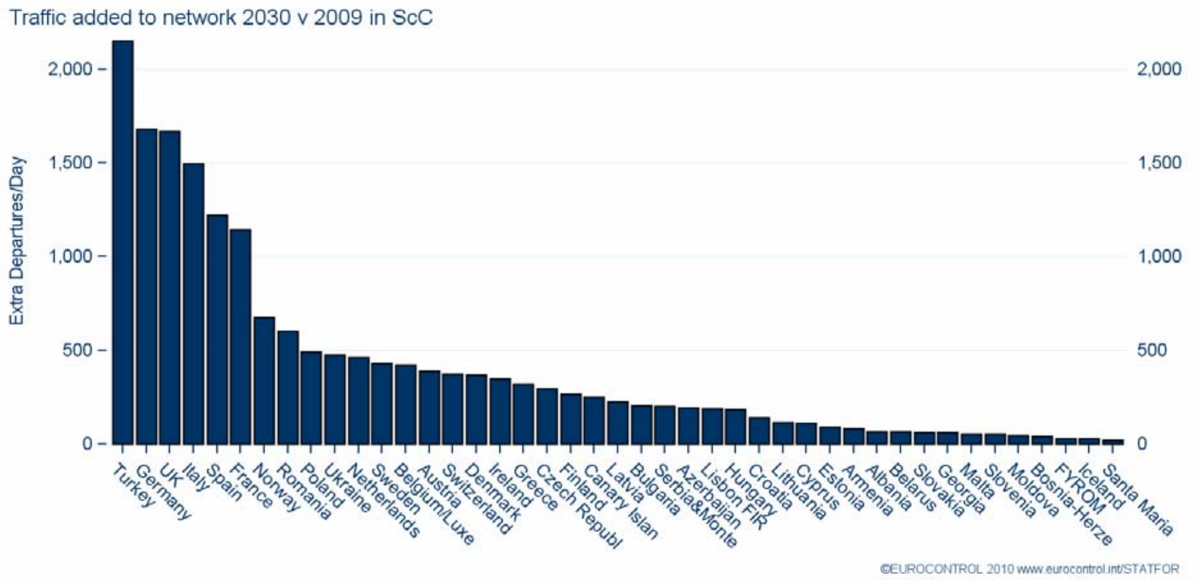


Figure 7: Extra flights a day through airspace



The split between internal-domestic flights, international arrivals and departures, and overflights in the airspace varies in each State, one of the most obvious reasons being the geographical size of the State. For ESRA as a whole most of the traffic, 81%, is currently internal European flights (see Figure 29 in Annex C). By 2030, the share of these flights will decrease to around 75%. This is because the growth in internal European traffic over the next twenty years will be relatively slower (between 1.1% and 3.5% annually depending on the scenario) than in international flights from and to outside Europe (3.0%-5.2% annually) and overflights of European airspace (4.3%-6.6% annually, though their share will remain relatively small). Similarly, the growth in internals, arrivals/departures and overflights in each State will evolve differently, in many of the Western mature markets (e.g. Germany, the UK, France, Italy) overflights being the most dynamic.

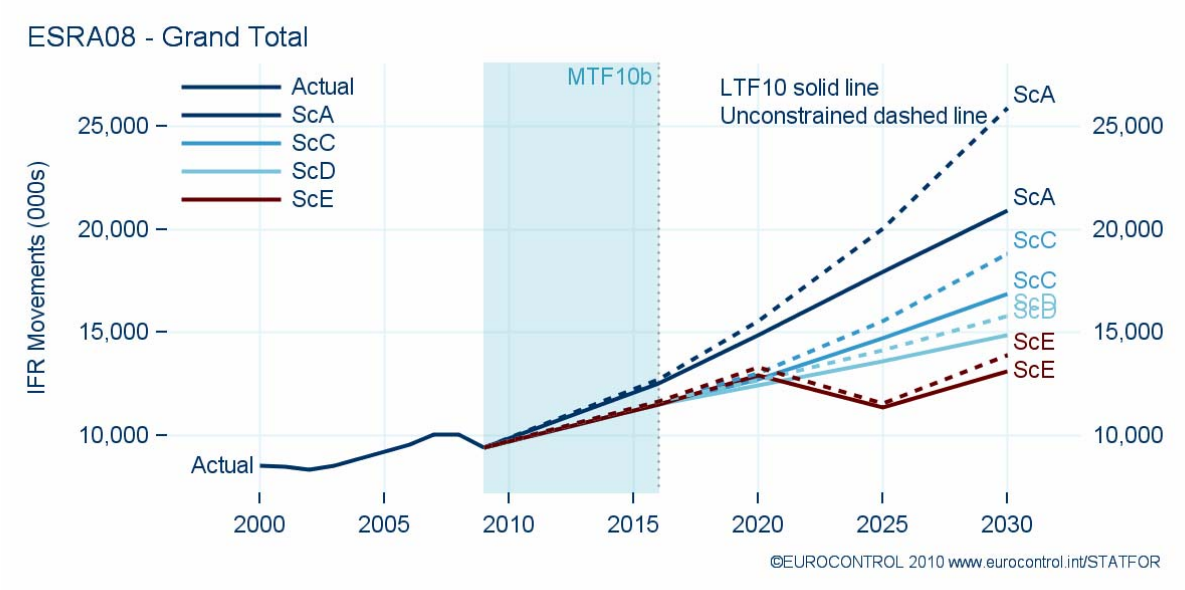
Figure 8: Traffic added to network



4.2 Airport capacity

Future air traffic growth will be limited by the available capacity at the airports. Around 5 million flights will not be accommodated in 2030 in the fastest growing scenario *A: Global Growth*, close to 20% of 'unconstrained' demand. The recent drop in traffic has given the system some extra years to react and adapt. But once the limits will be reached, the congestion will quickly increase the number of unaccommodated flights, putting an extra pressure on the network as a whole and delays in particular.

Figure 9: Demand ('unconstrained') [15] exceeds capacity of airports



One of the major challenges of future air traffic growth identified by the previous updates of the long-term forecast is the capacity at the airports available for accommodating increasing number of flights. In 2004, the ECAC-EUROCONTROL Challenges to Growth study (Ref.7) estimated in its strongest-growth scenario the total number of flights lost to insufficient airport capacity to be over 3.5 million by 2025; the figure was confirmed two years later by the LTF06.

The last long-term forecast issued in 2008 looked at the airport capacity afresh at some more detail. It based the analysis on a survey conducted within the scope of Challenges of Growth 2008 study (Ref.5) asking the airports' representatives[16] to estimate the current and future capacity based on known plans for infrastructure and operational improvements. In total, the LTF08 used data on close to 140[17] European airports representing about 70% of all European flights and including all of the 50 busiest airfields.

Though the data used in LTF08 were somewhat different by nature, expressing 'declared' capacity rather then more theoretical 'best-in-class' figures used in CG04, the overall results reiterated the previous conclusions. However, by looking 5 years further ahead the LTF08 pointed out two other important messages: first, the strong

[15] When we refer to demand throughout this report we always mean 'unconstrained' demand, i.e. demand 'not constrained' by airport capacity which is essentially a supply-side limit.
[16] with the support of ACI-Europe
[17] about double the number covered by CG04

acceleration of lost traffic once capacity limits are reached; second, the risks and possible adverse effects (ATM, delays, safety, etc.) of operating highly congested airports.

The decline in traffic in 2008-09 has eased the pressure on airport capacity and with only gradual recovery of growth and return to previously observed flight-counts it may seem that airport congestion is not much of a concern for the next few years. It is, indeed, recognised also by the 2010 Eurocontrol Medium-Term Forecast (Ref.8) which estimates the number of unaccommodated flights in 2016 to be only around 100 thousand, 1% of the expected 'unconstrained' demand. But, as Figure 9 illustrates, in the longer-term the demand will grow, the number of arriving and departing aircraft at European airports will increase, and the airports will be busy and not always able to fully respond.

This LTF reuses the LTF08 airport capacity data, extended and refreshed for major recent developments and changes in the plans over the last two years[18]. In total, the capacity of the system is expected to increase by around 40% between now and 2030, not evenly distributed across the 155 airports covered.

In the fastest growing scenario *A: Global Growth*, the LTF10 estimates around 5 million flights to be lost due to airport capacity shortfall in 2030, close to 20% of the unconstrained demand. In the most-likely scenario *C: Regulated Growth*, around 2 million flights are lost, approximately 10% of demand. This is less than in LTF08 mainly because of overall lower forecast levels for 2030 compared to two years ago (see section 4.7 for a discussion of results in the two forecasts). The recent drop in traffic has given the system some extra years to react. However, as in the previous forecast, once the limits are reached the congestion spreads and the number of unaccommodated flights grows quickly (more than doubling in scenario A between 2025 and 2030). With demand growing at similar rates also after 2030, it can be expected that the levels of congestion reported in LTF08 will be reached before 2035.

Figure 10. Flights lost to airport capacity constraints

	Unaccommodated IFR Movements (million)			Unaccommodated demand (%)		
	2020	2025	2030	2020	2025	2030
A: Global Growth	0.7	2.1	5.0	4%	10%	19%
C: Regulated Growth	0.1	0.8	1.9	2%	5%	10%
D: Fragmenting World	0.2	0.5	0.9	2%	4%	6%
E: Resource Limits	0.4	0.3	0.7	3%	2%	5%

The mismatch between capacity and demand is not the same across Europe. There are regions where the shortfall is likely to be bigger: notably Turkey and Bulgaria will face over 30% excess of demand for arrivals and departures at their airports in the fastest growing scenario A by 2030 (Figure 11).

In addition to unaccommodated demand, airport capacity constraints have an effect on the flow of operations in the network. In particular, it will be more vulnerable to delays that will propagate more rapidly and widely and with more restrictions at the airports and fewer opportunities to recover will stay longer in the system.

These results are based on our current data about the future capacity of the airports. Much can change over the next twenty years; new projects may be launched,

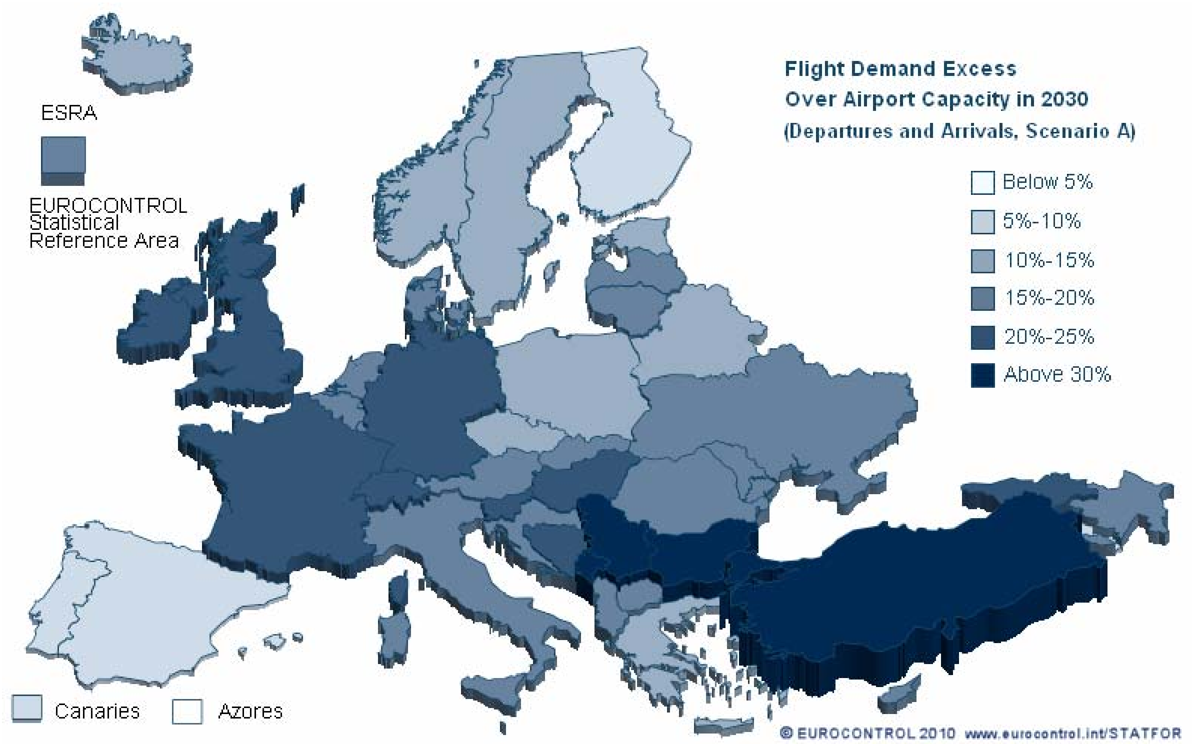
[18] E.g. dropped plans for third runway in London/Heathrow, updated capacity for Berlin-Brandenburg, some airports added to the list.

operations can be further optimised to get closer to the 'best-in-class', more investments may be secured. Yet, at the same time, projects currently foreseen may be delayed, reduced in scope or even cancelled. Therefore the figures cited in this section shall not be taken as 'carved in stone', they are likely to change as airports develop and adapt to the increasing demand. Nevertheless, this section reiterates and reconfirms the airport capacity challenge identified by the previous studies (CG04 and CG08).

There may also be other methods for mitigating the effects of airport congestion. The CG08 study (Ref.5) concluded that schedule smoothing, accelerated shift to larger aircraft and extension of high-speed rail network have limited benefits as mitigation actions for the air traffic network as a whole. On paper, more could be gained from use of alternative airports or further SESAR improvements each reducing unaccommodated demand by up to 40%. Yet, there are many practical difficulties in fully exploiting these. The most could be achieved by a mix of methods which take into account different airline business models and local demand.

Similar analysis is beyond the scope of this LTF and apart from a discussion of high-speed train in section 4.6 it is not further developed here. But the main conclusions from two years ago are likely to hold true also with the current results.

Figure 11: Demand excess for arrivals and departures



4.3 Airport and airline network

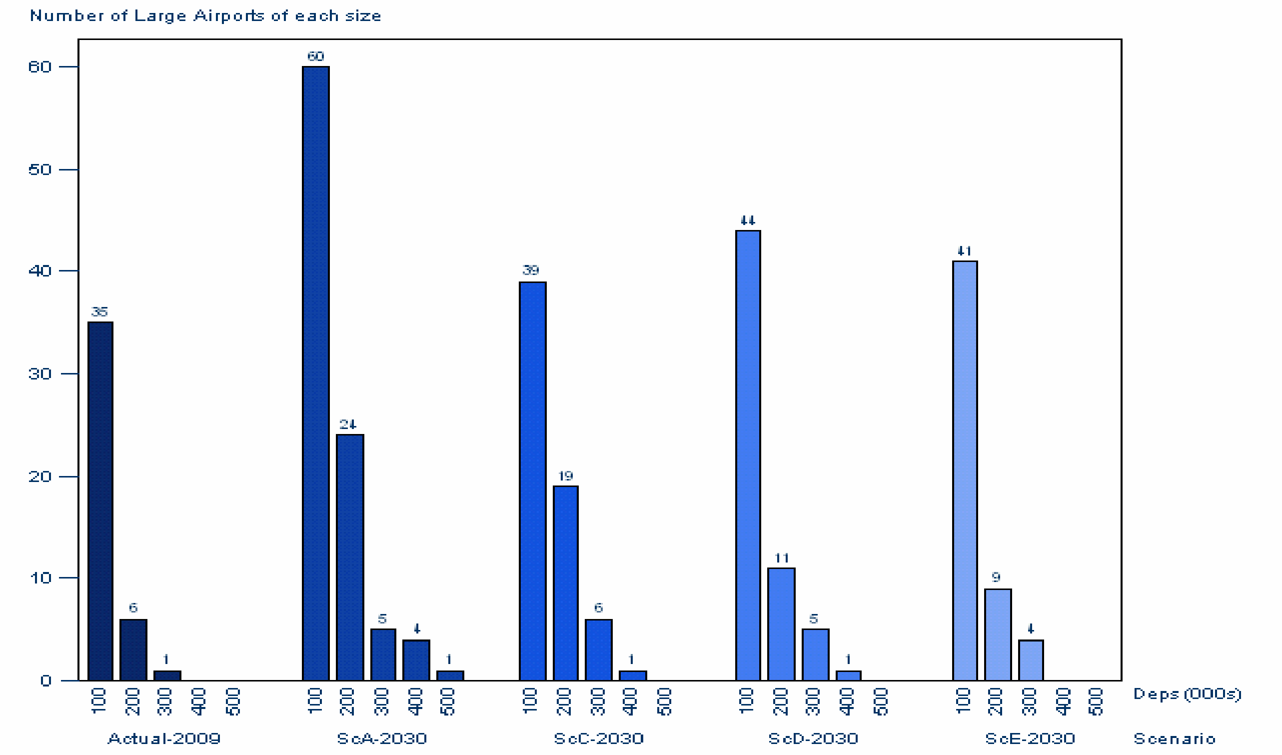
More traffic in Europe will mean bigger airports. In 2030, 13-34 airports will handle more than 150,000 departures a year, traffic currently achieved only at 7 airports in Europe. Some faster growing airports in Eastern Europe will join the top 25. Hubs in the Middle-East will take over some of the transferring passengers from European hubs for flows to Middle-East, Far-East and Southern Africa, freeing capacity at congested airports to serve other traffic.

Airports establish their position in the market by targeting specific customer groups (e.g. low-cost airports providing point-to-point service to short-haul destinations operated by low-cost carriers, city airports mostly frequented by business passengers working for industries located in the city), by serving and extending their catchment area, or by acting as hubs for major carriers. Figure 12 illustrates how the number of big airports in Europe will increase over the next twenty years. For example, in the strongest growing scenario A there will be 34 airports with over 150,000 departures per year, a level of traffic that only 7 airports in Europe handle now.

As explained in section 4.1, States in Eastern Europe have often bigger potential for growth. In result, a number of airports in this region will join the top 25 in Europe and outnumber (in terms of departures) some of the current busiest airports. Also, many airports around Europe will by 2030 near their capacity limits (see section 4.2). As a result, traffic is likely to spread somewhat more across the airport network. While the top 10 airports currently account for around 23% of all departures, in 2030 it will be around 18%-21%.

Figure 12: More, larger European airports

Note: Upper and lower bounds for the columns are ±50,000.



Airlines' strategies for capturing their market share differ and evolve in time. In building their network airlines may rely more on hub-and-spoke or point-to-point operations, use code sharing for extending the list of offered destinations, form and join alliances with their competitors to create more cooperative relationships. As further aviation agreements are negotiated with EU partnering countries the market opens to more competition from non-European airlines and, at the same time, new opportunities arise for European carriers abroad. Passengers will have more options to choose from when planning their trips. For example, strongly growing Middle- East carriers can offer competitive connections to Middle- and Far-East or Southern Africa through their hubs outside Europe. This will on one hand weaken the role of European hubs currently offering these destinations on the other it will free some of their capacity for other flows.

Figure 13 shows the effect of hubbing assumptions in the LTF on demand for departures from European airports. Scenarios C and E assume increasing share of transferring passengers at European hubs. With more hubbing, trips from origin to destination more often involve a transfer and therefore produce more flights. Scenario A shows more clearly the changing role of Middle-East hubs as it does not change the hubbing rates in Europe: in 2030, the 'unconstrained' demand for departures from European airports is by 1.7% lower[19] since passengers transfer outside Europe[20]. Relatively most affected will be airports with large share of flows served also by hubs in the Middle-East on their traffic: London-Heathrow, Paris CDG or Frankfurt.

Figure 13. Transfers at Middle-East hubs decrease traffic in Europe[21]

	Reduction in 'unconstrained' demand for departures (%)		
	2020	2025	2030
A: Global Growth	-0.5%	-1.1%	-1.7%
C: Regulated Growth	0.5%	1.2%	1.8%
E: Resource Limits	0.6%	1.1%	1.6%

[19] Than without any change in hubbing rates from now.
[20] In fact, scenarios C and E assume the same increasing role of Middle-East hubs as scenario A. But the effect there is less clear in the overall figures since in these scenarios European hubs serve more other flows of traffic.
[21] Scenario D is not shown here as it does not involve any changes in hubbing from now.

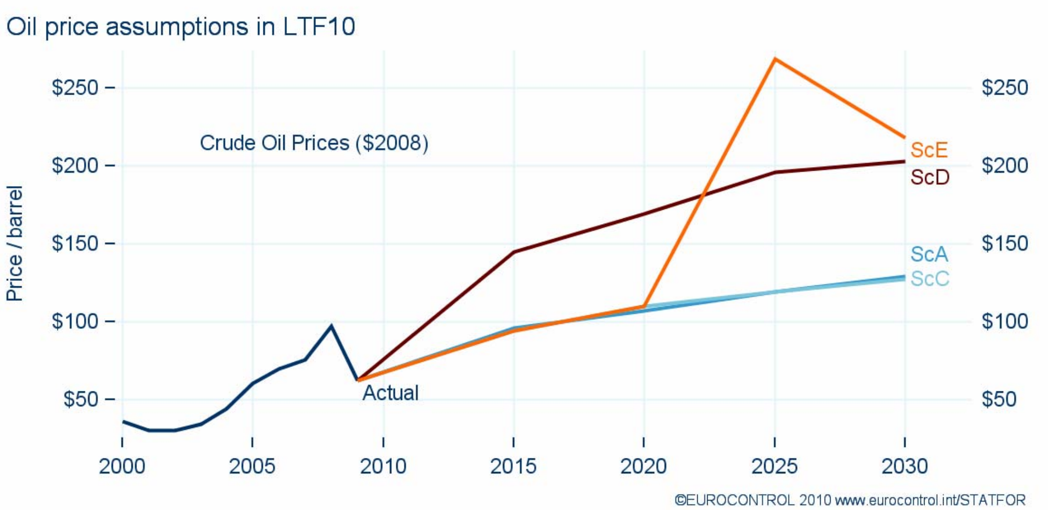
4.4 Oil and fuel

Fuel represents a major part of airline operating expenses. Oil and fuel prices are expected to grow in all LTF10 scenarios with an effect on fares and passenger demand. Scenario *E: Resource Limits* explores the traffic with peak in oil production reached in 2020. The price shock and economic decline result in 12% drop over the 5 years following the peak.

Fuel constitutes one of the major parts of airline operating costs. Fluctuations in oil and kerosene prices present a particularly intricate risk problem and have a direct effect on airlines' cash flow and yields. In principal, prices are a result of supply and demand meeting in the market. There is little doubt that demand for oil will continue to grow over the next twenty years, with transportation fuel, in particular, driving the growth in demand. On the other hand, oil and fuel supply is and will be limited by the availability of resources and by the extraction and production technology and costs. Recent years also showed the increasing role of speculative interest in influencing the price in commodity markets.

The importance of fuel supply and prices has been recognised by the STATFOR User Group and it has been agreed to elaborate on these factors in the LTF. As Figure 23 in Annex A shows, assumptions about oil and fuel are used in the price model of the LTF. Oil prices are expected to increase in all LTF10 scenarios, though at different speeds, at different times and for different reasons (section 3 explains the storylines for the LTF10 scenarios).

Figure 14: Oil prices continue to grow



Fuel considerations are often linked to discussion of emission costs. CO_2 emissions are in fact a direct product of the fuel burn so both, fuel expenses and CO_2 expenses are a function of fuel consumption. Though they have different underlying costs and origins, they have similar effects on airline economics. The LTF assumes that in order to secure their profit margins, airlines pass these additional expenses onto passengers via an increase in fares[22]. Figure 15 reviews the effects of increasing fuel and CO_2 emission costs factored into the LTF10 scenarios on passenger demand. For example, because of the fuel price increase to around $130/barrel in scenario A, 'unconstrained' passenger demand for departures in 2030 is by around 4.1% lower than if the prices were fixed at 2009 level. Put it differently, the last column of Figure

[22] The LTF does not probe into the various strategies airlines might adopt in this respect.

15 shows that if there were no emission costs to be paid by the airlines (e.g. aviation not participating in the EU Emission Trading Scheme) the ‘unconstrained’ demand in 2030 in scenario C would be by 2.5% higher.

Figure 15. Effects of increasing fuel and CO_2 costs on passenger demand

	Reduction in ‘unconstrained’ demand for departures (%)					
	Fuel costs			Emission (CO_2) costs		
	2020	2025	2030	2020	2025	2030
A: Global Growth	-1.4%	-3.1%	-4.1%	-1.0%	-1.0%	-1.1%
C: Regulated Growth	-3.1%	-5.0%	-6.8%	-2.1%	-2.3%	-2.5%
D: Fragmenting World	-3.7%	-8.1%	-12.2%	-1.3%	-1.3%	-1.3%
E: Resource Limits	-3.1%	-26.4%	-22.9%	-1.3%	-1.3%	-1.3%

In addition to price consideration, it has also been agreed by the STATFOR User Group to address in the LTF the impacts of the possibility of reaching peak in World oil production on European traffic. When considering the effects of reaching peak in oil production it is important to recognise that it will not only affect the finances of the airlines via an increase in fuel prices but it will have much wider consequences for World industries and global economy. Aviation will be faced with radically changing demand as economies slow down, disposable income and wealth distribution modifies in levels and shifts geographically and travel patterns transform. The air industry will need to adapt to the new situation, implementing technological solutions less dependent on oil resources and finding new business models better fitting the reshaping demand.

It is beyond the scope of the LTF to discuss all the potential impacts of peak oil on aviation. Instead, scenario *E: Resource Limits* has been specifically designed to look at the quantitative effects of a theoretical possibility of World oil production reaching its peak by 2020 on European traffic.

In the early years the forecast growth in scenario *E: Resource Limits* is relatively close to scenario *C: Regulated Growth*, at around 2.9% annually. In fact, the two scenarios follow a very similar path up until 2020, scenario E having somewhat less environmental regulation in accordance with the storyline of little focus on long-term sustainability.

In 2020, the peak oil is reached and the World oil supply declines by around 5% annually onwards. The peak oil comes as a shock and the prices overshoot to close to $500/barrel in nominal prices, over $270/barrel in real prices ($2008). World economies slow down, energy-intensive and small-open economies are affected the most. Although oil producing economies initially benefit from higher prices, they soon join in the slow-down as high prices take their toll on global growth. The growth in air traffic drops to -2.5% annually, which translates to around 12% decrease in traffic between 2020 and 2025.

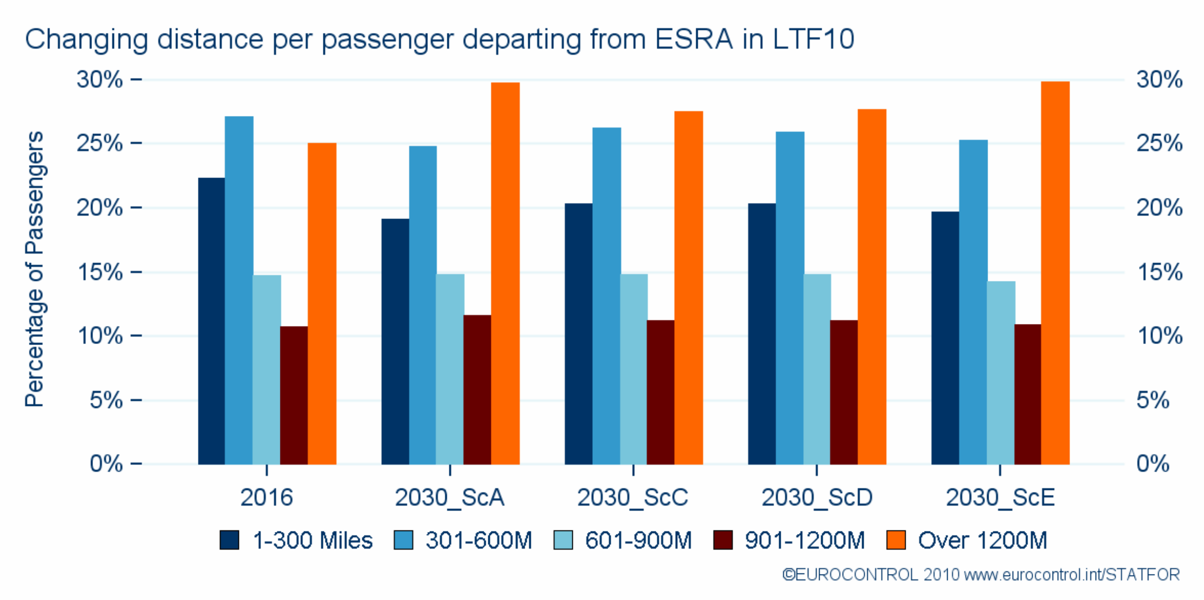
The growth recovers in the last 5 years of the forecast back to around 2.9% per year. This assumes a relatively fast reaction of the economies and the ability of the industries (including aviation) to adapt and switch to less oil-intensive technologies or use of non-fossil fuels quickly. This may be difficult to achieve in a situation of economic decline, especially if such a need is not anticipated ahead and the technology is not readily and widely available. The assumption has been used here principally to allow for the traffic to recover still within the twenty-years horizon of the forecast. In total, scenario *E: Resource Limits* ends with traffic around 40% higher than now; this after 10 years of sustained growth followed by a peak oil shock resulting in 5 years of decline and gradual recovery afterwards.

There are many ‘unknowns’ in the peak oil theory. Though there is growing evidence that new oil discoveries will not be sufficient to compensate the depletion of existing sources, expert opinions differ greatly about the exact timing and rate of oil depletion. Scenario E presented here does not claim to be the one which will most-certainly come. It is one of many possible, designed to be severe but not terminal for aviation to allow us to illustrate ‘what it might be like’; arriving and moving relatively quickly to fit the timeframe of the LTF; yet, consistent with current knowledge discussed in existing literature (Ref. 9).

4.5 Travel distance and aircraft size

Passengers will travel farther in 2030 than they do now; the average distance per journey will increase by around 5%-10% between 2016 and 2030. The average distance per flight will not change at the same rate. The fleet will evolve and the increasing demand for long-haul will be served by larger aircraft offering bigger seating capacity.

Figure 16: Passengers travel to more distant destinations



There are several reasons factored into the LTF10 scenarios for passengers to travel farther in the future then they do now. The economic growth in 'old' Europe is slower than in the new developing countries in the Middle- and Far-East or South America. There will be more business opportunities and business contacts with these regions and the economic links and relationships will be more common and more frequent. This will bring more distant business travellers, but leisure can be expected to follow as more informal links are established and exploring 'unusual' parts of the World will be easier and safer. Open Skies agreements will open the markets to more competition and provide the passengers with more travel options to regions outside Europe; greater use of Middle-East hubs will reduce the number of short connecting flights within Europe; alternative in high-speed train and green thinking will limit demand for short-haul air travel[23].

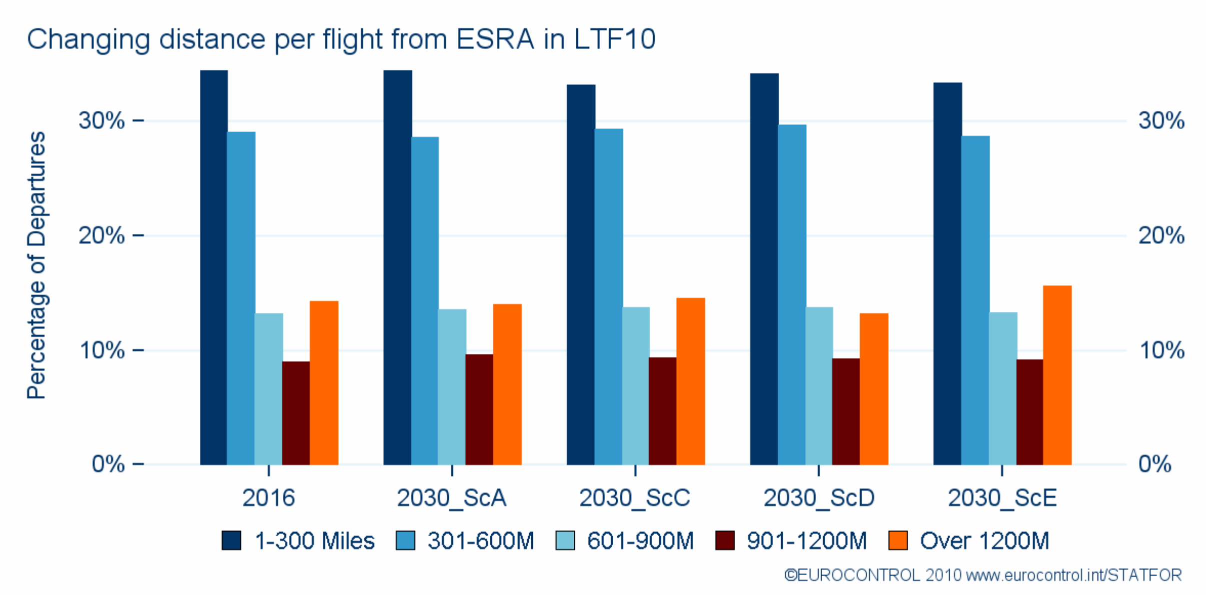
Figure 16 illustrates the increasing length of journeys: in all four scenarios there will be relatively fewer trips below 600 miles in 2030 than in 2016 while relatively more passengers will be flying to destinations over 1200 miles. In result, the average distance per journey will increase by some 5%-10% between 2016 and 2030, the most in scenario *A: Global Growth*.

Though people will on average travel farther, the average distance per flight will not increase in the same speed. In fact, as Figure 17 suggests, it will not change significantly from the base. In 2030, there will be roughly the same proportion of short-haul and long-haul flights as in 2016. But, though the proportion will be the

[23] This may not be completely true for all scenarios. E.g. scenario D: Fragmenting World has a storyline of little economic cooperation between regions and increasing security risks. Therefore the results here differ according to the specific mix of factors in each scenario.

same the flights will not be flown by the same aircraft; in particular long-haul flights will be operated by larger aircraft to serve the higher numbers of passengers travelling long-distance.

Figure 17: Proportion of short-haul and long-haul flights is stable



The fleet in Europe develops. Airlines focus on the most efficient and economical utilisation of their aircraft; they opt between increasing frequencies or size of aircraft to offer more seating capacity, they balance their fixed and operating costs and plan their fleet renewal accordingly. Manufacturers compete in capturing the market and offer new types of aircraft on both ends of the size-spectrum with better fuel-efficiency and emission parameters. Figure 18 shows how the average aircraft size changes in the LTF10 scenarios. In all four scenarios, long-haul flights are served with bigger aircraft, offering on average around 1.5%[24] more seating capacity per flight each year[25]. Larger aircraft are used also for short-haul flights in the environmental scenario *C: Regulated Growth*. The technological and strong economic growth scenario *A: Global Growth* captures more passengers on short-haul by offering higher frequencies and serving also less developed routes by smaller aircraft. Overall, the average size of aircraft per flight will increase by 0.2% to 1.3% annually.

Figure 18: Aircraft size increases faster for long-haul

	Average annual change in aircraft size (seats/flight)					
	1-300 Miles	301-600M	601-900M	901-1200M	Over 1200M	Total
A: Global Growth	-0.7%	-0.3%	0.2%	0.5%	1.8%	**0.3%**
C: Regulated Growth	0.9%	1.0%	1.1%	1.3%	1.8%	**1.3%**
D: Fragmenting World	-0.4%	-0.3%	0.0%	0.4%	1.7%	**0.2%**
E: Resource Limits	0.2%	0.2%	0.4%	0.6%	1.4%	**0.7%**

[24] 1.4%-1.8%
[25] These would mainly correspond to very large jets Airbus380 or Boeing 747 derivatives.

4.6 High-speed train

High-speed rail competes successfully with short-haul passenger air transport. Over 40 city-pairs will be connected by new or improved links between 2016 and 2030. Passengers opting for rail will reduce the demand for flights by somewhat over 0.5% in 2030, often rather easing the pressure at congested airports than reducing the number of operated flights.

One of the major competitors of short-haul air transport is the high-speed train. Operating at high speeds, the train can offer comparable transport times for distances up to 800km (Ref.10). It can also successfully attract passengers by providing in some cases a perceived higher level of comfort, lower risk of delay, less security hassle, shorter distance to the city centre, by being perceived as 'green' mean of transport and possibly other aspects depending on personal preferences of travellers.

The LTF focuses on the speed premium of air travel over rail transport as the major factor for capturing the share in the market. The high-speed rail network continuously develops, new links are built, new connections added and connecting times improved. The LTF10 considers improvements on over 40 city-pairs from projects[26] being finished between 2016 and 2030. These are schematically pictured in green in Figure 21.

Due to more passengers opting for high-speed train instead of travelling by air, the 'unconstrained' demand for flights (in principal short-haul) will be reduced by somewhat over 0.5% overall in total Europe by 2030. The HST network does not develop in all parts of Europe with the same intensity. States with more projects in the pipeline are likely to see stronger reduction in demand for flights by 2030 (Figure 20), such as France (-2.4%), Spain (-2.1%) or Portugal[27] (-5.1%).

Figure 19. Improved high-speed train connectivity reduces demand for flights

	Reduction in 'unconstrained' demand for departures (%)			
	LTF10 network			Theoretical network
	2020	2025	2030	2030
A: Global Growth	-0.4%	-0.6%	-0.7%	-4.9%
C: Regulated Growth	-0.3%	-0.5%	-0.7%	-4.6%
D: Fragmenting World	-0.1%	-0.4%	-0.6%	-4.6%
E: Resource Limits	-0.3%	-0.4%	-0.5%	-4.2%

[26] TEN-T priority projects, Alpine tunnel links, etc. This figure excludes city-pairs which are too close to have a viable air link (Brussels-Lille for example).
[27] Lisbon FIR

Figure 20: Effect of improved HST by State

C: Regulated Growth	Reduction in 'unconstrained' demand for departures (%)		C: Regulated Growth	Reduction in 'unconstrained' demand for departures (%)	
	LTF10	Theoretical		LTF10	Theoretical
	2030	2030		2030	2030
Albania	.	-3.3%	Italy	-0.3%	-2.9%
Armenia	.	-6.4%	Latvia	.	-13.0%
Austria	.	-7.6%	Lisbon FIR	-5.1%	-6.2%
Azerbaijan	.	-6.7%	Lithuania	.	-15.1%
Belgium/Luxembourg	.	-1.3%	Moldova	.	-4.1%
Bosnia-Herzegovina	.	-13.6%	Netherlands	.	-5.0%
Bulgaria	.	-4.5%	Norway	.	-11.6%
Croatia	.	-8.8%	Poland	.	-7.0%
Czech Republic	.	-7.2%	Romania	.	-12.9%
Denmark	.	-2.1%	Serbia&Montenegro	.	-11.4%
Estonia	.	-15.4%	Slovakia	.	-8.0%
FYROM	.	-9.8%	Slovenia	.	-7.1%
Finland	.	-8.5%	Spain	-2.1%	-4.0%
France	-2.4%	-3.9%	Sweden	-0.6%	-7.3%
Georgia	.	-9.5%	Switzerland	-1.0%	-7.4%
Germany	-1.5%	-7.6%	Turkey	-0.8%	-4.8%
Greece	.	-3.0%	Ukraine	.	-3.7%
Hungary	.	-3.2%	UK	.	-2.5%
Ireland	.	-3.9%		.	

The HST network used in the LTF10 is based on currently known development projects and therefore represents a realistic picture of the future situation. However, with twenty years ahead the plans are likely to change. Social climate and public perception of rail transport play an important role here as well as governmental support, general economical situation, and ability to secure adequate financial backing more specifically. There is one other major condition for HST links development: there must be strong demand for travels between the connected cities that will secure enough paying passengers making HST operations economically viable[28].

To allow for a wider analysis of possible effects of offering high-speed train connections as an alternative to short-haul flights we conducted a 'what-if' analysis using a much extended theoretical HST network. For this, the network has been artificially expanded beyond the actual plans and projects to link all city-pairs with air distance maximum of 500km connected by at least 10 flights a day[29]. This theoretical network is shown in blue in Figure 21. The effects of introducing HST on this

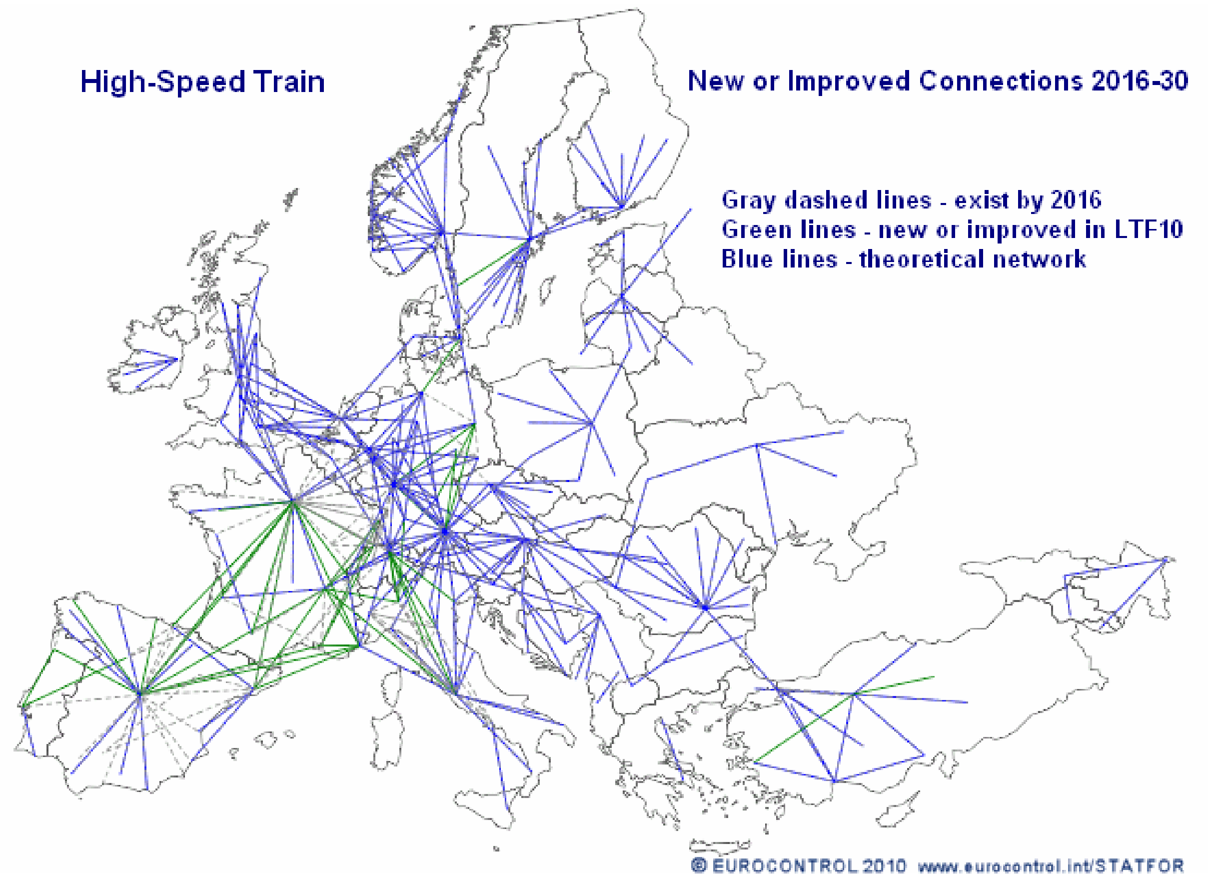
[28] Especially when considering the substantial fixed investment into building the infrastructure.
[29] There and back, as forecast by scenario *C: Regulated Growth* for 2030

extended theoretical network[30] in terms of reduction of demand for flights in 2030 is summarised in the last column of Figure 19, the reduction is 4.2%-4.9% overall in Europe. The details per State are given in Figure 20.

There are over 250 extra links in this theoretical network compared to the plans included in the LTF10, often in regions which currently have no high-speed rail[31] and where constructions may be technically and financially strenuous or even impossible. So, to achieve this further 4% reduction in flight demand the network would have to be extended to connect more than 6 times more city-pairs than it is currently planned for, with probably more[32] than 6 times bigger budget needed.

It shall be noted that the reduction in demand for flights is not translated directly into a reduction in operated flights. High-speed train connects the major urban areas in Europe where airports are often very congested. Therefore in many cases the reduction in demand will rather ease the pressure on airports, free some capacity and reduce the number of unaccommodated flights than decrease the number of operated flights.

Figure 21: High-speed rail network develops[33]



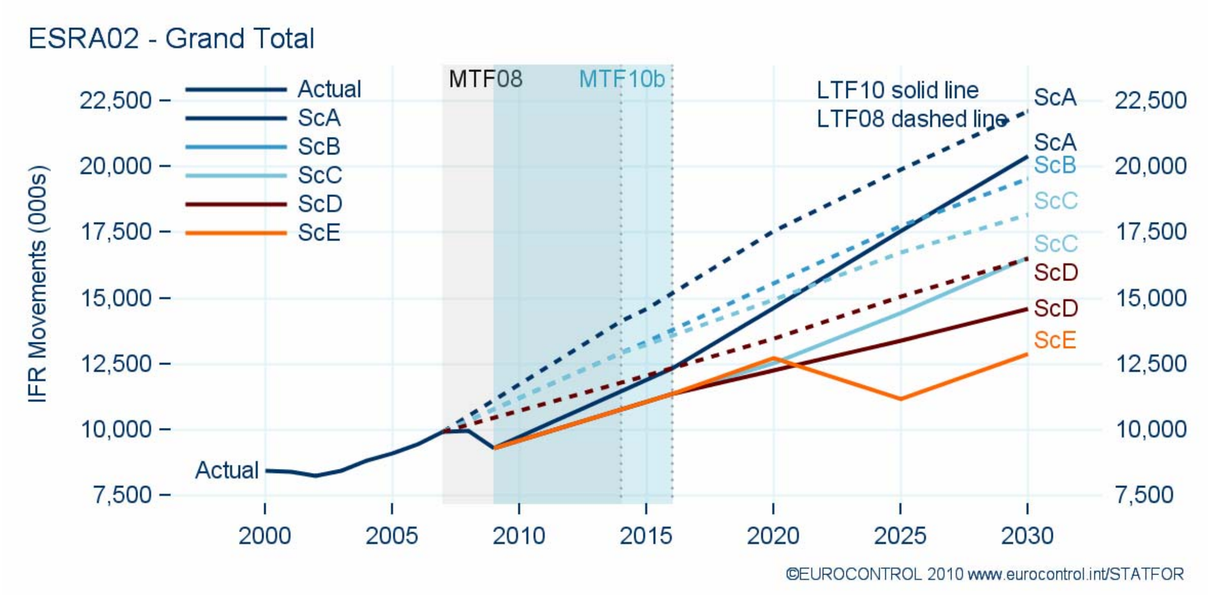
[30] LTF10 improvements plus the extra theoretical links (close to 300 city-pairs) – green and blue lines in Figure 21
[31] Or even conventional rail
[32] Given the geographical circumstances
[33] In this simplified schematic view city-pairs are connected by direct lines instead of following the railroad network.

4.7 Comparison with previous forecast

LTF10 has similar growth in traffic as the last long-term forecast prepared in 2008. Due to a shift in baseline it finishes by around 1.6 to 1.9 million flights lower, reaching comparable traffic levels about 5 years later. New scenario *E: Resource Limits* explores a particularly difficult path for the aviation at the lower end of the range.

The last EUROCONTROL Long-Term Forecast was published in the end of 2008 (Ref.2). It used the latest EUROCONTROL Medium-Term Forecast published in February 2008 as the baseline (Ref.11) and it developed four scenarios for the future of air traffic up to 2030: *A: Global Growth, B: Business as Usual, C: Regulation & Growth, D: Fragmenting World*. Of these, A, C and D are broadly consistent with the current LTF scenarios. A comparison[34] of the LTF08 with the current forecast is presented in Figure 22.

Figure 22: Current forecast about 5 years behind LTF08



All of the LTF10 scenarios have lower traffic in 2030 than in the LTF08, the forecast is now by about 1.6 to 1.9 million flights lower than it was two years ago. The main reason for this is the much lower baseline traffic of the LTF10. The LTF08 was based on 2014 traffic forecast of the MTF08. The MTF08 was prepared in early 2008 on the top of the cycle after a strong-growth 2007 and expected relatively strong growth also in the next years, in part due to growing importance of dynamically evolving business aviation and anticipated effects of the EU-US Open Skies agreement. This relatively high starting point and the risks of a possible downturn were acknowledged in section 4.9 of the LTF08. The degradation of traffic in the last two years and the generally worsened position of the air-industry resulted in the latest update of the MTF of September 2010 (Ref.1) to forecast traffic levels foreseen by the MTF08 to be reached only some 5-6 years later. In fact, the latest forecast for 2016 is close to what the MTF08 envisaged for 2010[35].

[34] The comparison is for ESRA02 since ESRA08 aggregation was not available for the LTF08.
[35] Even though the low scenario of the MTF September 2010 is not used here since in view of the latest traffic developments it now seems too low to be a realistic starting point for the LTF.

The rates of growth in the current LTF are fairly close to the forecast of two years ago, in scenarios A and C even marginally higher now. The scenarios' assumptions have been reviewed and the input data refreshed so some differences must exist. For example, lower airport congestion and less unaccommodated demand (section 4.2) allows for faster growth in scenario *A: Global Growth* now, especially in the final years of the forecast horizon. This faster growth is, however, not enough to compensate for the lost years of growth and the LTF10 finishes still about 5 years behind the LTF08.

There is more variability in the scenarios this year, the spread between the lowest scenario E and highest scenario A is now around 7.8 million while it was only 5.6 million in LTF08. This is mainly because scenario *E: Resource Limits* explores a particularly difficult path for future aviation resulting in very low growth in traffic.

The patterns described here are true at the total European level. At a State and flow level, the forecast may have shifted more or less in either direction depending on a combination of factors specific for the region and how these have evolved over the two years. A summary of the forecast per State is provided in Annex D, without discussing the changes since the previous LTF.

5. GLOSSARY

AAGR	Average Annual Growth Rate
ACC	Area Control Centre
CG04	Challenges to Growth 2004 Study
CG08	Challenges of Growth 2008 Study
BRIC	Brazil, Russia, India, China
Constrained	Forecast constrained by capacity limits at major airports
CONSAVE	Constrained Scenarios on Aviation and Emissions programme
Co-modality	Efficient use of different transport modes on their own and in combination
Demand	Unconstrained demand (demand before constraining by airport capacity)
ECAC	European Civil Aviation Conference
ESRA	Eurocontrol Statistical Reference Area (see Annex B.1)
ETS	European Union Emission Trading Scheme
FAB	Functional Airspace Block
FIR	Flight Information Region
GAT	General Air Traffic
GDP	Gross domestic product
HST	High-speed train
IFR	Instrument flight rules
LTF	Long-Term Forecast
MTF	Medium-Term Forecast
Peak Oil	Point in time when the maximum rate of global petroleum extraction is reached, after which the rate of production enters terminal decline
p.p.	Percentage points
ScA	(in tables) Scenario A
STATFOR	Eurocontrol Statistics and Forecast Service
STF	Short-Term Forecast
TR	Traffic Region (a grouping of TZs)
TZ	Traffic Zone (≈State, except for Spain, Portugal, Belgium and Luxembourg, Serbia and Montenegro)
UIR	Upper Flight Information Region
Unconstrained	Forecast not constrained by capacity limits at major airports

Detailed explanations of the above terms and others are available in EUROCONTROL Glossary for Flight Statistics & Forecasts (Ref.12).

ANNEX A. FORECAST METHOD

A.1 Long-term forecast model

The long-term forecast uses a model of economic and industry developments to grow airport-pair traffic that is forecast by the latest MTF further into the future. It addresses passenger, cargo, military GAT, business aviation and small airport-pairs' traffic by specific sub-models and then combines the results to produce the final traffic forecast per State.

The long-term forecast method, like the medium-forecast method (MTF), uses a model of economic and industry developments to grow the baseline airport-pair traffic and produce a view of future flight movements. Each LTF is strictly linked to the latest available MTF whose final forecast year is used as the starting point of the LTF. This also means that the LTF model ignores any events that may happen between now and the final MTF year (starting year of the LTF) as these should be fully covered by the MTF. The LTF10 starts from the 2016 forecast of September 2010 update of the MTF (Ref.1).

Figure 23 illustrates the LTF model and its sub-models which serve to produce forecasts of passenger, cargo, military GAT, business aviation and small airport-pairs flights and, after merging these, to provide the total flight forecast. Since passenger flights traditionally represent the greatest part of all IFR flights (around 85% in 2009), the passenger traffic sub-model is the most detailed and is structured around five main groups of factors:

- Global **economy** factors represent the key economic developments driving the demand for air transport.
- Factors characterising the **passengers** and their travel preferences change patterns in travel demand and travel destinations.
- **Price** of tickets set by the airlines to cover their operating costs influences passengers' travel decisions and their choice of transport.
- More hub-and-spoke or point-to-point **network** may alter the number of connections and flights needed to travel from origin to destination.
- **Market structure** describes the size of aircraft used to satisfy the passenger demand and converts the passenger numbers into flights.

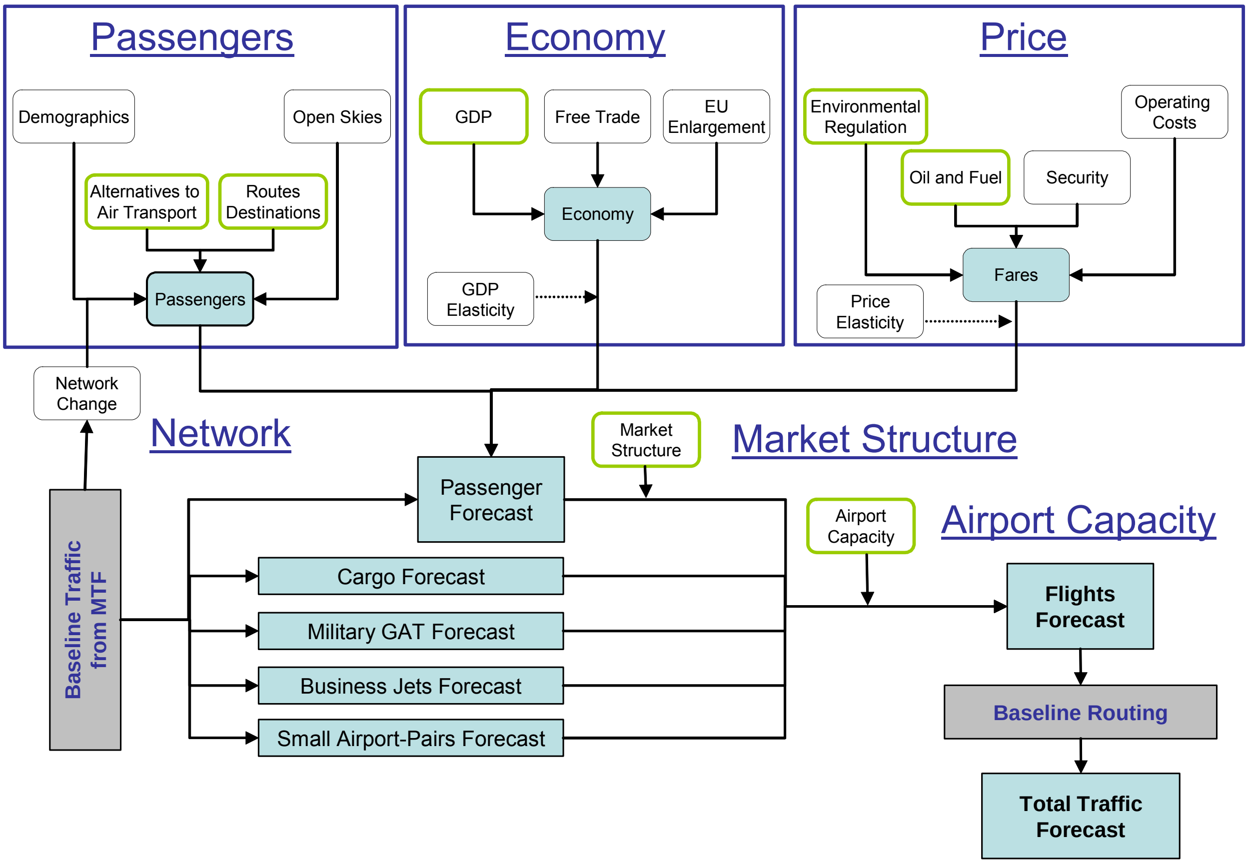
Cargo, military GAT, business aviation and small airport-pairs flights' sub-models are less sophisticated, relying more on historical evolution, sometimes in combination with economic developments.

Total forecast arrivals and departures are restricted by **airport capacity** before the flights are 'flown' through the airspace (assuming same **routing** as in the baseline[36] year) and the final forecast of total flights per State is produced.

[36] i.e. the last MTF year

Figure 23. Overview of the long-term forecast model structure

Note: environment-related factors shown in green



A.2 Importance of different growth factors

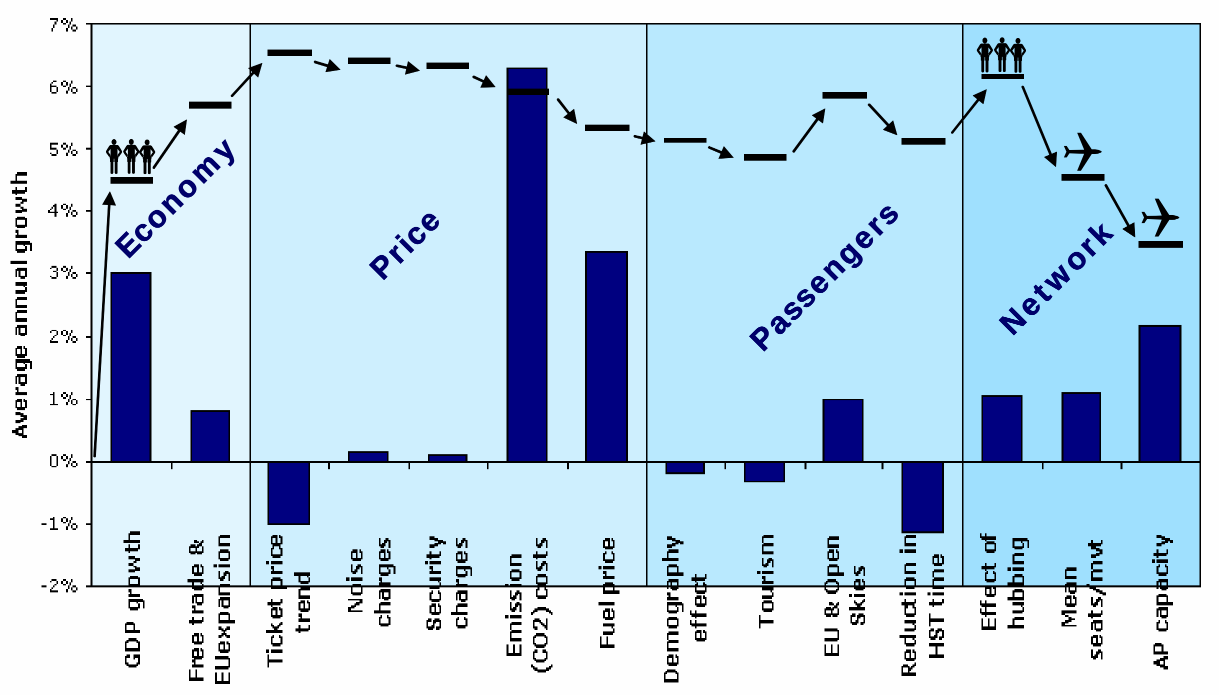
The forecast model combines several factors with different effects in terms of strength and direction on the future traffic growth. The 'economy'-related factors play the dominant upward-pushing role, reduced mainly by 'price', 'market structure' and 'airport capacity'.

The various factors entering the forecast model as described in Figure 23 in the previous section have each different impact on the forecast future traffic growth in terms of both, strength and direction. To understand the relative importance of the factors, Figure 24 illustrates how the input assumptions impact on the forecast traffic growth.

The figure presents a mix of the factors (bars in the graph) and shows schematically how these shift up or down the forecast growth in the number of passengers and movements (the dashes in the graph). The graph provides a simplified step-by-step picture of the direction and relative size of the shifts, rather than the precise values. In reality, the forecast model is much more complex with possible interactions between the factors, irregular time patterns and supplementary network effects. It is the mix of these that produces the final forecast and the reason why neither of them can be treated separately as for simplicity is suggested by the graph. Only the forecast of passenger flights is portrayed in Figure 24; all-cargo, GAT military, business aviation flights and infrequently-flown airport pairs are modelled explicitly with a simplified approach (see Annex A.1).

Figure 24. Mix of factors pushing the passenger demand and growth in traffic

Note: schematic simplified example



The long-term forecast method derives the growth in flights from the growth in passenger numbers. The passenger demand for air-transport is assumed to be closely related to **Economy** developments represented in the method by GDP growth. This can be boosted by new or extended free trade agreements or EU expansion and is converted into the passenger growth using a GDP multiplier, reflecting the maturity of the air-transport market in the respective region. GDP growth of 3% per annum boosted by extra 0.8% per annum due to a new free trade agreement results in somewhat less than 6% growth in passenger demand.

It is not only the changes in global economic conditions that influence the passengers' decisions to travel by air. An increase in the disposable income (represented by the GDP growth) and hence more money to spend on travel can be counterbalanced by equal or faster increase in **Price** of travel. There are several contributors to the evolution of fares: continuously decreasing trend in the air-ticket price is lifted by noise and security charges added to the cost, additional expenses of the airlines related to CO_2 emissions and oil price are passed onto the customers by increased fares. Naturally, changes in prices have inverse effect on the demand (higher price => less demand) determined by the price elasticity.

A decision to take a plane is of course not a result of the mere possibility to do so (even though one may argue that the strong growth of low-cost carriers proves the opposite). Leisure and business **Passengers** decide where and how they want to travel. Aging of population as well as changing tourism preferences can reduce the flight demand in some regions, EU expansion or Open Skies agreements can facilitate air-transport and encourage demand in others. Alternative means of transport such as high-speed rail may drag over some of the travellers if fast enough and providing comparable comfort. Travelling from one point to another may require taking several flights with a stronger hubbing system.

Demand in terms of number of passengers is converted into the number of flights using an assumption about the **Market Structure**, that is the structure of the fleet and use of aircraft. The expected increase in the mean size of aircraft coupled with increasing load factors reduces the growth, so the growth in fights is significantly less than in passenger numbers.

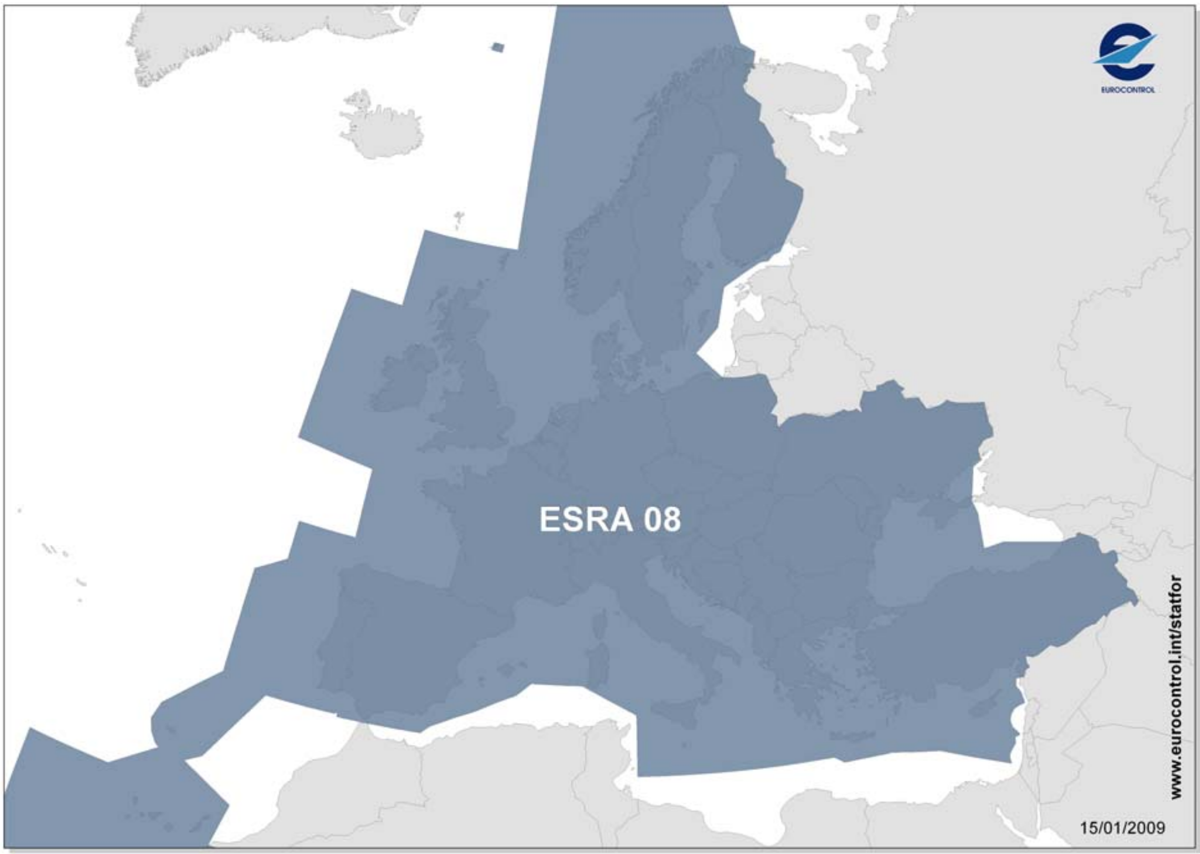
The airports' ability to serve the flights is represented by the **Airport Capacity** figures. Though the overall capacity of the system increases, it may not always be at the right place, right time or simply enough to allow for the growth in traffic as demanded.

ANNEX B. GEOGRAPHICAL DEFINITIONS

B.1 Eurocontrol Statistical Reference Area (ESRA)

The EUROCONTROL Statistical Reference Area (ESRA) is designed to include as much as possible of the ECAC area for which data are available from a range of sources within the Agency (CRCO, CFMU and STATFOR) sources. It is used for high-level reports from the Agency, when referring to 'total Europe'. The ESRA changes only slowly with time; a region is added to the ESRA only when there is a full year's data from all sources, so that growth calculations are possible. In this report, we use the new 'ESRA08' definition illustrated in the map below (see Ref.13 for more detail). Note that the EUROCONTROL forecast includes also regions outside of the ESRA (e.g. Armenia or Georgia).

Figure 25. The EUROCONTROL Statistical Reference Area.



The regions may be taken as referring to FIRs and UIRs or the airspace volumes of ACCs and other control centres. In the long-term forecast, traffic zones are represented by an aggregate of FIRs & UIR of States. These do not take delegation of airspace into account. The differences between charging areas and ACCs can have a big impact on overflight counts (and thus on total counts where the total is dominated by overflights). For the ESRA as a whole, there is only a small proportion of overflights, so that the difference between an FIR and an ACC definition is small.

B.2 Traffic regions

For this forecast, traffic flows are described as being to or from one of a number of traffic regions listed in Figure 26 (for example in Figure 30). Each region is made up of a number of traffic zones. Traffic zones are indicated in the table for brevity by the first letters of the ICAO location codes.

The traffic regions are defined for statistical convenience and do not reflect an official position of the EUROCONTROL Agency.

The ESRA was defined in the previous section. For flow purposes, this is split into a 'North-West' region mostly of mature air traffic markets, a 'Mediterranean' region stretching from the Canaries to Turkey and with a significant tourist element, and an Eastern region.

The 'Other region' includes the Baltic States and Oceanic. The Former CIS Region includes Armenia and Azerbaijan (members of ECAC). In time these will join the ESRA.

More details can be found in Definitions of the STATFOR Interactive Dashboard (Ref.13).

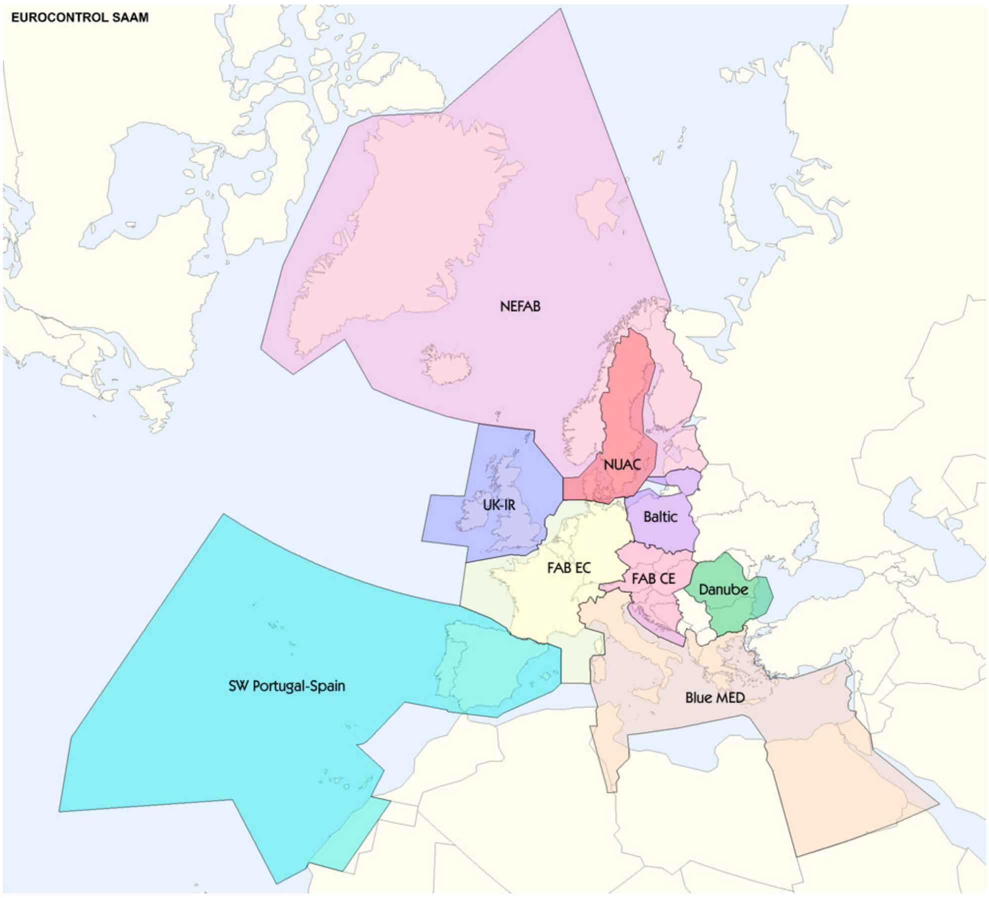
Figure 26. Regions used in flow statistics.

		ICAO region/country
ESRA		
ESRA1	ESRA North-West	EB, ED, EF, EG, EH, EI, EK, EL, EN, ES, ET, LF, LN, LO, LS
ESRA2	ESRA Mediterranean	GC, LC, LE, LG, LI, LM, LP, LT
ESRA3	ESRA East	BK, EP, LA, LB, LD, LH, LJ, LK, LQ, LR, LU, LW, LY, LZ, UK
World 1	North Atlantic	BG, BI, C, EK, K, P
World 2	Middle-East	O, L
World 3	North-Africa	DA, DT, GM, HE, HL, HS
World 4	Southern Africa	D, F, G, H, MR (except DA, DT, HE, HL, HS, GM, GE, and ESRA states)
World 5	Far-East	R,V, W, Z, (except ZZZZ)
World 6	Oceania	KG, N, P, Y
World 7	Mid-Atlantic	M; T (except MR)
World 8	South-Atlantic	S
World 9	Former CIS Region	U (excluding Ukraine which is now part of ESRA08)
Other	Other	EE, EN (Bodo Oc), EV, EY, GE, LP (Santa Maria FIR), LX

B.3 Functional Airspace Blocks

On top of the traffic zones, this report also presents the forecast of IFR movements in Functional Airspace Blocks (FAB). FABs are blocks of airspace[37] based on operational requirements regardless of the States boundaries (Figure 27).

Figure 27. Nine FABs are currently defined in the SES package.



This report uses FABs' definition as of February 2010, more details are available on-line through the STATFOR Interactive Dashboard (Ref.13). Note that the NUAC block is currently included in the NEFAB in STATFOR results, and that traffic statistics may be incomplete for the Blue Med FAB since we do not have complete data for Tunisia or Egypt.

[37] Further information at www.skybrary.aero/index.php/Functional_Airspace_Block_(FAB)

ANNEX C. SUMMARY FORECAST FOR ESRA

Figure 28: Annual traffic in ESRA

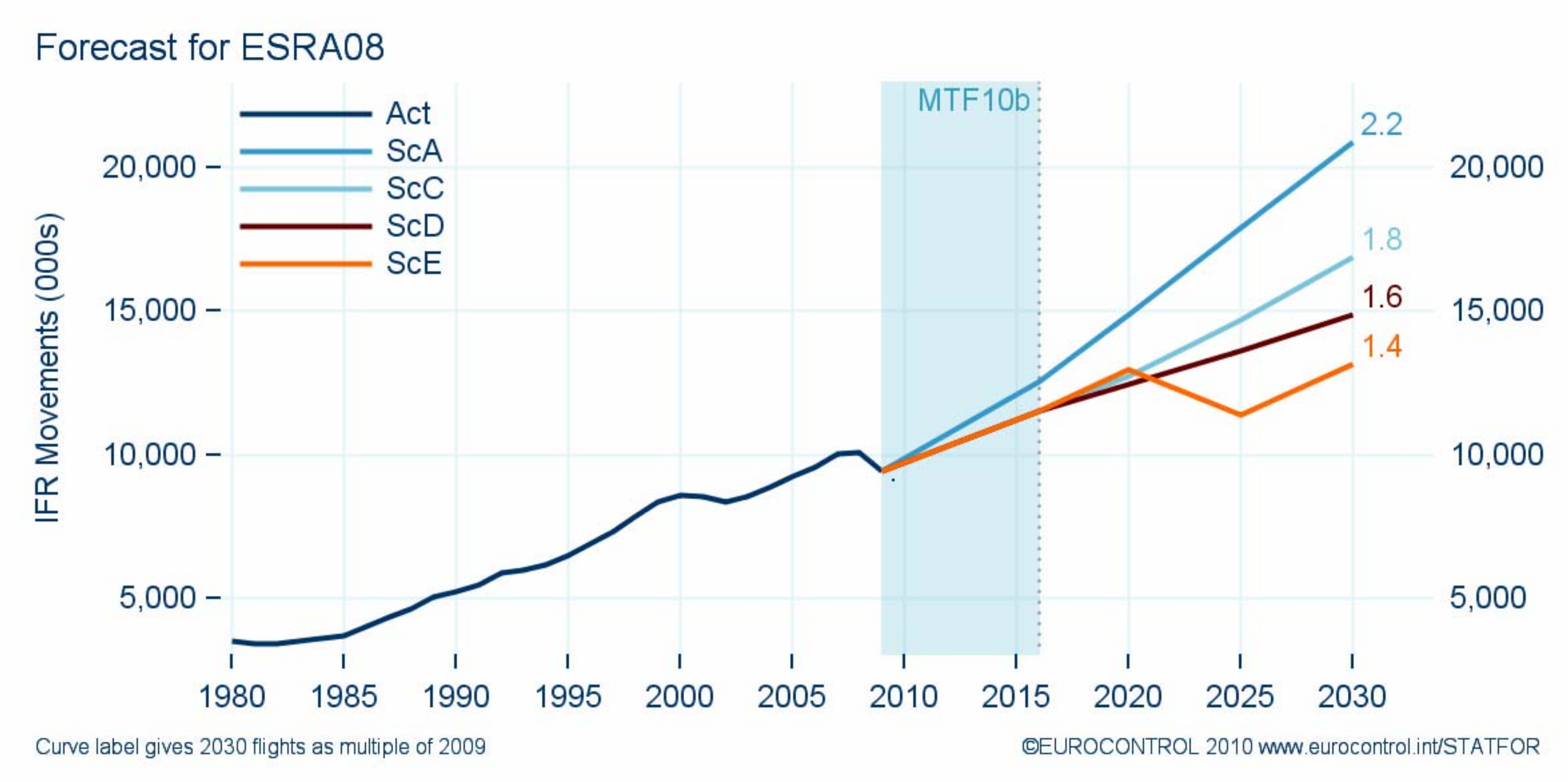


Figure 29: Annual traffic and growth by main flow categories in ESRA

		IFR Movements(000s)									Annual Growth									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2005	2006	2007	2008	2009	2016	2020	2025	2030	2005	2006	2007	2008	2009	2016	2020	2025	2030		
Total: Internal	ScA	7,640	7,903	8,241	8,182	7,602	9,770	11,523	13,643	15,582	.	3.4%	4.3%	-0.7%	-7.1%	3.6%	4.2%	3.4%	2.7%	**3.5%**	**2.0**
	ScC	.	.	.	.	.	9,007	9,858	11,234	12,730	.	.	.	.	.	2.5%	2.3%	2.6%	2.5%	**2.5%**	**1.7**
	ScD	.	.	.	.	.	9,007	9,716	10,585	11,468	.	.	.	.	.	2.5%	1.9%	1.7%	1.6%	**2.0%**	**1.5**
	ScE	.	.	.	.	.	9,007	10,040	8,460	9,610	.	.	.	.	.	2.5%	2.8%	-3.4%	2.6%	**1.1%**	**1.3**
Total: Arr/Dep	ScA	1,519	1,590	1,721	1,807	1,711	2,590	3,140	3,999	4,942	.	4.7%	8.2%	5.0%	-5.3%	6.1%	4.9%	5.0%	4.3%	**5.2%**	**2.9**
	ScC	.	.	.	.	.	2,371	2,681	3,241	3,851	.	.	.	.	.	4.8%	3.1%	3.9%	3.5%	**3.9%**	**2.3**
	ScD	.	.	.	.	.	2,371	2,548	2,830	3,163	.	.	.	.	.	4.8%	1.8%	2.1%	2.2%	**3.0%**	**1.8**
	ScE	.	.	.	.	.	2,371	2,721	2,736	3,291	.	.	.	.	.	4.8%	3.5%	0.1%	3.8%	**3.2%**	**1.9**
Total: Overflight	ScA	59	67	81	94	100	169	213	283	382	.	14%	20%	16%	7.1%	7.8%	5.9%	5.9%	6.2%	**6.6%**	**3.8**
	ScC	.	.	.	.	.	156	188	238	306	.	.	.	.	.	6.5%	4.8%	4.9%	5.1%	**5.4%**	**3.0**
	ScD	.	.	.	.	.	156	181	217	264	.	.	.	.	.	6.5%	3.8%	3.7%	4.0%	**4.7%**	**2.6**
	ScE	.	.	.	.	.	156	189	193	241	.	.	.	.	.	6.5%	4.9%	0.4%	4.6%	**4.3%**	**2.4**
Grand Total	ScA	9,218	9,561	10,043	10,083	9,413	12,529	14,877	17,925	20,906	.	3.7%	5.0%	0.4%	-6.6%	4.2%	4.4%	3.8%	3.1%	**3.9%**	**2.2**
	ScC	.	.	.	.	.	11,533	12,727	14,714	16,887	.	.	.	.	.	2.9%	2.5%	2.9%	2.8%	**2.8%**	**1.8**
	ScD	.	.	.	.	.	11,533	12,445	13,632	14,895	.	.	.	.	.	2.9%	1.9%	1.8%	1.8%	**2.2%**	**1.6**
	ScE	.	.	.	.	.	11,533	12,950	11,389	13,142	.	.	.	.	.	2.9%	2.9%	-2.5%	2.9%	**1.6%**	**1.4**

Figure 30. Annual traffic and growth on biggest region-to-region flows through ESRA.

				IFR Movements(000s)									Annual Growth									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
				2005	2006	2007	2008	2009	2016	2020	2025	2030	2005	2006	2007	2008	2009	2016	2020	2025	2030		
1	ESRA North-W	ESRA North-W	ScA	3878.2	3934.1	3995.6	3973.1	3665.3	4386.5	5041.4	5800.3	6312.7	.	1.4%	1.6%	-0.6%	-7.7%	2.6%	3.5%	2.8%	1.7%	**2.6%**	**1.7**
			ScC	.	.	.	.	.	4099.1	4381.2	4832.7	5302.0	.	.	.	.	.	1.6%	1.7%	2.0%	1.9%	**1.8%**	**1.4**
			ScD	.	.	.	.	.	4099.1	4357.6	4618.3	4888.3	.	.	.	.	.	1.6%	1.5%	1.2%	1.1%	**1.4%**	**1.3**
			ScE	.	.	.	.	.	4099.1	4446.4	3706.9	4115.1	.	.	.	.	.	1.6%	2.1%	-3.6%	2.1%	**0.6%**	**1.1**
2	ESRA Mediter	ESRA North-W	ScA	1569.7	1606.0	1709.5	1684.3	1548.8	2025.2	2320.1	2622.2	2889.2	.	2.3%	6.4%	-1.5%	-8.0%	3.9%	3.5%	2.5%	2.0%	**3.0%**	**1.9**
			ScC	.	.	.	.	.	1873.0	2004.4	2235.6	2490.3	.	.	.	.	.	2.8%	1.7%	2.2%	2.2%	**2.3%**	**1.6**
			ScD	.	.	.	.	.	1873.0	1955.2	2073.5	2165.7	.	.	.	.	.	2.8%	1.1%	1.2%	0.9%	**1.6%**	**1.4**
			ScE	.	.	.	.	.	1873.0	2033.2	1677.6	1852.7	.	.	.	.	.	2.8%	2.1%	-3.8%	2.0%	**0.9%**	**1.2**
3	ESRA Mediter	ESRA Mediter	ScA	1375.1	1471.4	1573.3	1518.2	1445.0	1907.8	2314.9	2811.3	3360.4	.	7.0%	6.9%	-3.5%	-4.8%	4.0%	5.0%	4.0%	3.6%	**4.1%**	**2.3**
			ScC	.	.	.	.	.	1747.8	1953.4	2272.4	2618.5	.	.	.	.	.	2.8%	2.8%	3.1%	2.9%	**2.9%**	**1.8**
			ScD	.	.	.	.	.	1747.8	1925.5	2137.6	2317.4	.	.	.	.	.	2.8%	2.5%	2.1%	1.6%	**2.3%**	**1.6**
			ScE	.	.	.	.	.	1747.8	1994.7	1682.7	1937.9	.	.	.	.	.	2.8%	3.4%	-3.3%	2.9%	**1.4%**	**1.3**
4	ESRA East	ESRA North-W	ScA	456.7	495.5	528.6	560.0	513.5	753.7	930.6	1166.0	1377.1	.	8.5%	6.7%	5.9%	-8.3%	5.6%	5.4%	4.6%	3.4%	**4.8%**	**2.7**
			ScC	.	.	.	.	.	671.6	772.4	934.2	1115.8	.	.	.	.	.	3.9%	3.6%	3.9%	3.6%	**3.8%**	**2.2**
			ScD	.	.	.	.	.	671.6	751.3	865.2	996.7	.	.	.	.	.	3.9%	2.8%	2.9%	2.9%	**3.2%**	**1.9**
			ScE	.	.	.	.	.	671.6	796.3	688.9	819.6	.	.	.	.	.	3.9%	4.3%	-2.9%	3.5%	**2.3%**	**1.6**
5	ESRA North-W	North Atlant	ScA	312.3	321.2	339.6	341.4	309.1	399.3	461.3	550.4	627.3	.	2.8%	5.7%	0.5%	-9.5%	3.7%	3.7%	3.6%	2.7%	**3.4%**	**2.0**
			ScC	.	.	.	.	.	368.4	401.9	471.2	534.7	.	.	.	.	.	2.5%	2.2%	3.2%	2.6%	**2.6%**	**1.7**
			ScD	.	.	.	.	.	368.4	367.0	373.8	384.0	.	.	.	.	.	2.5%	-0.1%	0.4%	0.5%	**1.0%**	**1.2**
			ScE	.	.	.	.	.	368.4	412.9	408.0	477.3	.	.	.	.	.	2.5%	2.9%	-0.2%	3.2%	**2.1%**	**1.5**
6	ESRA East	ESRA East	ScA	214.1	227.4	240.2	248.5	237.8	367.0	486.7	672.7	912.9	.	6.2%	5.6%	3.5%	-4.3%	6.4%	7.3%	6.7%	6.3%	**6.6%**	**3.8**
			ScC	.	.	.	.	.	322.8	392.6	500.8	631.6	.	.	.	.	.	4.5%	5.0%	5.0%	4.8%	**4.8%**	**2.7**
			ScD	.	.	.	.	.	322.8	384.1	472.2	588.3	.	.	.	.	.	4.5%	4.4%	4.2%	4.5%	**4.4%**	**2.5**
			ScE	.	.	.	.	.	322.8	406.6	367.2	462.5	.	.	.	.	.	4.5%	5.9%	-2.0%	4.7%	**3.2%**	**1.9**

				IFR Movements(000s)									Annual Growth									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
				2005	2006	2007	2008	2009	2016	2020	2025	2030	2005	2006	2007	2008	2009	2016	2020	2025	2030		
7	ESRA North-W	North-Africa	ScA	176.9	185.6	202.5	210.9	212.5	326.3	405.8	547.1	713.2	.	5.0%	9.1%	4.1%	0.8%	6.3%	5.6%	6.2%	5.4%	**5.9%**	**3.4**
			ScC	.	.	.	.	.	306.3	353.0	428.8	518.4	.	.	.	.	.	5.4%	3.6%	4.0%	3.9%	**4.3%**	**2.4**
			ScD	.	.	.	.	.	306.3	335.9	380.4	428.1	.	.	.	.	.	5.4%	2.3%	2.5%	2.4%	**3.4%**	**2.0**
			ScE	.	.	.	.	.	306.3	350.1	356.1	431.8	.	.	.	.	.	5.4%	3.4%	0.3%	3.9%	**3.4%**	**2.0**
8	ESRA East	ESRA Mediter	ScA	146.6	168.8	194.1	198.0	191.5	329.5	429.6	570.3	729.2	.	15%	15%	2.0%	-3.3%	8.1%	6.9%	5.8%	5.0%	**6.6%**	**3.8**
			ScC	.	.	.	.	.	292.5	353.7	458.8	572.2	.	.	.	.	.	6.2%	4.9%	5.3%	4.5%	**5.4%**	**3.0**
			ScD	.	.	.	.	.	292.5	342.6	418.1	511.7	.	.	.	.	.	6.2%	4.0%	4.1%	4.1%	**4.8%**	**2.7**
			ScE	.	.	.	.	.	292.5	363.2	337.1	422.5	.	.	.	.	.	6.2%	5.6%	-1.5%	4.6%	**3.8%**	**2.2**
9	ESRA North-W	Middle-East	ScA	139.5	142.6	148.3	156.8	157.9	231.5	268.4	333.7	372.8	.	2.3%	4.0%	5.7%	0.7%	5.6%	3.8%	4.5%	2.2%	**4.2%**	**2.4**
			ScC	.	.	.	.	.	212.2	233.7	276.0	314.5	.	.	.	.	.	4.3%	2.4%	3.4%	2.7%	**3.3%**	**2.0**
			ScD	.	.	.	.	.	212.2	223.0	238.2	255.5	.	.	.	.	.	4.3%	1.2%	1.3%	1.4%	**2.3%**	**1.6**
			ScE	.	.	.	.	.	212.2	235.3	241.2	274.9	.	.	.	.	.	4.3%	2.6%	0.5%	2.6%	**2.7%**	**1.7**
10	ESRA North-W	Far-East	ScA	129.6	141.2	150.0	155.2	145.6	218.9	264.9	316.0	360.4	.	8.9%	6.2%	3.5%	-6.2%	6.0%	4.9%	3.6%	2.7%	**4.4%**	**2.5**
			ScC	.	.	.	.	.	203.0	224.5	274.5	320.9	.	.	.	.	.	4.9%	2.6%	4.1%	3.2%	**3.8%**	**2.2**
			ScD	.	.	.	.	.	203.0	215.1	238.4	268.2	.	.	.	.	.	4.9%	1.5%	2.1%	2.4%	**3.0%**	**1.8**
			ScE	.	.	.	.	.	203.0	218.5	219.0	250.8	.	.	.	.	.	4.9%	1.9%	0.0%	2.8%	**2.6%**	**1.7**
11	ESRA North-W	Former CIS R	ScA	104.4	111.9	129.9	143.3	127.7	187.3	223.8	268.6	312.4	.	7.3%	16%	10%	-11%	5.6%	4.6%	3.7%	3.1%	**4.4%**	**2.4**
			ScC	.	.	.	.	.	170.9	192.0	222.3	252.6	.	.	.	.	.	4.3%	3.0%	3.0%	2.6%	**3.3%**	**2.0**
			ScD	.	.	.	.	.	170.9	185.1	202.9	222.5	.	.	.	.	.	4.3%	2.0%	1.8%	1.9%	**2.7%**	**1.7**
			ScE	.	.	.	.	.	170.9	199.2	192.7	232.6	.	.	.	.	.	4.3%	3.9%	-0.7%	3.8%	**2.9%**	**1.8**
12	ESRA Mediter	Middle-East	ScA	63.8	70.3	79.0	89.9	96.3	153.0	178.9	226.0	267.3	.	10%	12%	14%	7.1%	6.8%	4.0%	4.8%	3.4%	**5.0%**	**2.8**
			ScC	.	.	.	.	.	142.4	157.1	182.3	211.3	.	.	.	.	.	5.7%	2.5%	3.0%	3.0%	**3.8%**	**2.2**
			ScD	.	.	.	.	.	142.4	153.5	167.8	182.6	.	.	.	.	.	5.7%	1.9%	1.8%	1.7%	**3.1%**	**1.9**
			ScE	.	.	.	.	.	142.4	158.0	170.8	193.3	.	.	.	.	.	5.7%	2.6%	1.6%	2.5%	**3.4%**	**2.0**

ANNEX D. SUMMARY FORECAST BY REGION

Figure 31. Annual traffic per traffic zone and FAB[38].

		IFR Movements(000s)									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2005	2006	2007	2008	2009	2016	2020	2025	2030		
Albania	ScA	116	119	142	148	161	252	298	366	457	5.1%	2.8
	ScC	.	.	.	.	.	231	260	310	364	4.0%	2.3
	ScD	.	.	.	.	.	231	246	270	297	3.0%	1.8
	ScE	.	.	.	.	.	231	263	243	281	2.7%	1.7
Armenia	ScA	42	43	48	52	48	87	117	167	239	7.9%	4.9
	ScC	.	.	.	.	.	78	98	131	174	6.3%	3.6
	ScD	.	.	.	.	.	78	95	121	154	5.7%	3.2
	ScE	.	.	.	.	.	78	100	110	150	5.5%	3.1
Austria	ScA	1,049	1,092	1,180	1,204	1,113	1,575	1,878	2,262	2,571	4.1%	2.3
	ScC	.	.	.	.	.	1,438	1,603	1,876	2,158	3.2%	1.9
	ScD	.	.	.	.	.	1,438	1,550	1,703	1,862	2.5%	1.7
	ScE	.	.	.	.	.	1,438	1,630	1,426	1,643	1.9%	1.5
Azerbaijan	ScA	.	92	95	108	108	193	251	338	462	7.1%	4.3
	ScC	.	.	.	.	.	175	212	275	354	5.8%	3.3
	ScD	.	.	.	.	.	175	206	253	314	5.2%	2.9
	ScE	.	.	.	.	.	175	219	244	321	5.3%	3.0
Belarus	ScA	130	146	173	199	182	289	360	458	576	5.6%	3.2
	ScC	.	.	.	.	.	260	301	366	439	4.3%	2.4
	ScD	.	.	.	.	.	260	289	331	382	3.6%	2.1
	ScE	.	.	.	.	.	260	311	306	378	3.5%	2.1
Belgium/Luxembourg	ScA	1,007	1,056	1,100	1,108	1,020	1,329	1,548	1,812	2,048	3.4%	2.0
	ScC	.	.	.	.	.	1,228	1,338	1,534	1,740	2.6%	1.7
	ScD	.	.	.	.	.	1,228	1,301	1,400	1,507	1.9%	1.5
	ScE	.	.	.	.	.	1,228	1,357	1,179	1,337	1.3%	1.3
Bosnia-Herzegovina	ScA	159	168	201	218	224	373	457	575	701	5.6%	3.1
	ScC	.	.	.	.	.	336	387	474	571	4.5%	2.5
	ScD	.	.	.	.	.	336	370	421	480	3.7%	2.1
	ScE	.	.	.	.	.	336	393	362	439	3.2%	2.0

[38] NUAC is currently included in NEFAB in STATFOR results

		IFR Movements(000s)									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2005	2006	2007	2008	2009	2016	2020	2025	2030		
Bulgaria	ScA	395	402	444	478	477	746	910	1,124	1,311	4.9%	2.7
	ScC	.	.	.	.	.	679	777	953	1,122	4.2%	2.4
	ScD	.	.	.	.	.	679	751	857	981	3.5%	2.1
	ScE	.	.	.	.	.	679	789	768	933	3.2%	2.0
Canary Islands	ScA	291	303	308	307	267	359	416	503	606	4.0%	2.3
	ScC	.	.	.	.	.	325	346	389	443	2.4%	1.7
	ScD	.	.	.	.	.	325	333	349	368	1.5%	1.4
	ScE	.	.	.	.	.	325	353	274	299	0.6%	1.1
Croatia	ScA	331	339	398	422	422	652	789	976	1,183	5.0%	2.8
	ScC	.	.	.	.	.	590	671	801	950	3.9%	2.3
	ScD	.	.	.	.	.	590	647	725	812	3.2%	1.9
	ScE	.	.	.	.	.	590	681	623	739	2.7%	1.8
Cyprus	ScA	209	217	242	272	268	417	510	670	841	5.6%	3.1
	ScC	.	.	.	.	.	377	431	524	634	4.2%	2.4
	ScD	.	.	.	.	.	377	413	464	525	3.3%	2.0
	ScE	.	.	.	.	.	377	435	435	521	3.2%	1.9
Czech Republic	ScA	597	612	646	682	648	934	1,120	1,379	1,620	4.5%	2.5
	ScC	.	.	.	.	.	844	938	1,113	1,301	3.4%	2.0
	ScD	.	.	.	.	.	844	911	1,008	1,119	2.6%	1.7
	ScE	.	.	.	.	.	844	965	834	943	1.8%	1.5
Denmark	ScA	585	602	631	629	576	763	900	1,087	1,206	3.6%	2.1
	ScC	.	.	.	.	.	711	779	905	1,039	2.9%	1.8
	ScD	.	.	.	.	.	711	757	823	894	2.1%	1.6
	ScE	.	.	.	.	.	711	792	682	785	1.5%	1.4
Estonia	ScA	145	137	153	174	153	228	288	375	470	5.5%	3.1
	ScC	.	.	.	.	.	208	239	295	363	4.2%	2.4
	ScD	.	.	.	.	.	208	232	270	318	3.5%	2.1
	ScE	.	.	.	.	.	208	244	232	287	3.0%	1.9
FYROM	ScA	111	118	123	125	125	189	229	289	361	5.2%	2.9
	ScC	.	.	.	.	.	170	196	239	288	4.0%	2.3
	ScD	.	.	.	.	.	170	184	209	241	3.2%	1.9
	ScE	.	.	.	.	.	170	199	179	214	2.6%	1.7
Finland	ScA	242	246	245	261	240	311	379	471	561	4.1%	2.3
	ScC	.	.	.	.	.	289	321	373	434	2.9%	1.8
	ScD	.	.	.	.	.	289	315	347	383	2.2%	1.6
	ScE	.	.	.	.	.	289	327	278	323	1.4%	1.3

		IFR Movements(000s)									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2005	2006	2007	2008	2009	2016	2020	2025	2030		
France	ScA	2,747	2,854	3,025	3,020	2,801	3,591	4,133	4,724	5,282	3.1%	1.9
	ScC	.	.	.	.	.	3,326	3,573	3,984	4,450	2.2%	1.6
	ScD	.	.	.	.	.	3,326	3,495	3,710	3,923	1.6%	1.4
	ScE	.	.	.	.	.	3,326	3,619	3,117	3,478	1.0%	1.2
Georgia	ScA	74	73	80	80	77	138	176	234	312	6.9%	4.0
	ScC	.	.	.	.	.	125	149	189	238	5.5%	3.1
	ScD	.	.	.	.	.	125	145	174	210	4.9%	2.7
	ScE	.	.	.	.	.	125	151	166	209	4.8%	2.7
Germany	ScA	2,852	2,971	3,108	3,151	2,930	3,930	4,566	5,308	5,868	3.4%	2.0
	ScC	.	.	.	.	.	3,609	3,920	4,473	4,996	2.6%	1.7
	ScD	.	.	.	.	.	3,609	3,827	4,130	4,430	2.0%	1.5
	ScE	.	.	.	.	.	3,609	3,987	3,404	3,843	1.3%	1.3
Greece	ScA	548	566	621	643	638	883	1,049	1,293	1,556	4.3%	2.4
	ScC	.	.	.	.	.	802	889	1,045	1,224	3.2%	1.9
	ScD	.	.	.	.	.	802	853	929	1,012	2.2%	1.6
	ScE	.	.	.	.	.	802	900	812	949	1.9%	1.5
Hungary	ScA	579	605	615	622	608	894	1,094	1,373	1,623	4.8%	2.7
	ScC	.	.	.	.	.	808	927	1,133	1,343	3.9%	2.2
	ScD	.	.	.	.	.	808	890	1,014	1,157	3.1%	1.9
	ScE	.	.	.	.	.	808	943	882	1,061	2.7%	1.7
Iceland	ScA	96	100	105	110	101	141	167	204	244	4.3%	2.4
	ScC	.	.	.	.	.	129	144	171	200	3.3%	2.0
	ScD	.	.	.	.	.	129	134	142	151	1.9%	1.5
	ScE	.	.	.	.	.	129	147	145	169	2.5%	1.7
Ireland	ScA	536	565	598	601	530	731	869	1,065	1,209	4.0%	2.3
	ScC	.	.	.	.	.	648	714	844	993	3.0%	1.9
	ScD	.	.	.	.	.	648	678	731	799	2.0%	1.5
	ScE	.	.	.	.	.	648	728	667	778	1.8%	1.5
Italy	ScA	1,577	1,641	1,779	1,736	1,647	2,277	2,698	3,213	3,753	4.0%	2.3
	ScC	.	.	.	.	.	2,090	2,302	2,642	3,026	2.9%	1.8
	ScD	.	.	.	.	.	2,090	2,233	2,416	2,602	2.2%	1.6
	ScE	.	.	.	.	.	2,090	2,335	1,998	2,267	1.5%	1.4
Latvia	ScA	155	176	202	225	206	320	408	542	667	5.8%	3.2
	ScC	.	.	.	.	.	291	337	421	524	4.5%	2.5
	ScD	.	.	.	.	.	291	328	386	460	3.9%	2.2
	ScE	.	.	.	.	.	291	345	326	407	3.3%	2.0

		IFR Movements(000s)									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2005	2006	2007	2008	2009	2016	2020	2025	2030		
Lisbon FIR	ScA	380	401	427	438	406	542	614	717	837	3.5%	2.1
	ScC	.	.	.	.	.	496	526	587	664	2.4%	1.6
	ScD	.	.	.	.	.	496	507	525	543	1.4%	1.3
	ScE	.	.	.	.	.	496	536	435	483	0.8%	1.2
Lithuania	ScA	163	173	195	219	192	301	376	489	605	5.6%	3.2
	ScC	.	.	.	.	.	272	314	389	476	4.4%	2.5
	ScD	.	.	.	.	.	272	305	359	421	3.8%	2.2
	ScE	.	.	.	.	.	272	323	305	372	3.2%	1.9
Malta	ScA	75	76	82	84	85	142	170	215	267	5.6%	3.1
	ScC	.	.	.	.	.	127	144	171	204	4.3%	2.4
	ScD	.	.	.	.	.	127	139	156	177	3.5%	2.1
	ScE	.	.	.	.	.	127	145	139	165	3.2%	1.9
Moldova	ScA	26	28	35	41	44	80	104	141	186	7.1%	4.2
	ScC	.	.	.	.	.	71	86	110	139	5.7%	3.2
	ScD	.	.	.	.	.	71	83	99	120	4.9%	2.7
	ScE	.	.	.	.	.	71	87	89	114	4.7%	2.6
Netherlands	ScA	996	1,056	1,108	1,090	996	1,294	1,508	1,807	2,016	3.4%	2.0
	ScC	.	.	.	.	.	1,203	1,306	1,507	1,710	2.6%	1.7
	ScD	.	.	.	.	.	1,203	1,269	1,363	1,468	1.9%	1.5
	ScE	.	.	.	.	.	1,203	1,330	1,153	1,316	1.3%	1.3
Norway	ScA	484	513	536	550	526	675	810	1,003	1,131	3.7%	2.2
	ScC	.	.	.	.	.	625	686	791	907	2.6%	1.7
	ScD	.	.	.	.	.	625	672	733	796	2.0%	1.5
	ScE	.	.	.	.	.	625	699	598	698	1.4%	1.3
Poland	ScA	423	491	556	612	566	890	1,089	1,364	1,653	5.2%	2.9
	ScC	.	.	.	.	.	806	909	1,088	1,285	4.0%	2.3
	ScD	.	.	.	.	.	806	883	998	1,127	3.3%	2.0
	ScE	.	.	.	.	.	806	937	842	1,008	2.8%	1.8
Romania	ScA	411	416	432	444	434	737	936	1,240	1,565	6.3%	3.6
	ScC	.	.	.	.	.	657	772	980	1,217	5.0%	2.8
	ScD	.	.	.	.	.	657	749	889	1,064	4.4%	2.5
	ScE	.	.	.	.	.	657	782	755	939	3.7%	2.2
Santa Maria FIR	ScA	106	107	109	116	113	154	178	214	262	4.1%	2.3
	ScC	.	.	.	.	.	140	153	177	208	3.0%	1.8
	ScD	.	.	.	.	.	140	141	146	151	1.4%	1.3
	ScE	.	.	.	.	.	140	155	143	166	1.9%	1.5

		IFR Movements(000s)									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2005	2006	2007	2008	2009	2016	2020	2025	2030		
Serbia&Montenegro	ScA	361	393	458	497	513	793	959	1,182	1,388	4.9%	2.7
	ScC	.	.	.	.	.	722	835	1,012	1,187	4.1%	2.3
	ScD	.	.	.	.	.	722	788	892	1,014	3.3%	2.0
	ScE	.	.	.	.	.	722	846	788	940	2.9%	1.8
Slovakia	ScA	318	330	324	345	337	550	668	838	999	5.3%	3.0
	ScC	.	.	.	.	.	495	559	674	793	4.2%	2.4
	ScD	.	.	.	.	.	495	541	606	682	3.4%	2.0
	ScE	.	.	.	.	.	495	571	526	623	3.0%	1.8
Slovenia	ScA	257	267	306	327	313	463	556	675	792	4.5%	2.5
	ScC	.	.	.	.	.	420	474	561	653	3.6%	2.1
	ScD	.	.	.	.	.	420	457	508	564	2.8%	1.8
	ScE	.	.	.	.	.	420	482	435	513	2.4%	1.6
Spain	ScA	1,561	1,641	1,779	1,747	1,581	2,055	2,409	2,899	3,481	3.8%	2.2
	ScC	.	.	.	.	.	1,870	2,018	2,288	2,612	2.4%	1.7
	ScD	.	.	.	.	.	1,870	1,960	2,096	2,224	1.6%	1.4
	ScE	.	.	.	.	.	1,870	2,052	1,672	1,853	0.8%	1.2
Sweden	ScA	664	689	708	736	654	862	1,035	1,263	1,436	3.8%	2.2
	ScC	.	.	.	.	.	802	892	1,040	1,201	2.9%	1.8
	ScD	.	.	.	.	.	802	869	953	1,044	2.3%	1.6
	ScE	.	.	.	.	.	802	909	796	928	1.7%	1.4
Switzerland	ScA	1,008	1,032	1,093	1,096	1,018	1,343	1,556	1,734	1,883	3.0%	1.8
	ScC	.	.	.	.	.	1,241	1,346	1,504	1,671	2.4%	1.6
	ScD	.	.	.	.	.	1,241	1,314	1,395	1,474	1.8%	1.4
	ScE	.	.	.	.	.	1,241	1,365	1,151	1,281	1.1%	1.3
Turkey	ScA	642	693	757	822	857	1,467	1,813	2,230	2,618	5.5%	3.1
	ScC	.	.	.	.	.	1,372	1,607	1,985	2,350	4.9%	2.7
	ScD	.	.	.	.	.	1,372	1,574	1,845	2,097	4.4%	2.4
	ScE	.	.	.	.	.	1,372	1,634	1,695	2,082	4.3%	2.4
Ukraine	ScA	341	345	373	406	378	645	823	1,088	1,414	6.5%	3.7
	ScC	.	.	.	.	.	589	696	880	1,091	5.2%	2.9
	ScD	.	.	.	.	.	589	672	794	949	4.5%	2.5
	ScE	.	.	.	.	.	589	706	708	894	4.2%	2.4
UK	ScA	2,385	2,465	2,550	2,514	2,278	2,787	3,191	3,767	4,336	3.1%	1.9
	ScC	.	.	.	.	.	2,606	2,802	3,178	3,639	2.3%	1.6
	ScD	.	.	.	.	.	2,606	2,745	2,919	3,131	1.5%	1.4
	ScE	.	.	.	.	.	2,606	2,841	2,528	2,854	1.1%	1.3

		IFR Movements(000s)									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2005	2006	2007	2008	2009	2016	2020	2025	2030		
ESRA02	ScA	9,088	9,439	9,916	9,954	9,301	12,346	14,628	17,567	20,393	3.8%	2.2
	ScC	.	.	.	.	.	11,366	12,521	14,445	16,538	2.8%	1.8
	ScD	.	.	.	.	.	11,366	12,243	13,378	14,573	2.2%	1.6
	ScE	.	.	.	.	.	11,366	12,735	11,181	12,864	1.6%	1.4
EU27	ScA	8,638	8,937	9,441	9,470	8,787	11,552	13,633	16,369	19,044	3.8%	2.2
	ScC	.	.	.	.	.	10,615	11,637	13,372	15,297	2.7%	1.7
	ScD	.	.	.	.	.	10,615	11,366	12,345	13,426	2.0%	1.5
	ScE	.	.	.	.	.	10,615	11,835	10,272	11,745	1.4%	1.3
ESRA08	ScA	9,218	9,561	10,043	10,083	9,413	12,529	14,877	17,925	20,906	3.9%	2.2
	ScC	.	.	.	.	.	11,533	12,727	14,714	16,887	2.8%	1.8
	ScD	.	.	.	.	.	11,533	12,445	13,632	14,895	2.2%	1.6
	ScE	.	.	.	.	.	11,533	12,950	11,389	13,142	1.6%	1.4
SES	ScA	9,016	9,337	9,794	9,833	9,152	12,023	14,213	17,110	19,940	3.8%	2.2
	ScC	.	.	.	.	.	11,050	12,131	13,957	15,985	2.7%	1.7
	ScD	.	.	.	.	.	11,050	11,851	12,898	14,058	2.1%	1.5
	ScE	.	.	.	.	.	11,050	12,335	10,727	12,289	1.4%	1.3
Baltic	ScA	.	.	.	704	644	998	1,230	1,562	1,914	5.3%	3.0
	ScC	.	.	.	.	.	902	1,025	1,238	1,478	4.0%	2.3
	ScD	.	.	.	.	.	902	997	1,137	1,299	3.4%	2.0
	ScE	.	.	.	.	.	902	1,057	958	1,156	2.8%	1.8
Blue Med[39]	ScA	.	.	.	2,310	2,225	3,109	3,715	4,525	5,401	4.3%	2.4
	ScC	.	.	.	.	.	2,841	3,155	3,673	4,266	3.1%	1.9
	ScD	.	.	.	.	.	2,841	3,053	3,338	3,645	2.4%	1.6
	ScE	.	.	.	.	.	2,841	3,200	2,807	3,238	1.8%	1.5
Danube	ScA	.	.	.	690	687	1,138	1,415	1,809	2,195	5.7%	3.2
	ScC	.	.	.	.	.	1,025	1,189	1,482	1,796	4.7%	2.6
	ScD	.	.	.	.	.	1,025	1,151	1,340	1,570	4.0%	2.3
	ScE	.	.	.	.	.	1,025	1,205	1,163	1,423	3.5%	2.1
FAB CE	ScA	.	.	.	1,904	1,806	2,638	3,180	3,906	4,574	4.5%	2.5
	ScC	.	.	.	.	.	2,391	2,690	3,194	3,732	3.5%	2.1
	ScD	.	.	.	.	.	2,391	2,601	2,897	3,223	2.8%	1.8
	ScE	.	.	.	.	.	2,391	2,745	2,438	2,837	2.2%	1.6
FAB EC	ScA	.	.	.	5,816	5,406	7,044	8,147	9,440	10,534	3.2%	1.9
	ScC	.	.	.	.	.	6,512	7,041	7,951	8,900	2.4%	1.6
	ScD	.	.	.	.	.	6,512	6,882	7,363	7,846	1.8%	1.5
	ScE	.	.	.	.	.	6,512	7,146	6,157	6,922	1.2%	1.3

[39] Traffic statistics for Blue Med may be incomplete since we do not have complete data for Tunisia or Egypt

		IFR Movements(000s)									AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2005	2006	2007	2008	2009	2016	2020	2025	2030		
NEFAB[40]	ScA	.	.	.	1,652	1,513	1,991	2,400	2,963	3,417	**4.0%**	**2.3**
	ScC	.	.	.	.	.	1,846	2,047	2,385	2,761	**2.9%**	**1.8**
	ScD	.	.	.	.	.	1,846	1,995	2,189	2,404	**2.2%**	**1.6**
	ScE	.	.	.	.	.	1,846	2,087	1,817	2,125	**1.6%**	**1.4**
SW Portugal - Spai	ScA	.	.	.	1,969	1,786	2,317	2,715	3,279	3,957	**3.9%**	**2.2**
	ScC	.	.	.	.	.	2,111	2,279	2,584	2,956	**2.4%**	**1.7**
	ScD	.	.	.	.	.	2,111	2,213	2,361	2,509	**1.6%**	**1.4**
	ScE	.	.	.	.	.	2,111	2,317	1,895	2,108	**0.8%**	**1.2**
UK-Ireland	ScA	.	.		2,559	2,316	2,851	3,270	3,867	4,448	**3.2%**	**1.9**
	ScC	.	.	.	.	.	2,653	2,855	3,241	3,715	**2.3%**	**1.6**
	ScD	.	.	.	.	.	2,653	2,796	2,976	3,196	**1.5%**	**1.4**
	ScE	.	.	.	.	.	2,653	2,894	2,575	2,909	**1.1%**	**1.3**

Figure 32: Annual growth per traffic zone and FAB[41].

		Average Annual Growth								AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2006	2007	2008	2009	2016 / 2010	2020 / 2017	2025 / 2021	2030 / 2026		
Albania	ScA	2.7%	19%	4.5%	8.9%	6.5%	4.3%	4.2%	4.6%	**5.1%**	**2.8**
	ScC	.	.	.	.	5.2%	3.1%	3.6%	3.3%	**4.0%**	**2.3**
	ScD	.	.	.	.	5.2%	1.6%	1.9%	1.9%	**3.0%**	**1.8**
	ScE	.	.	.	.	5.2%	3.3%	-1.6%	3.0%	**2.7%**	**1.7**
Armenia	ScA	2.6%	11%	8.0%	-6.7%	8.7%	7.8%	7.4%	7.4%	**7.9%**	**4.9**
	ScC	.	.	.	.	7.0%	5.9%	6.0%	5.9%	**6.3%**	**3.6**
	ScD	.	.	.	.	7.0%	5.1%	4.9%	5.0%	**5.7%**	**3.2**
	ScE	.	.	.	.	7.0%	6.5%	2.0%	6.3%	**5.5%**	**3.1**
Austria	ScA	4.1%	8.1%	2.0%	-7.6%	5.1%	4.5%	3.8%	2.6%	**4.1%**	**2.3**
	ScC	.	.	.	.	3.7%	2.8%	3.2%	2.8%	**3.2%**	**1.9**
	ScD	.	.	.	.	3.7%	1.9%	1.9%	1.8%	**2.5%**	**1.7**
	ScE	.	.	.	.	3.7%	3.2%	-2.6%	2.9%	**1.9%**	**1.5**
Azerbaijan	ScA	.	4.3%	13%	0.5%	8.6%	6.7%	6.2%	6.4%	**7.1%**	**4.3**
	ScC	.	.	.	.	7.1%	4.9%	5.3%	5.2%	**5.8%**	**3.3**
	ScD	.	.	.	.	7.1%	4.1%	4.2%	4.4%	**5.2%**	**2.9**
	ScE	.	.	.	.	7.1%	5.8%	2.1%	5.6%	**5.3%**	**3.0**

[40] NUAC is currently included here
[41] NUAC is currently included in NEFAB in STATFOR results

		Average Annual Growth								AAGR	Traffic Multiple
		2006	2007	2008	2009	2016 / 2010	2020 / 2017	2025 / 2021	2030 / 2026	2030/ 2009	2030/ 2009
Belarus	ScA	13%	18%	16%	-8.6%	6.8%	5.6%	5.0%	4.7%	5.6%	3.2
	ScC	.	.	.	.	5.2%	3.7%	4.0%	3.7%	4.3%	2.4
	ScD	.	.	.	.	5.2%	2.7%	2.8%	2.9%	3.6%	2.1
	ScE	.	.	.	.	5.2%	4.6%	-0.3%	4.3%	3.5%	2.1
Belgium/Luxembourg	ScA	4.9%	4.2%	0.7%	-7.9%	3.8%	3.9%	3.2%	2.5%	3.4%	2.0
	ScC	.	.	.	.	2.7%	2.2%	2.8%	2.6%	2.6%	1.7
	ScD	.	.	.	.	2.7%	1.4%	1.5%	1.5%	1.9%	1.5
	ScE	.	.	.	.	2.7%	2.5%	-2.8%	2.6%	1.3%	1.3
Bosnia-Herzegovina	ScA	5.5%	19%	8.5%	3.1%	7.6%	5.2%	4.7%	4.0%	5.6%	3.1
	ScC	.	.	.	.	6.0%	3.6%	4.1%	3.8%	4.5%	2.5
	ScD	.	.	.	.	6.0%	2.4%	2.6%	2.6%	3.7%	2.1
	ScE	.	.	.	.	6.0%	4.0%	-1.6%	3.9%	3.2%	2.0
Bulgaria	ScA	1.6%	11%	7.7%	-0.2%	6.6%	5.1%	4.3%	3.1%	4.9%	2.7
	ScC	.	.	.	.	5.2%	3.4%	4.2%	3.3%	4.2%	2.4
	ScD	.	.	.	.	5.2%	2.6%	2.7%	2.7%	3.5%	2.1
	ScE	.	.	.	.	5.2%	3.8%	-0.5%	4.0%	3.2%	2.0
Canary Islands	ScA	4.0%	1.7%	-0.2%	-13%	4.3%	3.8%	3.8%	3.8%	4.0%	2.3
	ScC	.	.	.	.	2.9%	1.6%	2.4%	2.6%	2.4%	1.7
	ScD	.	.	.	.	2.9%	0.6%	0.9%	1.1%	1.5%	1.4
	ScE	.	.	.	.	2.9%	2.1%	-4.9%	1.8%	0.6%	1.1
Croatia	ScA	2.4%	17%	6.0%	0.1%	6.4%	4.9%	4.3%	3.9%	5.0%	2.8
	ScC	.	.	.	.	4.9%	3.3%	3.6%	3.5%	3.9%	2.3
	ScD	.	.	.	.	4.9%	2.3%	2.3%	2.3%	3.2%	1.9
	ScE	.	.	.	.	4.9%	3.7%	-1.8%	3.5%	2.7%	1.8
Cyprus	ScA	4.1%	12%	12%	-1.7%	6.5%	5.2%	5.6%	4.6%	5.6%	3.1
	ScC	.	.	.	.	5.0%	3.4%	4.0%	3.9%	4.2%	2.4
	ScD	.	.	.	.	5.0%	2.3%	2.4%	2.5%	3.3%	2.0
	ScE	.	.	.	.	5.0%	3.6%	-0.0%	3.7%	3.2%	1.9
Czech Republic	ScA	2.4%	5.6%	5.5%	-5.0%	5.4%	4.6%	4.3%	3.3%	4.5%	2.5
	ScC	.	.	.	.	3.9%	2.7%	3.5%	3.2%	3.4%	2.0
	ScD	.	.	.	.	3.9%	1.9%	2.0%	2.1%	2.6%	1.7
	ScE	.	.	.	.	3.9%	3.4%	-2.9%	2.5%	1.8%	1.5
Denmark	ScA	2.9%	4.8%	-0.3%	-8.5%	4.1%	4.2%	3.8%	2.1%	3.6%	2.1
	ScC	.	.	.	.	3.1%	2.3%	3.0%	2.8%	2.9%	1.8
	ScD	.	.	.	.	3.1%	1.6%	1.7%	1.7%	2.1%	1.6
	ScE	.	.	.	.	3.1%	2.7%	-2.9%	2.8%	1.5%	1.4

		Average Annual Growth									
		2006	2007	2008	2009	2016 / 2010	2020 / 2017	2025 / 2021	2030 / 2026	AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
Estonia	ScA	-5.7%	12%	13%	-12%	5.9%	6.0%	5.4%	4.7%	5.5%	3.1
	ScC	.	.	.	.	4.5%	3.6%	4.3%	4.2%	4.2%	2.4
	ScD	.	.	.	.	4.5%	2.9%	3.1%	3.3%	3.5%	2.1
	ScE	.	.	.	.	4.5%	4.1%	-1.0%	4.3%	3.0%	1.9
FYROM	ScA	6.8%	3.9%	2.0%	-0.1%	6.1%	4.9%	4.8%	4.5%	5.2%	2.9
	ScC	.	.	.	.	4.5%	3.6%	4.0%	3.8%	4.0%	2.3
	ScD	.	.	.	.	4.5%	2.0%	2.5%	2.9%	3.2%	1.9
	ScE	.	.	.	.	4.5%	4.0%	-2.1%	3.6%	2.6%	1.7
Finland	ScA	1.4%	-0.3%	6.3%	-7.7%	3.7%	5.1%	4.4%	3.6%	4.1%	2.3
	ScC	.	.	.	.	2.7%	2.7%	3.1%	3.1%	2.9%	1.8
	ScD	.	.	.	.	2.7%	2.1%	1.9%	2.0%	2.2%	1.6
	ScE	.	.	.	.	2.7%	3.1%	-3.2%	3.1%	1.4%	1.3
France	ScA	3.9%	6.0%	-0.2%	-7.3%	3.6%	3.6%	2.7%	2.3%	3.1%	1.9
	ScC	.	.	.	.	2.5%	1.8%	2.2%	2.2%	2.2%	1.6
	ScD	.	.	.	.	2.5%	1.2%	1.2%	1.1%	1.6%	1.4
	ScE	.	.	.	.	2.5%	2.1%	-2.9%	2.2%	1.0%	1.2
Georgia	ScA	-1.2%	9.7%	-0.0%	-3.6%	8.6%	6.3%	5.9%	5.9%	6.9%	4.0
	ScC	.	.	.	.	7.1%	4.5%	4.9%	4.7%	5.5%	3.1
	ScD	.	.	.	.	7.1%	3.7%	3.7%	3.9%	4.9%	2.7
	ScE	.	.	.	.	7.1%	4.8%	1.8%	4.8%	4.8%	2.7
Germany	ScA	4.2%	4.6%	1.4%	-7.0%	4.3%	3.8%	3.1%	2.0%	3.4%	2.0
	ScC	.	.	.	.	3.0%	2.1%	2.7%	2.2%	2.6%	1.7
	ScD	.	.	.	.	3.0%	1.5%	1.5%	1.4%	2.0%	1.5
	ScE	.	.	.	.	3.0%	2.5%	-3.1%	2.5%	1.3%	1.3
Greece	ScA	3.2%	9.9%	3.4%	-0.8%	4.8%	4.4%	4.3%	3.8%	4.3%	2.4
	ScC	.	.	.	.	3.3%	2.6%	3.3%	3.2%	3.2%	1.9
	ScD	.	.	.	.	3.3%	1.5%	1.7%	1.7%	2.2%	1.6
	ScE	.	.	.	.	3.3%	2.9%	-2.0%	3.2%	1.9%	1.5
Hungary	ScA	4.4%	1.8%	1.1%	-2.3%	5.7%	5.2%	4.6%	3.4%	4.8%	2.7
	ScC	.	.	.	.	4.2%	3.5%	4.1%	3.5%	3.9%	2.2
	ScD	.	.	.	.	4.2%	2.4%	2.6%	2.7%	3.1%	1.9
	ScE	.	.	.	.	4.2%	3.9%	-1.3%	3.8%	2.7%	1.7
Iceland	ScA	4.1%	5.7%	4.2%	-7.8%	4.9%	4.2%	4.1%	3.6%	4.3%	2.4
	ScC	.	.	.	.	3.5%	2.9%	3.5%	3.2%	3.3%	2.0
	ScD	.	.	.	.	3.5%	1.0%	1.1%	1.3%	1.9%	1.5
	ScE	.	.	.	.	3.5%	3.4%	-0.3%	3.2%	2.5%	1.7

		Average Annual Growth									
		2006	2007	2008	2009	2016 / 2010	2020 / 2017	2025 / 2021	2030 / 2026	AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
Ireland	ScA	5.4%	5.9%	0.5%	-12%	4.7%	4.4%	4.2%	2.6%	4.0%	2.3
	ScC	.	.	.	.	2.9%	2.5%	3.4%	3.3%	3.0%	1.9
	ScD	.	.	.	.	2.9%	1.2%	1.5%	1.8%	2.0%	1.5
	ScE	.	.	.	.	2.9%	3.0%	-1.7%	3.1%	1.8%	1.5
Italy	ScA	4.0%	8.4%	-2.4%	-5.1%	4.7%	4.3%	3.6%	3.2%	4.0%	2.3
	ScC	.	.	.	.	3.5%	2.4%	2.8%	2.8%	2.9%	1.8
	ScD	.	.	.	.	3.5%	1.7%	1.6%	1.5%	2.2%	1.6
	ScE	.	.	.	.	3.5%	2.8%	-3.1%	2.6%	1.5%	1.4
Latvia	ScA	13%	15%	11%	-8.4%	6.5%	6.2%	5.9%	4.2%	5.8%	3.2
	ScC	.	.	.	.	5.0%	3.7%	4.6%	4.5%	4.5%	2.5
	ScD	.	.	.	.	5.0%	3.1%	3.3%	3.5%	3.9%	2.2
	ScE	.	.	.	.	5.0%	4.4%	-1.1%	4.5%	3.3%	2.0
Lisbon FIR	ScA	5.7%	6.3%	2.7%	-7.2%	4.2%	3.2%	3.1%	3.1%	3.5%	2.1
	ScC	.	.	.	.	2.9%	1.5%	2.2%	2.5%	2.4%	1.6
	ScD	.	.	.	.	2.9%	0.5%	0.7%	0.7%	1.4%	1.3
	ScE	.	.	.	.	2.9%	1.9%	-4.1%	2.1%	0.8%	1.2
Lithuania	ScA	6.0%	13%	12%	-12%	6.7%	5.7%	5.4%	4.4%	5.6%	3.2
	ScC	.	.	.	.	5.1%	3.6%	4.4%	4.1%	4.4%	2.5
	ScD	.	.	.	.	5.1%	2.9%	3.3%	3.2%	3.8%	2.2
	ScE	.	.	.	.	5.1%	4.4%	-1.1%	4.1%	3.2%	1.9
Malta	ScA	0.2%	8.1%	3.4%	0.7%	7.6%	4.7%	4.8%	4.5%	5.6%	3.1
	ScC	.	.	.	.	5.9%	3.1%	3.6%	3.5%	4.3%	2.4
	ScD	.	.	.	.	5.9%	2.2%	2.4%	2.5%	3.5%	2.1
	ScE	.	.	.	.	5.9%	3.4%	-0.8%	3.5%	3.2%	1.9
Moldova	ScA	7.8%	25%	18%	6.7%	9.0%	6.9%	6.2%	5.6%	7.1%	4.2
	ScC	.	.	.	.	7.2%	4.7%	5.1%	4.8%	5.7%	3.2
	ScD	.	.	.	.	7.2%	3.7%	3.7%	4.0%	4.9%	2.7
	ScE	.	.	.	.	7.2%	5.1%	0.4%	5.2%	4.7%	2.6
Netherlands	ScA	6.0%	4.9%	-1.6%	-8.6%	3.8%	3.9%	3.7%	2.2%	3.4%	2.0
	ScC	.	.	.	.	2.7%	2.1%	2.9%	2.6%	2.6%	1.7
	ScD	.	.	.	.	2.7%	1.3%	1.4%	1.5%	1.9%	1.5
	ScE	.	.	.	.	2.7%	2.5%	-2.8%	2.7%	1.3%	1.3
Norway	ScA	6.1%	4.5%	2.6%	-4.4%	3.6%	4.7%	4.4%	2.4%	3.7%	2.2
	ScC	.	.	.	.	2.5%	2.4%	2.9%	2.8%	2.6%	1.7
	ScD	.	.	.	.	2.5%	1.8%	1.8%	1.7%	2.0%	1.5
	ScE	.	.	.	.	2.5%	2.8%	-3.1%	3.2%	1.4%	1.3

		Average Annual Growth									
		2006	2007	2008	2009	2016 / 2010	2020 / 2017	2025 / 2021	2030 / 2026	AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
Poland	**ScA**	16%	13%	10%	-7.6%	6.7%	5.2%	4.6%	3.9%	**5.2%**	**2.9**
	ScC	.	.	.	.	5.2%	3.1%	3.7%	3.4%	**4.0%**	**2.3**
	ScD	.	.	.	.	5.2%	2.3%	2.5%	2.5%	**3.3%**	**2.0**
	ScE	.	.	.	.	5.2%	3.9%	-2.1%	3.7%	**2.8%**	**1.8**
Romania	**ScA**	1.3%	4.0%	2.7%	-2.3%	7.9%	6.2%	5.8%	4.8%	**6.3%**	**3.6**
	ScC	.	.	.	.	6.1%	4.1%	4.9%	4.4%	**5.0%**	**2.8**
	ScD	.	.	.	.	6.1%	3.3%	3.5%	3.7%	**4.4%**	**2.5**
	ScE	.	.	.	.	6.1%	4.5%	-0.7%	4.4%	**3.7%**	**2.2**
Santa Maria FIR	**ScA**	0.9%	1.7%	6.5%	-2.6%	4.5%	3.8%	3.8%	4.1%	**4.1%**	**2.3**
	ScC	.	.	.	.	3.1%	2.2%	3.0%	3.3%	**3.0%**	**1.8**
	ScD	.	.	.	.	3.1%	0.1%	0.7%	0.7%	**1.4%**	**1.3**
	ScE	.	.	.	.	3.1%	2.6%	-1.7%	3.0%	**1.9%**	**1.5**
Serbia&Montenegro	**ScA**	8.7%	16%	8.6%	3.3%	6.4%	4.9%	4.3%	3.3%	**4.9%**	**2.7**
	ScC	.	.	.	.	5.0%	3.7%	3.9%	3.2%	**4.1%**	**2.3**
	ScD	.	.	.	.	5.0%	2.2%	2.5%	2.6%	**3.3%**	**2.0**
	ScE	.	.	.	.	5.0%	4.1%	-1.4%	3.6%	**2.9%**	**1.8**
Slovakia	**ScA**	3.8%	-1.6%	6.4%	-2.4%	7.2%	5.0%	4.6%	3.6%	**5.3%**	**3.0**
	ScC	.	.	.	.	5.7%	3.1%	3.8%	3.3%	**4.2%**	**2.4**
	ScD	.	.	.	.	5.7%	2.2%	2.3%	2.4%	**3.4%**	**2.0**
	ScE	.	.	.	.	5.7%	3.6%	-1.6%	3.5%	**3.0%**	**1.8**
Slovenia	**ScA**	3.7%	15%	6.8%	-4.2%	5.7%	4.7%	4.0%	3.2%	**4.5%**	**2.5**
	ScC	.	.	.	.	4.3%	3.1%	3.4%	3.1%	**3.6%**	**2.1**
	ScD	.	.	.	.	4.3%	2.1%	2.1%	2.1%	**2.8%**	**1.8**
	ScE	.	.	.	.	4.3%	3.5%	-2.0%	3.3%	**2.4%**	**1.6**
Spain	**ScA**	5.1%	8.4%	-1.8%	-9.5%	3.8%	4.1%	3.8%	3.7%	**3.8%**	**2.2**
	ScC	.	.	.	.	2.4%	1.9%	2.5%	2.7%	**2.4%**	**1.7**
	ScD	.	.	.	.	2.4%	1.2%	1.3%	1.2%	**1.6%**	**1.4**
	ScE	.	.	.	.	2.4%	2.3%	-4.0%	2.1%	**0.8%**	**1.2**
Sweden	**ScA**	3.8%	2.8%	3.9%	-11%	4.0%	4.7%	4.0%	2.6%	**3.8%**	**2.2**
	ScC	.	.	.	.	2.9%	2.7%	3.1%	2.9%	**2.9%**	**1.8**
	ScD	.	.	.	.	2.9%	2.0%	1.9%	1.9%	**2.3%**	**1.6**
	ScE	.	.	.	.	2.9%	3.2%	-2.6%	3.1%	**1.7%**	**1.4**
Switzerland	**ScA**	2.4%	5.9%	0.3%	-7.1%	4.0%	3.8%	2.2%	1.7%	**3.0%**	**1.8**
	ScC	.	.	.	.	2.9%	2.1%	2.2%	2.1%	**2.4%**	**1.6**
	ScD	.	.	.	.	2.9%	1.4%	1.2%	1.1%	**1.8%**	**1.4**
	ScE	.	.	.	.	2.9%	2.4%	-3.4%	2.2%	**1.1%**	**1.3**

		Average Annual Growth								AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
		2006	2007	2008	2009	2016 / 2010	2020 / 2017	2025 / 2021	2030 / 2026		
Turkey	ScA	8.0%	9.2%	8.6%	4.2%	8.0%	5.4%	4.2%	3.3%	5.5%	3.1
	ScC	.	.	.	.	7.0%	4.0%	4.3%	3.4%	4.9%	2.7
	ScD	.	.	.	.	7.0%	3.5%	3.2%	2.6%	4.4%	2.4
	ScE	.	.	.	.	7.0%	4.5%	0.7%	4.2%	4.3%	2.4
Ukraine	ScA	1.3%	8.2%	8.7%	-6.9%	8.0%	6.3%	5.8%	5.4%	6.5%	3.7
	ScC	.	.	.	.	6.6%	4.3%	4.8%	4.4%	5.2%	2.9
	ScD	.	.	.	.	6.6%	3.4%	3.4%	3.6%	4.5%	2.5
	ScE	.	.	.	.	6.6%	4.6%	0.1%	4.8%	4.2%	2.4
UK	ScA	3.4%	3.5%	-1.4%	-9.4%	2.9%	3.4%	3.4%	2.9%	3.1%	1.9
	ScC	.	.	.	.	1.9%	1.8%	2.6%	2.7%	2.3%	1.6
	ScD	.	.	.	.	1.9%	1.3%	1.2%	1.4%	1.5%	1.4
	ScE	.	.	.	.	1.9%	2.2%	-2.3%	2.5%	1.1%	1.3
ESRA02	ScA	3.9%	5.1%	0.4%	-6.6%	4.1%	4.3%	3.7%	3.0%	3.8%	2.2
	ScC	.	.	.	.	2.9%	2.4%	2.9%	2.7%	2.8%	1.8
	ScD	.	.	.	.	2.9%	1.9%	1.8%	1.7%	2.2%	1.6
	ScE	.	.	.	.	2.9%	2.9%	-2.6%	2.8%	1.6%	1.4
EU27	ScA	3.5%	5.6%	0.3%	-7.2%	4.0%	4.2%	3.7%	3.1%	3.8%	2.2
	ScC	.	.	.	.	2.7%	2.3%	2.8%	2.7%	2.7%	1.7
	ScD	.	.	.	.	2.7%	1.7%	1.7%	1.7%	2.0%	1.5
	ScE	.	.	.	.	2.7%	2.8%	-2.8%	2.7%	1.4%	1.3
ESRA08	ScA	3.7%	5.0%	0.4%	-6.6%	4.2%	4.4%	3.8%	3.1%	3.9%	2.2
	ScC	.	.	.	.	2.9%	2.5%	2.9%	2.8%	2.8%	1.8
	ScD	.	.	.	.	2.9%	1.9%	1.8%	1.8%	2.2%	1.6
	ScE	.	.	.	.	2.9%	2.9%	-2.5%	2.9%	1.6%	1.4
SES	ScA	3.6%	4.9%	0.4%	-6.9%	4.0%	4.3%	3.8%	3.1%	3.8%	2.2
	ScC	.	.	.	.	2.7%	2.4%	2.8%	2.8%	2.7%	1.7
	ScD	.	.	.	.	2.7%	1.8%	1.7%	1.7%	2.1%	1.5
	ScE	.	.	.	.	2.7%	2.8%	-2.8%	2.8%	1.4%	1.3
Baltic	ScA	.	.	.	-8.6%	6.5%	5.4%	4.9%	4.1%	5.3%	3.0
	ScC	.	.	.	.	4.9%	3.2%	3.9%	3.6%	4.0%	2.3
	ScD	.	.	.	.	4.9%	2.5%	2.7%	2.7%	3.4%	2.0
	ScE	.	.	.	.	4.9%	4.0%	-1.9%	3.8%	2.8%	1.8

		Average Annual Growth									
		2006	2007	2008	2009	2016 / 2010	2020 / 2017	2025 / 2021	2030 / 2026	AAGR 2030/ 2009	Traffic Multiple 2030/ 2009
Blue Med[42]	**ScA**	.	.	.	-3.7%	4.9%	4.6%	4.0%	3.6%	**4.3%**	**2.4**
	ScC	.	.	.	.	3.6%	2.7%	3.1%	3.0%	**3.1%**	**1.9**
	ScD	.	.	.	.	3.6%	1.8%	1.8%	1.8%	**2.4%**	**1.6**
	ScE	.	.	.	.	3.6%	3.0%	-2.6%	2.9%	**1.8%**	**1.5**
Danube	**ScA**	.	.	.	-0.4%	7.5%	5.6%	5.0%	3.9%	**5.7%**	**3.2**
	ScC	.	.	.	.	5.9%	3.8%	4.5%	3.9%	**4.7%**	**2.6**
	ScD	.	.	.	.	5.9%	2.9%	3.1%	3.2%	**4.0%**	**2.3**
	ScE	.	.	.	.	5.9%	4.1%	-0.7%	4.1%	**3.5%**	**2.1**
FAB CE	**ScA**	.	.	.	-5.1%	5.6%	4.8%	4.2%	3.2%	**4.5%**	**2.5**
	ScC	.	.	.	.	4.1%	3.0%	3.5%	3.2%	**3.5%**	**2.1**
	ScD	.	.	.	.	4.1%	2.1%	2.2%	2.2%	**2.8%**	**1.8**
	ScE	.	.	.	.	4.1%	3.5%	-2.3%	3.1%	**2.2%**	**1.6**
FAB EC	**ScA**	.	.	.	-7.0%	3.9%	3.7%	3.0%	2.2%	**3.2%**	**1.9**
	ScC	.	.	.	.	2.7%	2.0%	2.5%	2.3%	**2.4%**	**1.6**
	ScD	.	.	.	.	2.7%	1.4%	1.4%	1.3%	**1.8%**	**1.5**
	ScE	.	.	.	.	2.7%	2.4%	-2.9%	2.4%	**1.2%**	**1.3**
NEFAB[43]	**ScA**	.	.	.	-8.4%	4.0%	4.8%	4.3%	2.9%	**4.0%**	**2.3**
	ScC	.	.	.	.	2.9%	2.6%	3.1%	3.0%	**2.9%**	**1.8**
	ScD	.	.	.	.	2.9%	2.0%	1.9%	1.9%	**2.2%**	**1.6**
	ScE	.	.	.	.	2.9%	3.1%	-2.7%	3.2%	**1.6%**	**1.4**
SW Portugal - Spai	**ScA**	.	.	.	-9.3%	3.8%	4.0%	3.9%	3.8%	**3.9%**	**2.2**
	ScC	.	.	.	.	2.4%	1.9%	2.5%	2.7%	**2.4%**	**1.7**
	ScD	.	.	.	.	2.4%	1.2%	1.3%	1.2%	**1.6%**	**1.4**
	ScE	.	.	.	.	2.4%	2.4%	-3.9%	2.1%	**0.8%**	**1.2**
UK-Ireland	**ScA**	.	.	3E8%	-9.5%	3.0%	3.5%	3.4%	2.8%	**3.2%**	**1.9**
	ScC	.	.	.	.	2.0%	1.8%	2.6%	2.8%	**2.3%**	**1.6**
	ScD	.	.	.	.	2.0%	1.3%	1.3%	1.4%	**1.5%**	**1.4**
	ScE	.	.	.	.	2.0%	2.2%	-2.3%	2.5%	**1.1%**	**1.3**

[42] Traffic statistics for Blue Med may be incomplete since we do not have complete data for Tunisia or Egypt
[43] NUAC is currently included here

ANNEX E. REFERENCES

Most of the references is available electronically from the STATFOR webpage: www.eurocontrol.int/statfor.

1 *EUROCONTROL Medium-Term Forecast September 2010, Flight Movements 2010-2016*, EUROCONTROL STATFOR, September 2010

2 *EUROCONTROL Long-Term Forecast, Flight Movements 2008-2030,* EUROCONTROL STATFOR, November 2008.

3 www.eurocontrol.int/statfor

4 *Challenges of Growth 2008, Environmental Update Study*, EUROCONTROL/ Omega/ Manchester Metropolitan University/ MetOffice, January 2009

5 *Challenges of Growth 2008, Summary Report*, EUROCONTROL STATFOR, November 2008

6 *EUROCONTROL Long-Term Forecast 2010: Scenario Document*, STATFOR Doc392 v1.0, to be issued

7 *Challenges to Growth 2004 Report*, ECAC-EUROCONTROL, December 2004

8 *EUROCONTROL Medium-Term Forecast, Flight Movements 2010-2016*, EUROCONTROL STATFOR, February 2010

9 *Peak Oil - State of the Art*, EUROCONTROL, to be issued

10 *High-speed Europe, a sustainable link between citizens*, EC Directorate General for Mobility and Transport, 2010

11 *EUROCONTROL Medium-Term Forecast, Flight Movements 2008-2014*, EUROCONTROL STATFOR, February 2008

12 *EUROCONTROL Glossary for Flight Statistics & Forecasts*, January 2005.

13 www.eurocontrol.int/statfor/sid

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