FABEC

PERFORMANCE 2016

FABEC AIR NAVIGATION SERVICE PROVIDERS

LE GOUVERNEMENT DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère du Développement durable et des Infrastructures
Administration de la navigation aérienne

Belgocontrol

DFS Deutsche Flugsicherung

dgac DSNA

EUROCONTROL

Luchtverkeersleiding Nederland
Air Traffic Control the Netherlands

skyguide

making the difference

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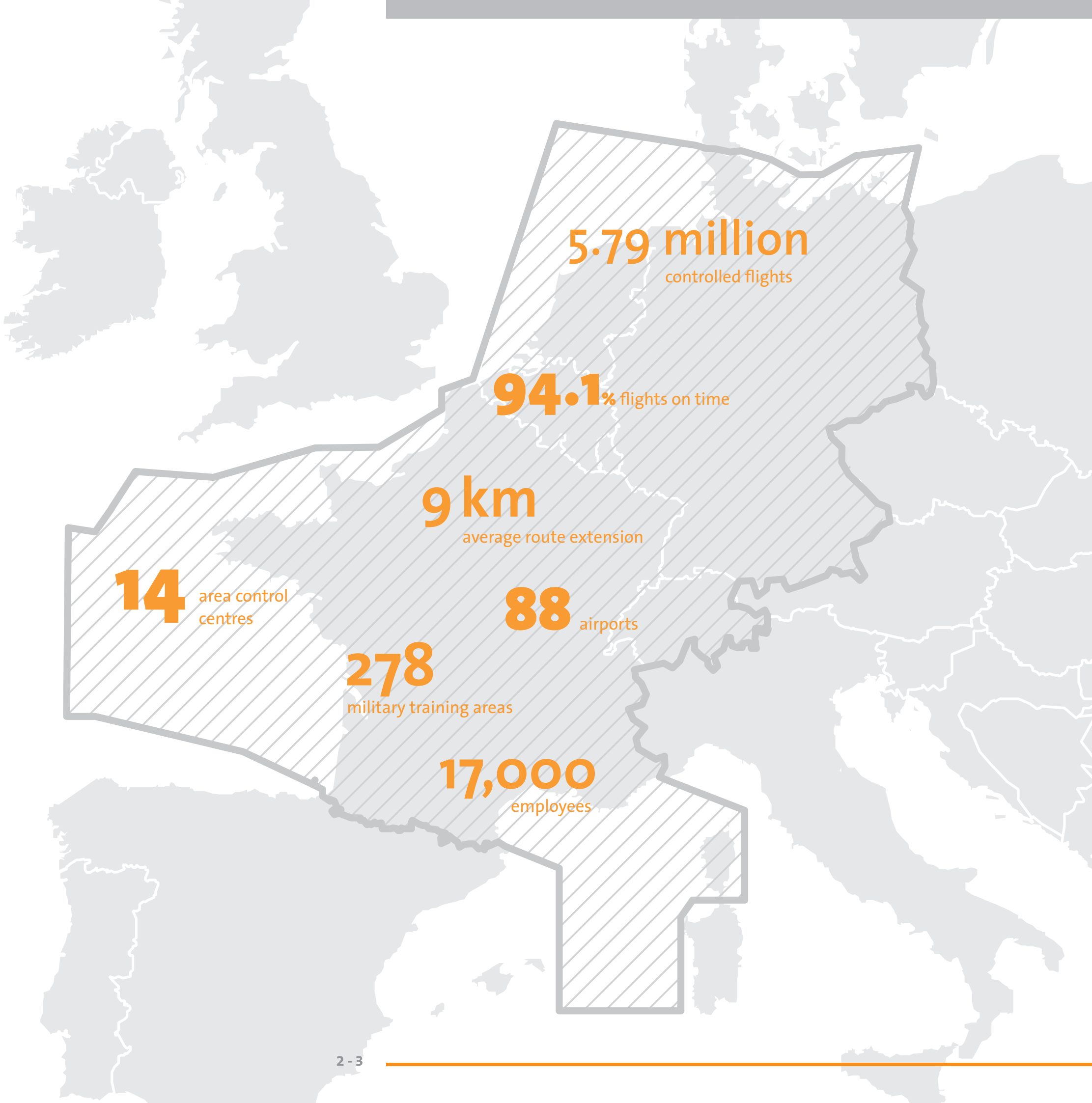

5.79 million
controlled flights
94.1% flights on time
9 km
average route extension
14 area control centres
88 airports
278
military training areas
17,000
employees

Foreword

Dear reader

The civil ANSPs of FABEC, ANA Luxembourg, Belgocontrol, DFS, DSNA, LVNL, MUAC and skyguide together with our military counterparts are pleased to release this "Performance 2016" report. It provides an overview of our contribution to improve overall ATM provision in terms of safety, punctuality, environment and cost-efficiency. Our efforts are guided by objectives of the Single European Sky and the European Aviation Strategy focusing on the needs of passengers, citizens, airspace users and the connectivity of the European market.

Based on experience made in the course of the ongoing regulatory period in conjunction with correlated data provided in this report, today's air traffic in FABEC is safe, punctual and environmentally friendly. Costs have been reduced significantly. Despite these positive results, local aspects affect the sensitive aviation network.

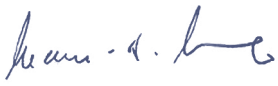
In light of warnings by the Network Manager that the performance of the European Network will deteriorate in the years to come, we have requested a revision of the performance scheme based on the principles established in the Aviation Strategy. A performance-based regulation and sustainable operational management require a cooperative and holistic approach incorporating all partners of the aviation chain.

We stand for safety, punctuality and cost-efficiency as well as for doing our part to make the aviation sector more environmentally friendly. The key issues for all seven ANSPs within FABEC correspond to those of their national strategy: providing more direct routes in upper airspace and promoting civil-military coordination, developing common best practices in terms of safety or training and taking into account the SESAR deployments. Our fundamental objective is that we, the FABEC ANSPs, perform better and better day-by-day.

Direction des Services
de la Navigation Aérienne (DSNA)

Administration de la
Navigation Aérienne (ANA)

Belgocontrol



DFS Deutsche
Flugsicherung GmbH

EUROCONTROL Maastricht UAC

Luchtverkeersleiding Nederland (LVNL)

skyguide swiss air navigation
service provider ltd

Traffic

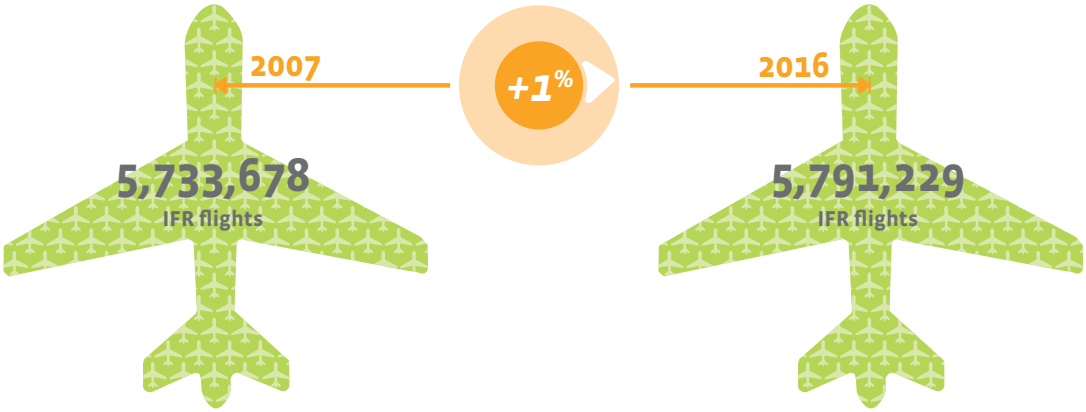
All-time high and changing flows

In 2016, air traffic controllers guided 5.79 million flights (+3.2 percent compared to 2015) safely and punctually through FABEC airspace. This was an all-time high for traffic volume, topping the historical peak reached in 2007. Despite this overall trend, there were significant variations between control centres and individual sectors. The bandwidth of growth for FABEC ANSPs varied between 0.1 and 4.9 percent. Individual growth rates at the control centre or sector level were significantly higher in some cases. With regard to the traffic development at European airports, Amsterdam Schiphol Airport and Paris Charles de Gaulle overtook London Heathrow Airport and became the busiest airports in Europe. Overall, the number of arrivals at FABEC airports grew by 2.0 percent.

Geopolitics led to traffic shifts

In detail, air traffic volume in FABEC airspace increased by 3.2 percent from 5,612,328 flights in 2015 to 5,791,229 flights

Traffic 10-year trend



Source: EUROCONTROL PRU Portal; FABEC Capacity Report 2016/12

« *In 2016, air traffic controllers guided* ***5.79 million flights*** *safely and punctually* »

in 2016. This was slightly above the traffic volume reached in 2007, when the highest number of flights was recorded in FABEC. The main cause of this development was the overarching positive trend on the aviation market, which continued for the third consecutive year. Especially the low-cost sector grew again to an above-average level. In addition, the traditional legacy carriers and cargo segment grew at an average rate overall, but with several significant variation in terms of airlines and destinations.

A determining factor was the volatility of tourism due to the geopolitical situation. Terrorist attacks and political unrest in 2016 led to travel advisories being issued for North African countries. This resulted in a shift in the popularity of holiday destinations. In consequence, the south-west axis towards Spain and Portugal noted an unexpectedly strong increase. At the level of control sectors, unexpected growth rates were recorded at centres in western France.

Mixed picture on regional level

FABEC-wide, the regional growth rates showed a wide spread, ranging from moderate growth in the airspace controlled by Belgocontrol (+0.6 percent) to significant growth in traffic in the airspace controlled by LVNL and Maastricht UAC (+4.6 percent). DSNA, in charge of the French airspace, was the first European air navigation service provider to control more than 3 million flights a year. The traffic growth in Germany and Switzerland was average, but still far higher than forecasted. Some highly congested sectors in the upper airspace controlled by Maastricht UAC recorded a boost for the third consecutive year, while the lower airspaces controlled by Belgcontrol and LVNL were influenced by their national hub airports. On 22 March, Brussels Airport was hit by a terrorist attack, which led to many flight cancellations. Amsterdam Schiphol was able to increase the number of departures significantly.

From a macroeconomic perspective, the overall growth in traffic volume demonstrates the growing strength and sustainability of the European market. After all, this traffic volume has to be seen within the overall perspective: Regional areas of conflict such as Ukraine, Syria and its impact on the Middle East have changed European traffic flows significantly two years ago. Besides this, a lot of flights had to be cancelled due to strikes which took place in all sectors of the aviation industry. Adverse weather conditions during the summer period, especially in Germany, also led to flight cancellations.

Amsterdam and Paris are the busiest European airports

Landings at airports in the FABEC area grew by 2.0 percent in 2016. 2.513 million landings were recorded at 83 airports (2014: 2.485 million). At Amsterdam and Paris airports, the number of departures grew, while a decrease was recorded at London Heathrow which is not part of FABEC. Due to this opposite developments, Amsterdam Schiphol Airport and Paris Charles de Gaulle Airport are now the busiest airports in Europe. To complete the picture: with the airports of Frankfurt and Munich, FABEC is currently home to four of the five busiest airports within the Single European Sky area.

The overall trend is similar to the development in the en-route sector. Growth was recorded at almost all airports, although again there was a spread between weak to moderate growth in some cases and record highs in others. However, there were still some airports where declines were experienced and others that were operating at their peak, where no growth is possible under current conditions. Moreover, when the long-term trend is considered, at about half of the airports landings were below the values seen in 2012.

Dynamic market requires high flexibility

In conclusion, it is becoming clear that the current static instruments of traffic forecasting are not reliable anymore. Due to the volatility of the traffic, a new flexible approach is needed for the next regulatory period – an approach that takes into account the interdependencies stemming from the changes being experienced in the aviation market itself as well as from the impact of geopolitics.

Safety

Passengers' first priority

Safety is the core of our business, in fact, it is our mission. Day by day and round the clock, our employees ensure the safety of flights for 1.4 million passengers flying in 16,000 flights in FABEC airspace every day – from Brittany to Switzerland, from Corsica to the North Sea. Our safety record in 2016 was excellent. Expressed in figures, FABEC ANSPs can report that there was zero direct involvement of any FABEC ANSPs in any civil aircraft fatalities. In addition, the number of runway incursions and separation minima infringments remained low. Even so, we know that safety is not a given. To stay safe both in the air and on the ground, a continous cycle of excellence is required. That is why we continuously invest in the proficiency of our staff, in advanced technologies and in state-of-the-art safety management systems and standards.

Employees are key

Air traffic control is responsible for the safe and efficient conduct of flights. This means that aircraft need to keep their distance from one another and from other vehicles and obstacles. As simple as that sounds, in FABEC airspace, one of the densest and most complex airspaces worldwide, it is an ongoing challenge. Our staff is trained to plan traffic flows, to recognise possible conflicts between aircraft in advance and to provide ad-hoc solutions to ensure a smooth flight for each passenger. Backed by modern technologies, air traffic controllers always have a comprehensive picture of the traffic they are in charge of. In each phase of an air traffic controller's career, measures are taken to ensure proficiency. This starts with a dedicated job profile and selection process followed by specific training courses and licensing procedures, proficiency checks for experienced air traffic controllers, dedicated briefings in day-to-day work and medical checks. Our ATM systems are maintained at a very high level of reliability by dedicated trained technicians. These people are at the forefront of modern technologies – deploying advanced systems such as the new autonomous runway incursion warning system in Paris Charles de Gaulle – that enable new efficient services for airlines. Also the protection of ATM systems against cyberthreats is becoming part of a cultural change that is ongoing.

*« **Safety** is the core of our business, in fact, **it is our mission**. »*

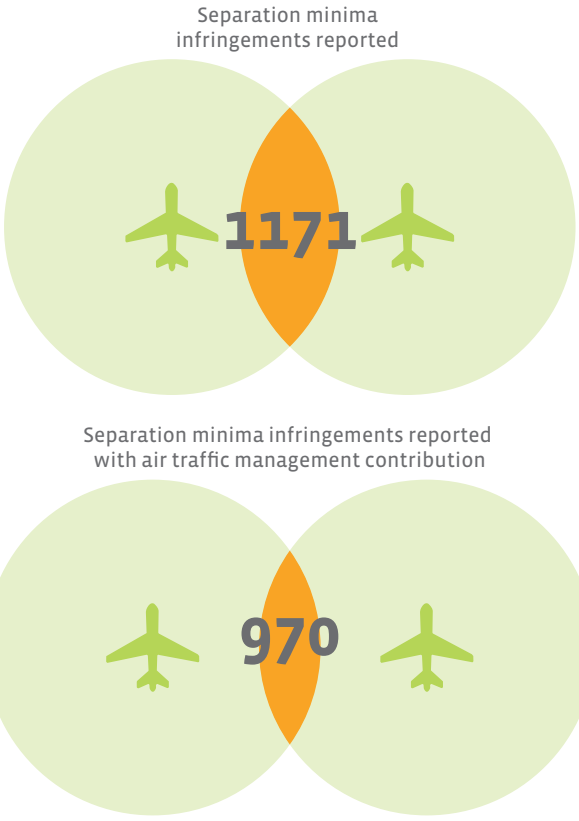
Safety culture is required

Safety is due to more than a pure allocation of skills and procedures. It requires a dedicated culture of respect and openness to continously improve safety. This can be supported by reflecting on human behaviour and decisions taken by an air traffic controller as well as by analysing influencing factors such as the impact of technologies. In this sense, occurences actually add value as they are an important source for detecting issues and identifing solutions to improve safety in concrete terms. This is why, over the past decades, FABEC ANSPs have implemented dedicated means such as safety panels, workshops or safety bulletins to facilitate a continuous learning process. On top of this, in 2016 FABEC organised a social dialogue conference which brought together social partners, management and safety experts to discuss day-to-day safety topics such as the reporting of occurrences or new challenges such as cybersecurity.

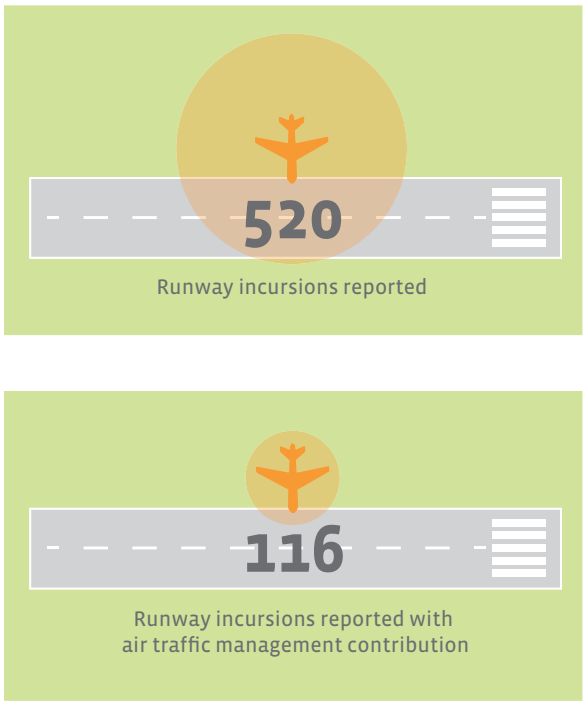
Targets achievement on track

Beside the provision of safety in daily operations, FABEC has agreed on targets for safety indicators for the second reference period and aims to improve the safety management system. Targets to be reached by 2019 have been set taking into account Effectiveness of Safety Management (EoSM), Just Culture and the usage of the Risk Analysis Tool (RAT) methodology. In addition, new safety performance indicators have been introduced, such as the use of automated reporting tools and the level of reporting. Consistency between safety indicators with targets and indicators without targets has been established. By the end of 2016, all safety targets embedded in the FABEC performance plan were achieved or on track.

Separation minima infringements



Runway incursions



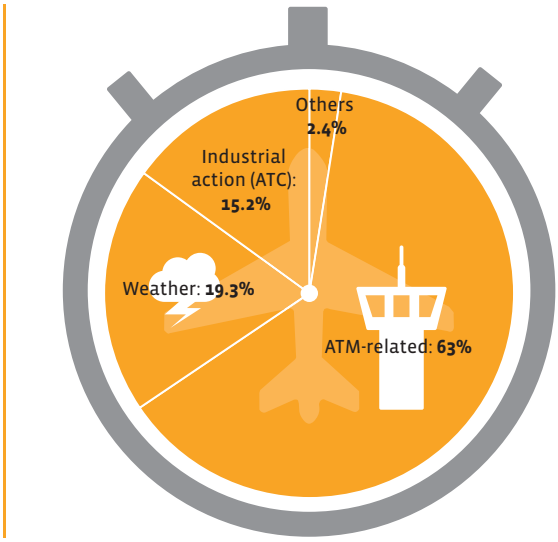
Source: FABEC ANSPs

Punctuality

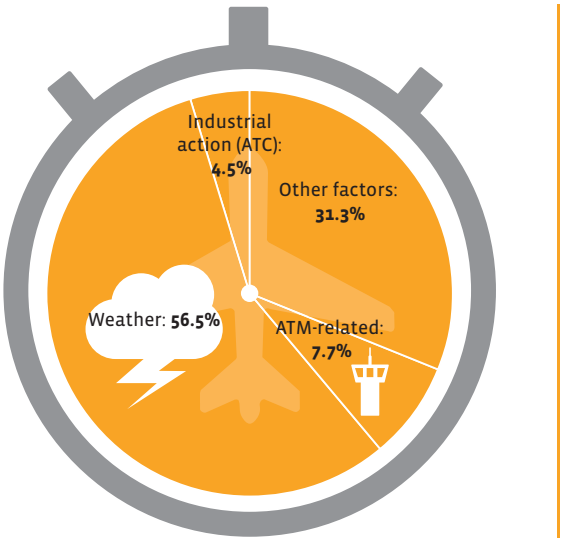
Passengers are arriving on time

Punctuality within aviation is a complex subject. The punctuality of an individual flight can be impacted by many parties, such as airlines, airports, ground handling crews and air navigation services. In addition to these, there are many external factors that also influence punctuality, such as the weather. To ensure that all passengers arrive on time at their destination, the parties involved work together closely. As a result, currently, most of the flights are punctual. One indication of the improving punctuality of arrivals is the trend of air traffic flow measures within the arrival sequence to major hubs in FABEC. Looking at the trend since 2011 – the start of the EU performance regulation of air

Causes of ATFM delay 2016 in % (en-route)



Causes of ATFM delay 2016 in % (arrival)



Source: EUROCONTROL PRU Portal

« *In 2016,* ***94.1 percent*** *of all flights experienced no delays* »

navigation services – at almost all major hubs located in the FABEC States, the arrival delay caused by ANSPs has gone down dramatically: Amsterdam Schiphol (minus 90%), Paris Charles de Gaulle (minus 58%), Frankfurt (minus 96%) and Zurich (minus 98%).

Arrival delays improved

Munich and Lyon airports have eliminated arrival delay completely – they counted zero arrival delay minutes caused by ANSPs. On average, the delay for the 15 biggest airports in FABEC has dropped to 2.4 seconds per flight. This is a value that allows for virtually no more improvements. Punctuality scores are close to 100 percent. Today, if arrival flow measures have to be taken they are almost always caused by external factors such as weather, local (noise) regulations or social action within the aviation chain.

En-route punctuality remains stable

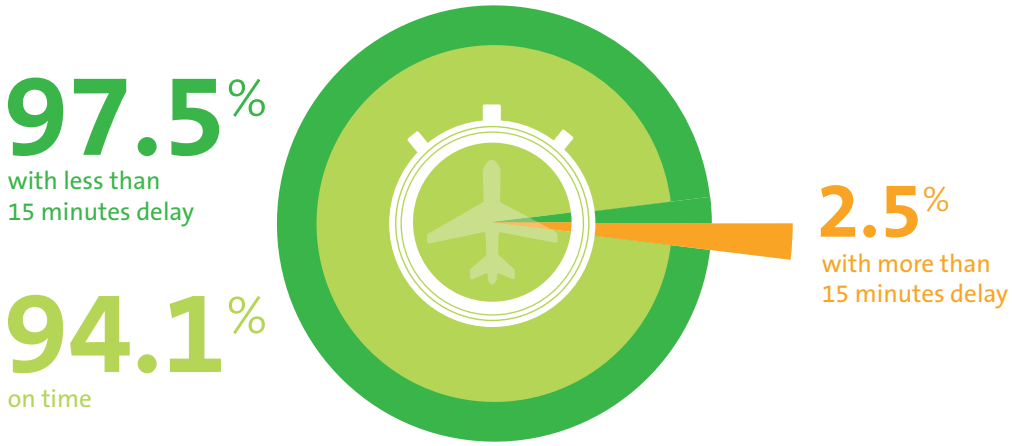
In 2016, 94.1 percent of all flights experienced no ATFM en-route delays. 97.5 percent were within 15 minutes of the scheduled time. Nevertheless, the average delay due to ATFM measures en-route increased from 42 seconds to 64 seconds per flight. The main reasons for delays were a lack of capacity at the control centres of Brest (implementation of the new ERATO ATC tool) and Maastricht, adverse weather in the airspace controlled by Maastricht and Karlsruhe, industrial action in France and staff shortages in the control centres of Brussels, Langen and Karlsruhe. It was the first time that the weather – particularly the severe thunderstorms in the second quarter of 2016 – had such an enormous impact.

Trends in two directions

Two trends have been noted with regard to the target achievement of the seven FABEC air navigation service providers. Despite the fact that punctuality improved for arrivals and remained at a high level for en-route, the ambitious targets set by the European Commission have only been partially reached. With regard to en-route ATFM delay, the target of 29.4 seconds delay per flight could not be met (2016: 64.2 seconds per flight). On a positive note, all FABEC ANSPs, apart from the extraordinary case of Brussels Airport impacted by the terrorist attack, were able to achieve their airport targets.

Current targets do not serve passenger needs

When comparing punctuality trends with the regulatory target system, the question has to be asked if the current regulatory scheme is consistent and serves its purpose. From the passengers' point of view – which is one of the fundamentals of the EC's Aviation Strategy – the current artificial and highly sophisticated system seems not to be adequate, as it provides no substance as to how the ultimate goal of arriving at the destination safe and on-time can be reached.



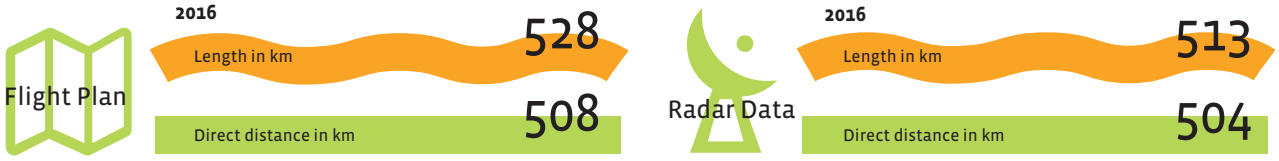
Source: EUROCONTROL

Environment

Close to the optimum

Over the past years, FABEC ANSPs have substantially contributed to the reduction of the environmental footprint of aviation measured in terms of what is known as horizontal flight efficiency. The key performance indicator for horizontal flight efficiency correlates the environmental impact of emissions caused by fuel burn with the use of the shortest route. Today, the distances actually flown in FABEC airspace are close to the optimum. In 2016, the average en-route distance per flight in FABEC airspace was 513 km, 9 km longer (1.7 percent) than the average direct route. Taking into account that there will always be some deviations due to military activities, weather, aircraft separation requirements and requirements from airspace operators to deviate from the direct route due to wind or other parameters, this is an excellent value which allows for only marginal improvements in the future. Flying remains the most direct mode of transport.

Comparison direct to flown distance in the FABEC airspace



Source: EUROCONTROL PRU. The average route extension is not based on the achieved distance approach calculation.

« In 2016, the average en-route distance per flight was 513 km, ***9 km longer than the average direct route****. »*

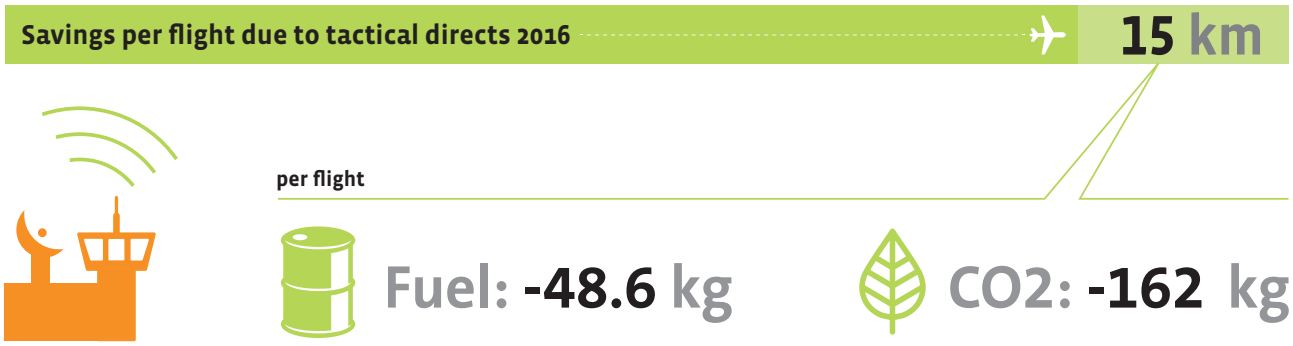
Shortcuts are daily business

One reason for this excellent performance is that in daily operations, pilots benefit from direct routings – known as 'tactical directs' – offered flexibly by air traffic controllers (ATCOs) on the frequency during the flight. With these tactical directs, ATCOs can eliminate a source of inefficiency that occurs when individual flight plans do not use the most efficient routing. Overall in 2016, these tactical directs resulted in an average reduction of 15 kilometres in the distance flown per flight when compared with the routing originally planned. The average distance flown declined from 528 kilometres (plan) to 513 kilometres (actual) per flight. The benefit for airspace users can be expressed as the reduction of fuel burned by 278,000 tonnes. Beside this, air traffic controllers reduced the environmental footprint of aviation by 938,000 tonnes of CO_2.

Sophisticated targets

In the framework of the FABEC performance plan, FABEC ANSPs are obliged to reduce the value of the key performance indicator "average horizontal en-route flight efficiency of the actual trajectory" (KEA) to 3.22 percent. This target has been missed by 0.18 percent points. KEA compares the length of the actual trajectory with the "achieved distance" of the great circle distance between the origin and the destination airport. For airports within FABEC, the distance within a radius of 40 nautical miles are not taken into this measurement as terminal areas have special operational needs to guarantuee safety. In addition, they also have to comply with stringent external requirements such as noise abatement.

It has to be considered if and to what extent the current target system contributes sustainably to the objectives of EC's Aviation Strategy. This is clear when one takes into account the excellent environmental record which allows only marginal further improvements, the requests from airspace users to fly the cheapest but not the shortest routes, and the complexity of the calculating and measuring of targets.



Source: EUROCONTROL PRU

Cost-efficiency

Mixed picture

Previously, air traffic development was revised downwards due to the expected Brexit-induced shock to the UK and in general the Euro zone's economy, as stated in the latest EUROCONTROL seven-year forecast as of February 2017. The predictions were indeed for an immediate and significant impact on the economy and the consumer confidence. So far, these predictions have not come to pass and if a negative impact on the economy is still expected, it will be in the medium to long term.

General trend in RP2 of costs and service units

The FABEC-wide costs for the en-route area for 2016 are expected to be 2.5 percent under the Performance Plan value of EUR 2,461 million. In the terminal area, costs are expected to be 1.4 percent above the Performance Plan value of EUR 623 million. In the en-route area, 40.5 million service units were charged in 2016. This was 1.4 million (3.6 percent) more than assumed in the Performance Plan. In the terminal area, the number of service units for 2016 exceeded the set plan by 1.9 percent, equivalent to 62 thousand service units.

*« The FABEC-wide costs for the en-route area for 2016 are expected to be **2.5 percent under the Performance Plan** value of EUR 2,461 million. »*

En-route services: Estimate versus Performance Plan

The service units estimated for 2016 (40.5 million) were significantly higher than those in the Performance Plan (+1.4 million service units) with 39 million units. Across FABEC, costs of EUR 62 million have been saved for en-route, estimated on preliminary 2016 values.

Current predictions show that an increase of +1.1 percent (+2.1 million service units) in en-route can be expected for the entire second reference period (RP2) in comparison to the amount laid out in the Performance Plan. Additionally it is estimated that costs totalling EUR 208 million (equivalent to -1.7 percent) are likely to be reduced across FABEC in a timeline from 2015 to 2019, estimated on preliminary 2016 values.

A total of -2.7 percent unit cost reduction based on 2015 real terms is anticipated on preliminary 2016 values compared to FABEC's Performance Plans yearly -2.6 percent reduction.
The average yearly unit cost RP2 in FABEC amounts to EUR 60.52 per service unit, compared to the Performance Plan average of EUR 61.88 per service unit (real terms based on 2015).

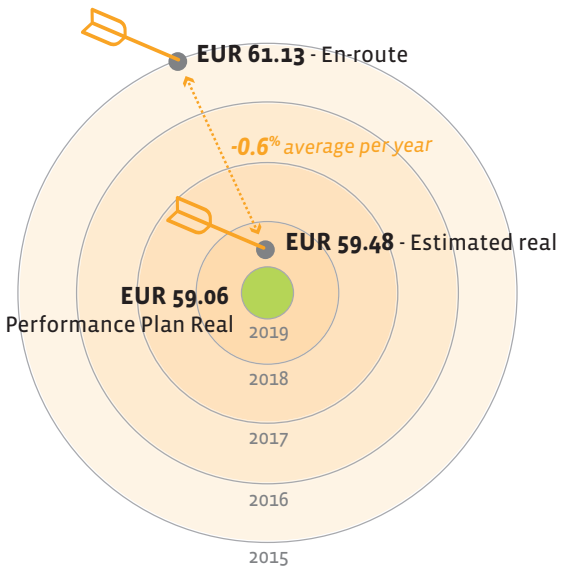
Terminal services: Estimate versus Performance Plan

Terminal services in 2016 were able to accrue an estimated 62 thousand additional service units than assumed in the Performance Plan (3.3 million service units). However, during 2016, the FABEC ANSPs incurred costs totalling EUR 8.6 million more than planned for in the Performance Plan (EUR 623.4 million) estimated on preliminary 2016 values.

Current predictions show that an increase of +0.9 percent (+143 thousand service units) in terminal services can be expected for the entire second reference period (RP2) in comparison to the amount laid out in the Performance Plan. Costs are likely to be reduced by a total of EUR 10 million (-0.3 percent) estimated on preliminary 2016 values.

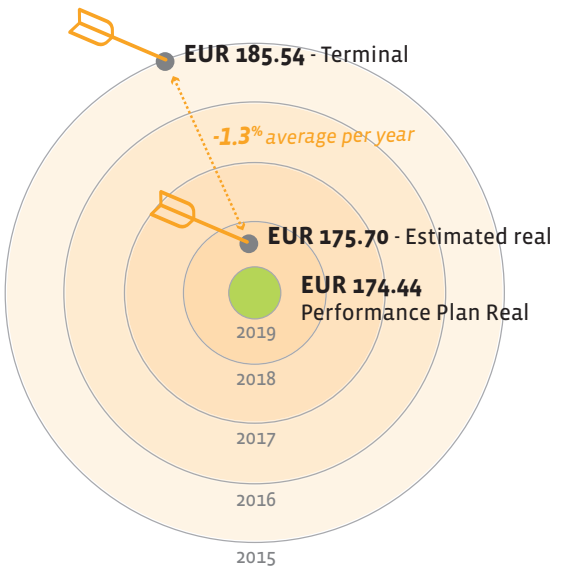
A total of -5.3 percent unit cost reduction based on 2015 real terms is anticipated on preliminary 2016 values compared to FABECs Performance Plans yearly -2.8 percent reduction.
The average yearly unit cost RP2 in FABEC amounts to EUR 182.38 per service unit, compared to the Performance Plan average of EUR 183.76 per service unit (real terms based on 2015).

Simulated FABEC unit costs en-route



Real terms (based on 2015 prices)

Simulated FABEC unit costs terminal



Real terms (based on 2015 prices)

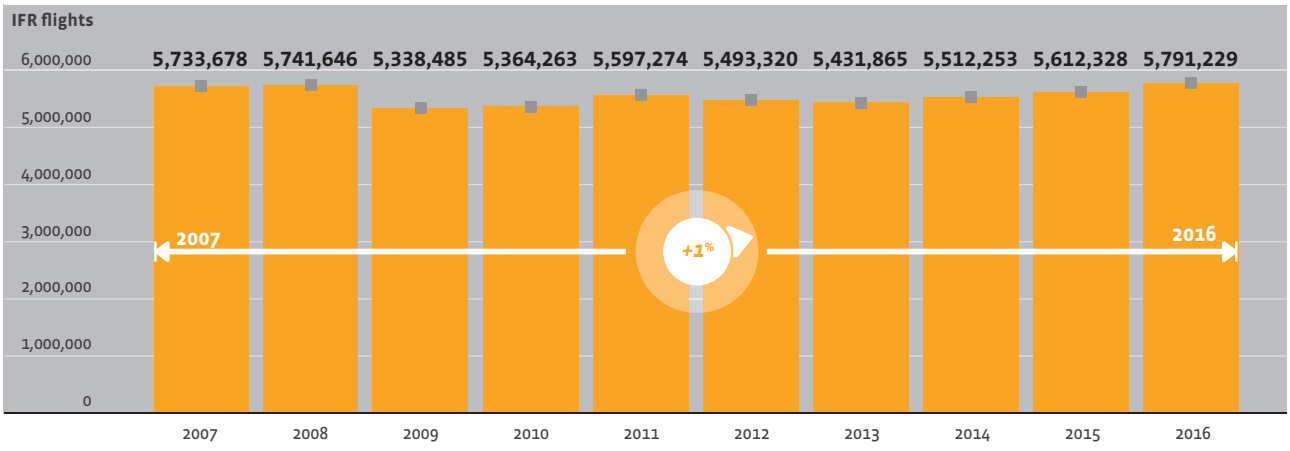
Source: FABEC ANSPs

Statistics

Our objective is to offer the reader a fair and transparent overview of the performance provided by FABEC ANSPs – both with regard to trends and the actual performance. For this reason, the data provided in this brochure is based on official resources. However, due to the complexity of the analysed data and statistical effects (i.e. scaling, trends etc.), some information provided might require further explanations. The FABEC ANSPs will be happy to answer any questions you might have.

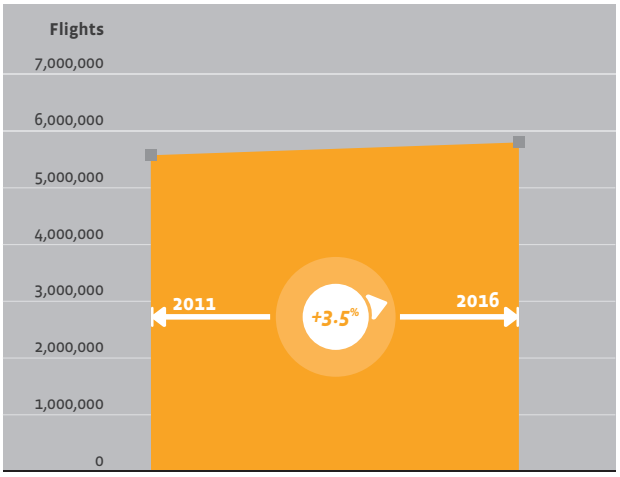
Traffic

Traffic

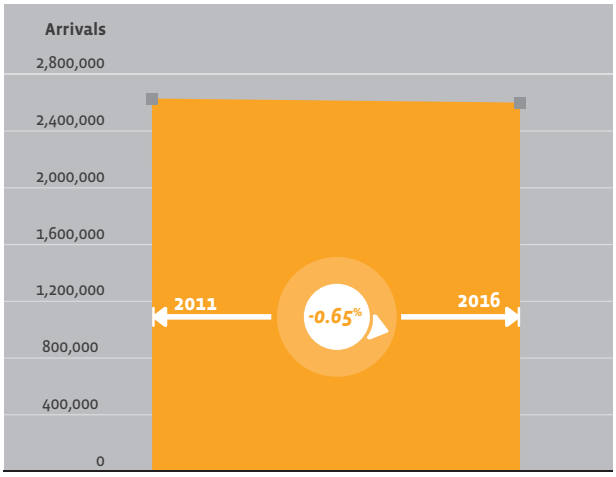


Source: EUROCONTROL PRU Portal

IFR Flights



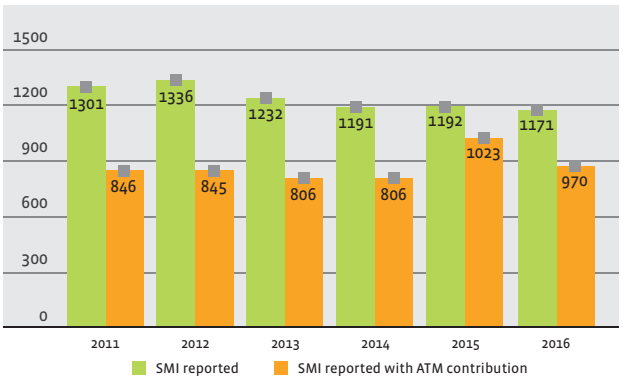
Airport movements



Source: EUROCONTROL PRU Portal

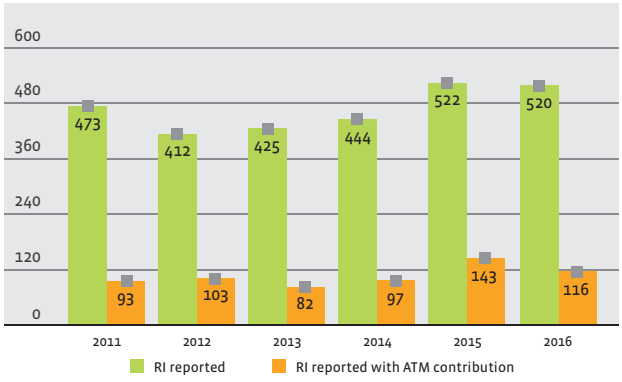
Safety

Separation Minima Infringements (SMI)



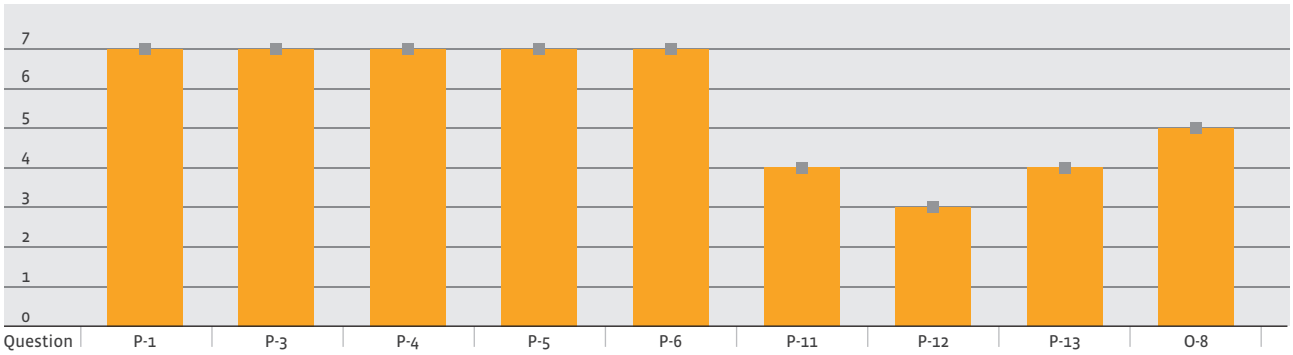
Source: FABEC ANSPs

Runway Incursions (RI)



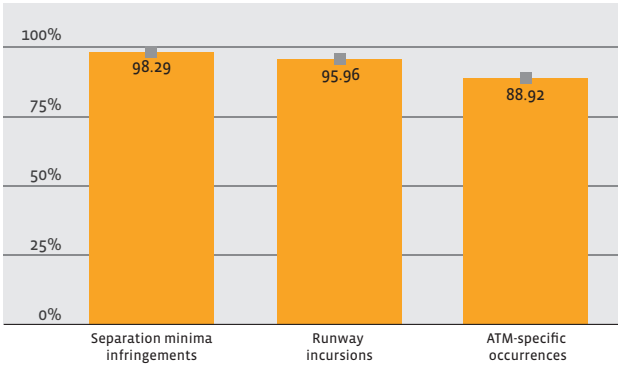
Safety

FABEC 2016 Just Culture results (Questionnaire)



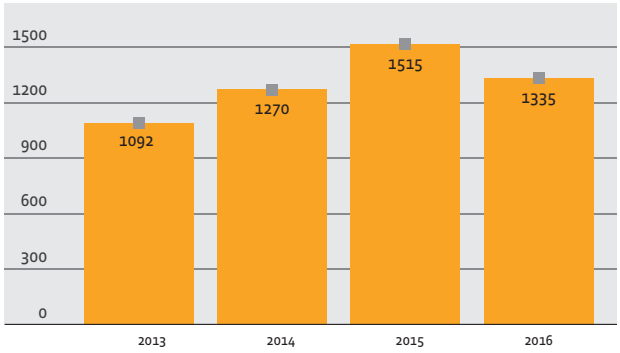
Source: FABEC ANSPs based on a standarised questionaire.

Usage of Risk Analysis Tool (RAT) methodology



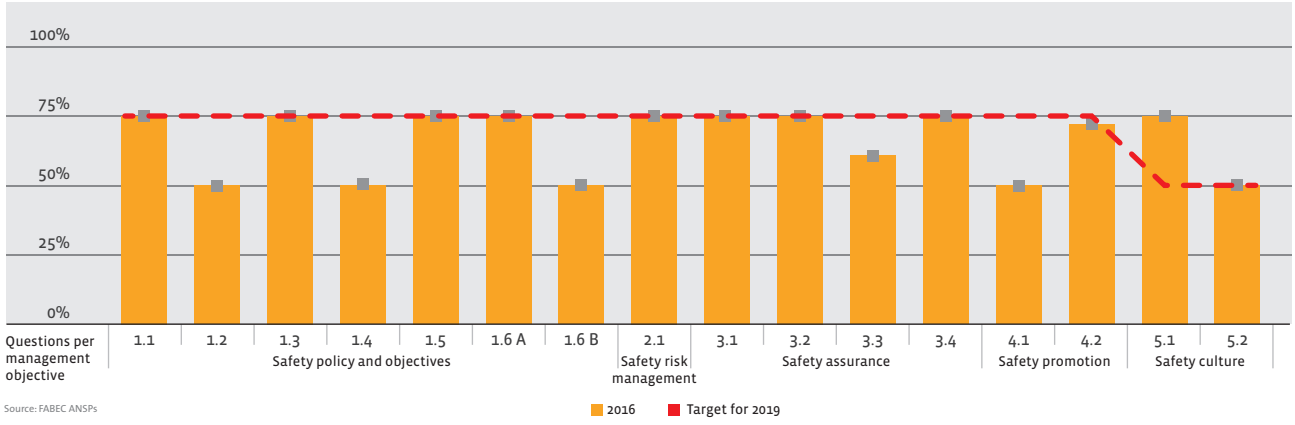
Source: FABEC ANSPs

Airspace infringements



Source: FABEC ANSPs

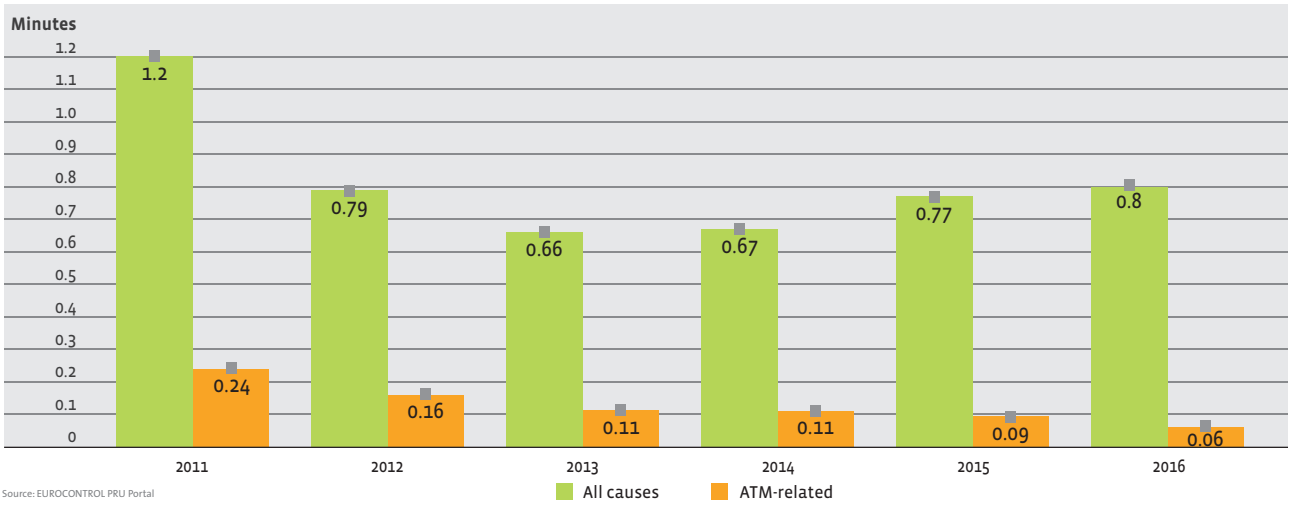
FABEC Effectiveness of Safety Management – Results by objectives, 2016



Source: FABEC ANSPs

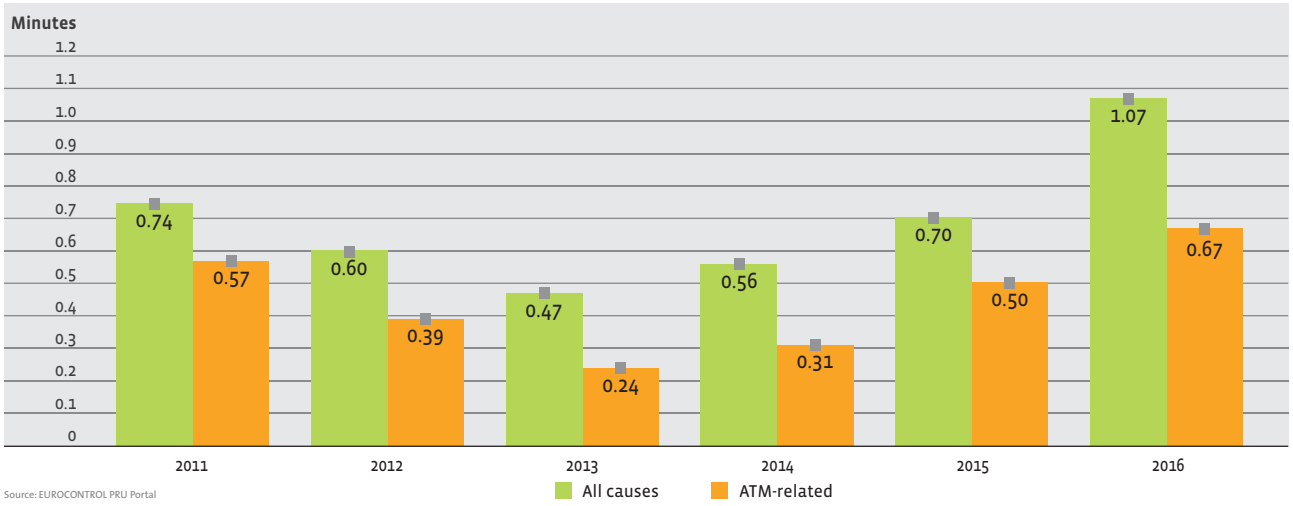
Punctuality

Average arrival ATFM-delay per flight



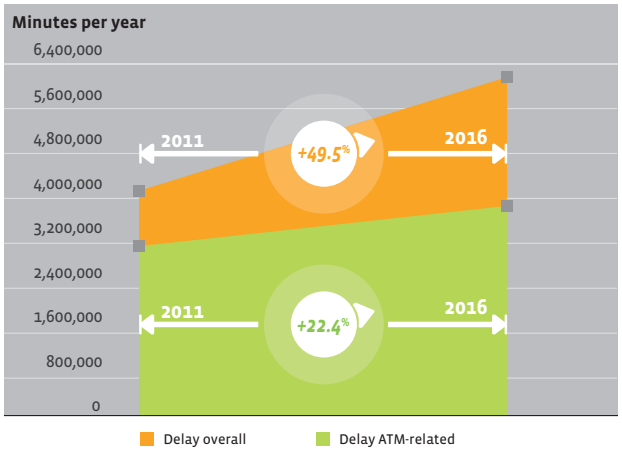
Source: EUROCONTROL PRU Portal

Average en-route ATFM-delay per flight



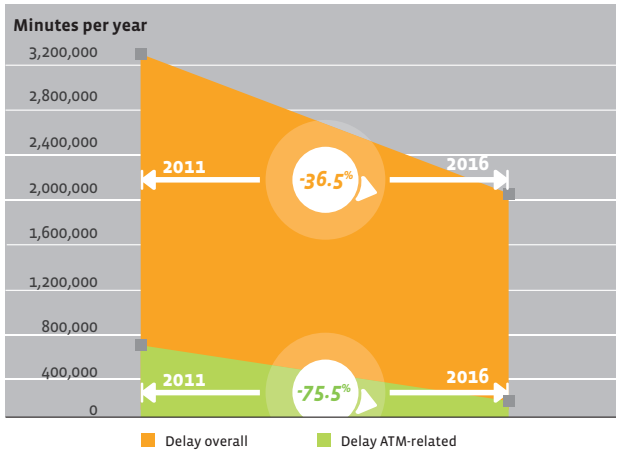
Source: EUROCONTROL PRU Portal

En-route ATFM-delay



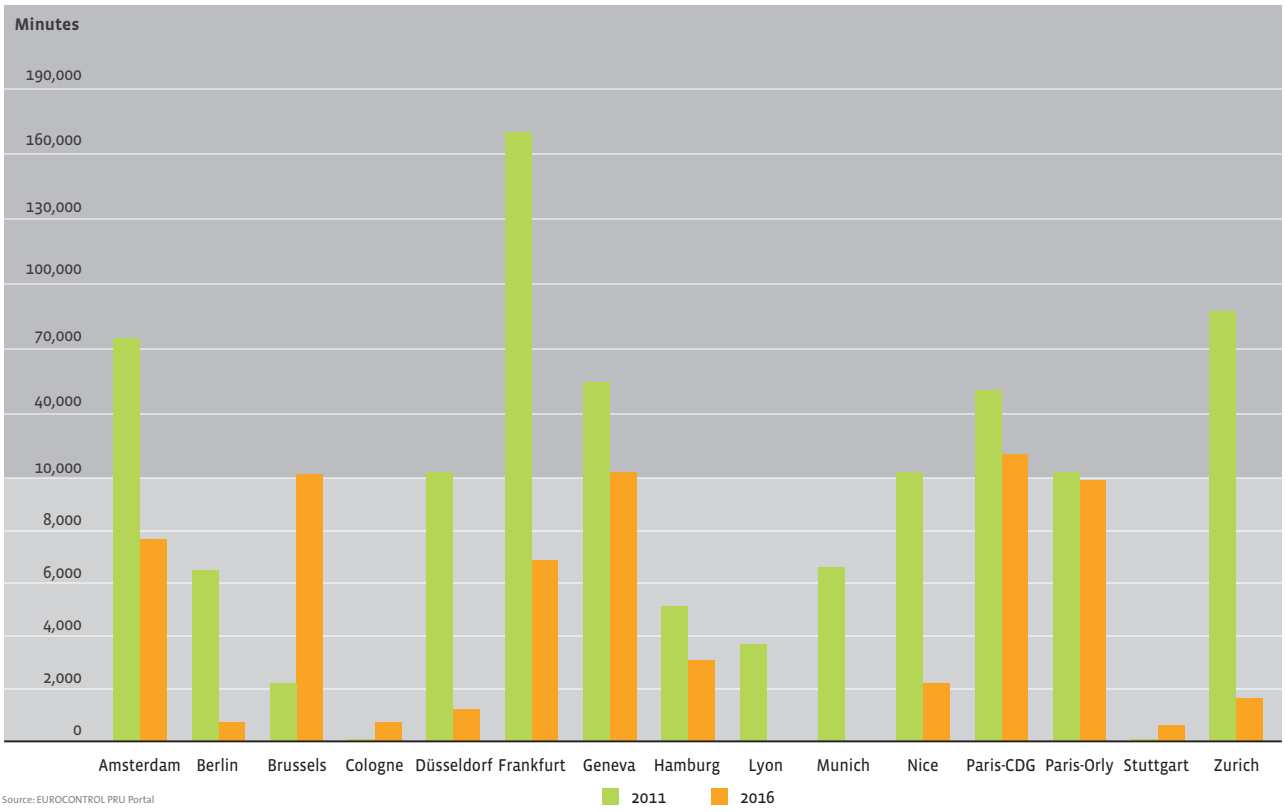
Source: NMIR (Network Manager Interactive Reporting)

Arrival ATFM-delay



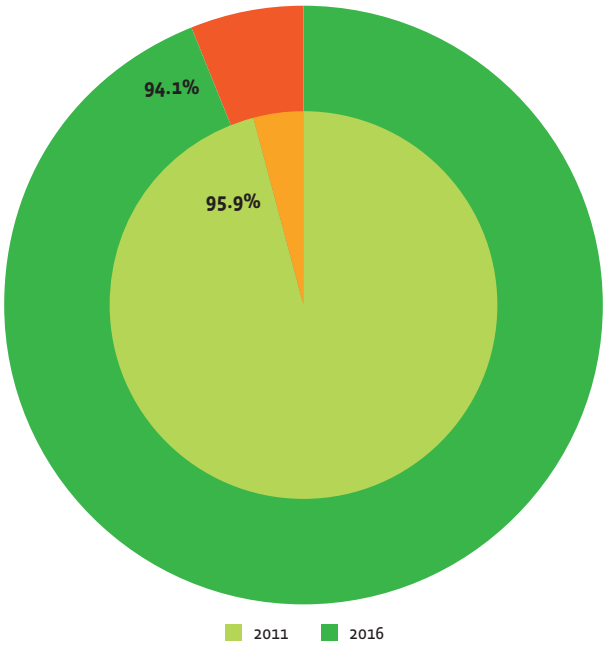
Source: EUROCONTROL PRU Portal

ATM-related ATFM-arrival delay

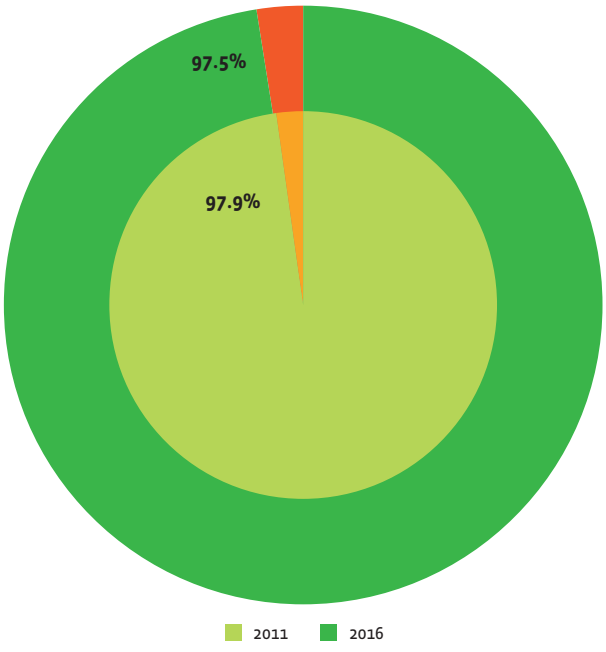


Source: EUROCONTROL PRU Portal

Share of flights on-time (en-route)



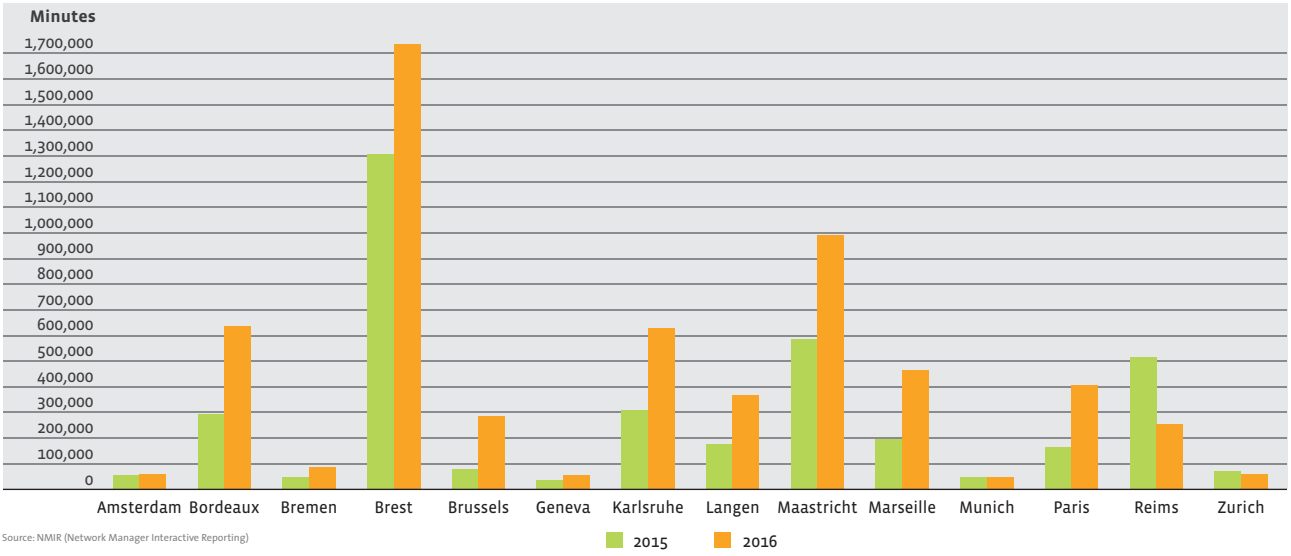
Flights with less than 15 min. en-route ATFM-delay



Source: EUROCONTROL PRU

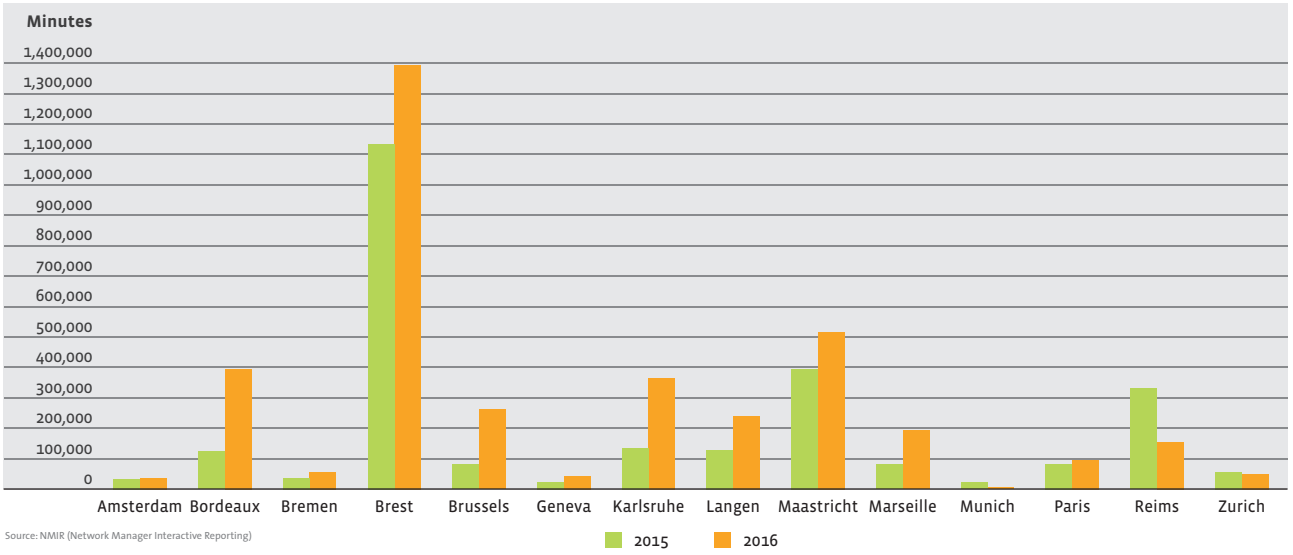
Punctuality

En-route ATFM-delay all causes



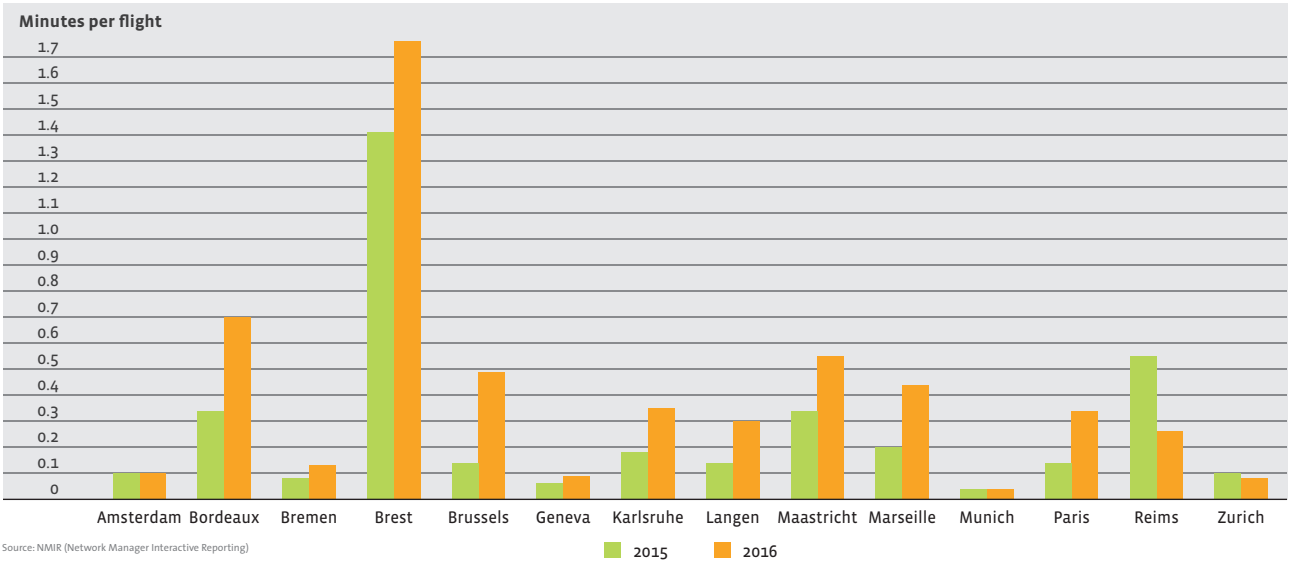
Source: NMIR (Network Manager Interactive Reporting)

En-route ATFM-delay ATM-related



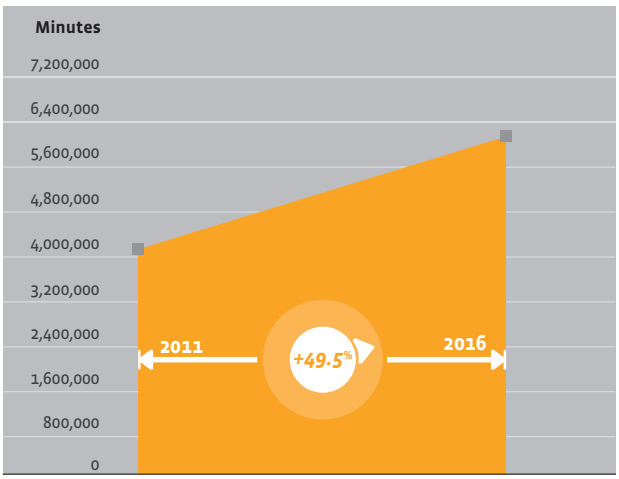
Source: NMIR (Network Manager Interactive Reporting)

En-route ATFM-delay per controlled flight all causes

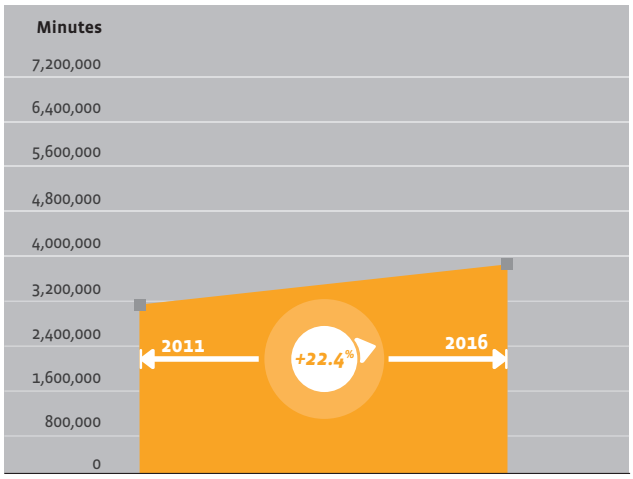


Source: NMIR (Network Manager Interactive Reporting)

En-route ATFM-delay trend: All causes



En-route ATFM-delay trend: ATM responsibility

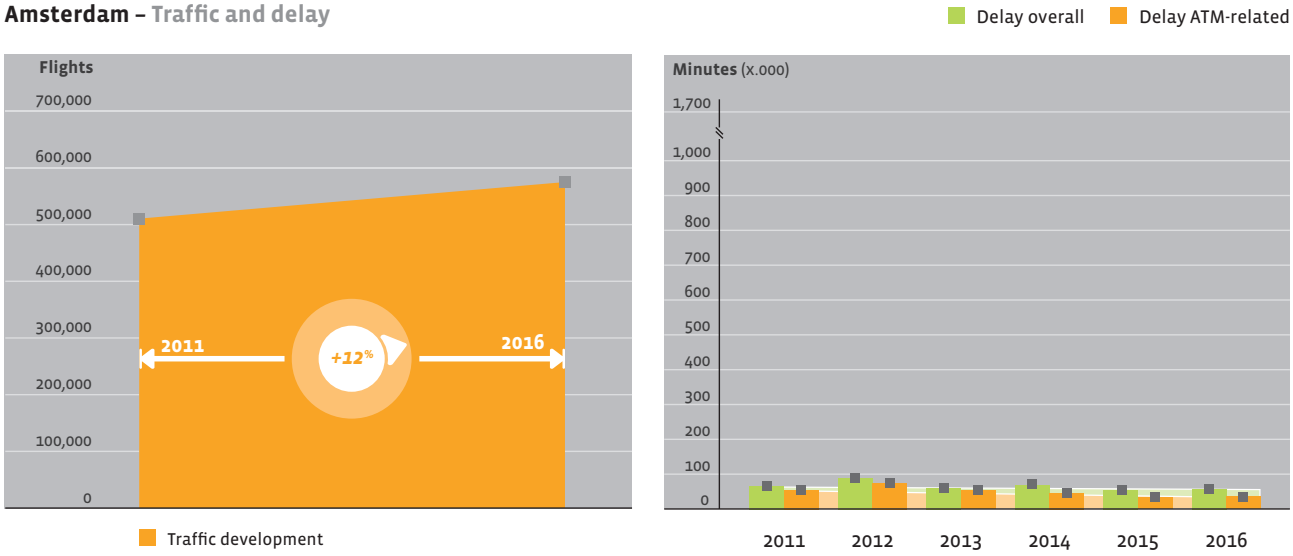


Source: NMIR (Network Manager Interactive Reporting)

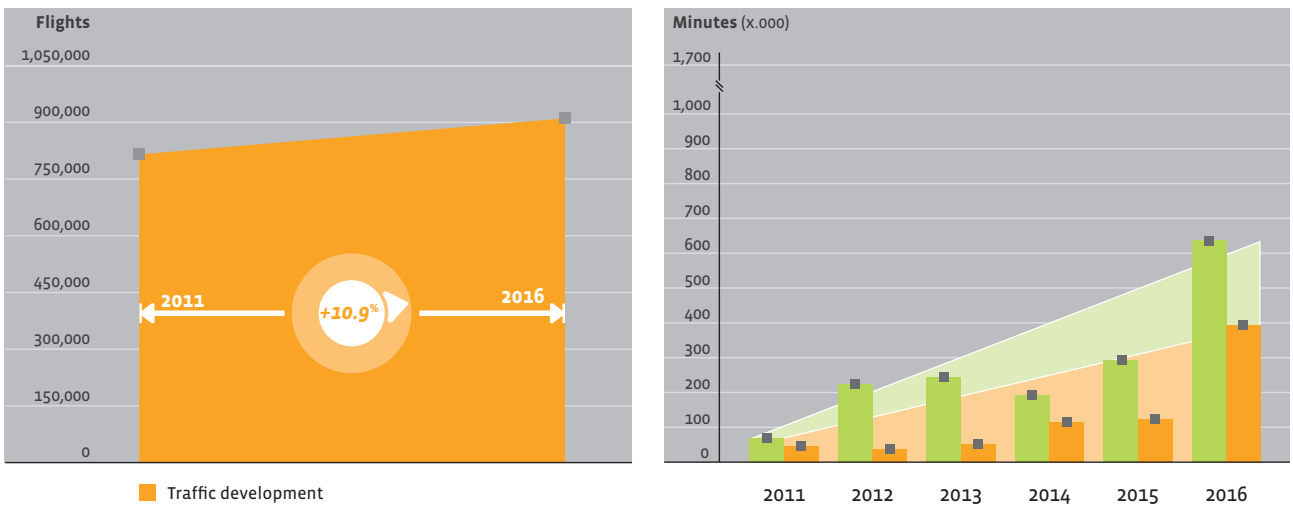
Traffic and punctuality: Trends en-route per ATC centre

Source: NMIR (Network Manager Interactive Reporting)

Amsterdam – Traffic and delay

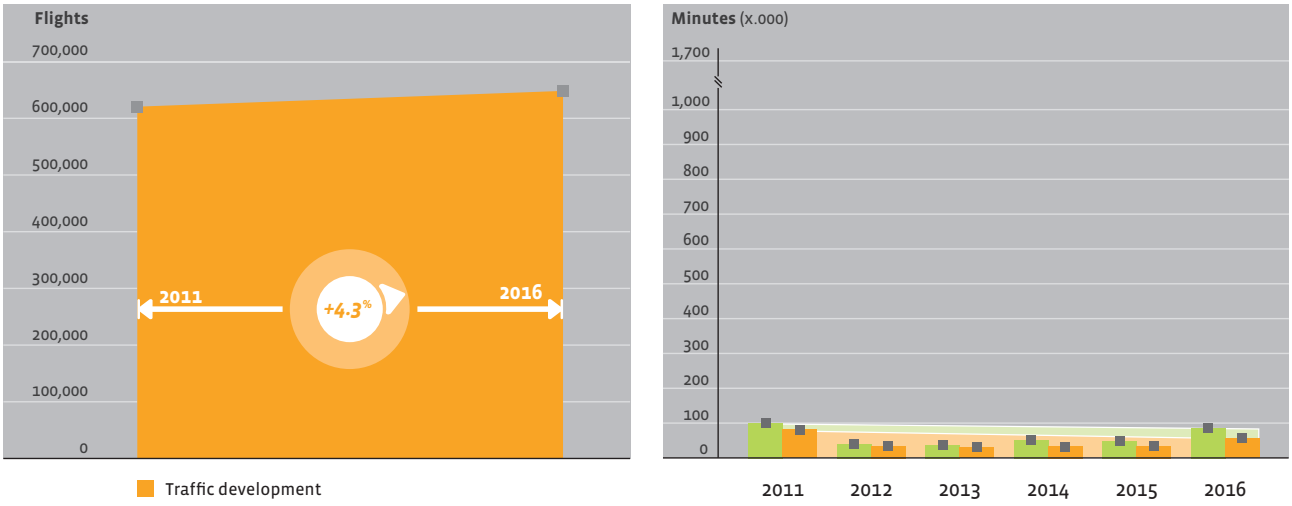


Bordeaux – Traffic and delay

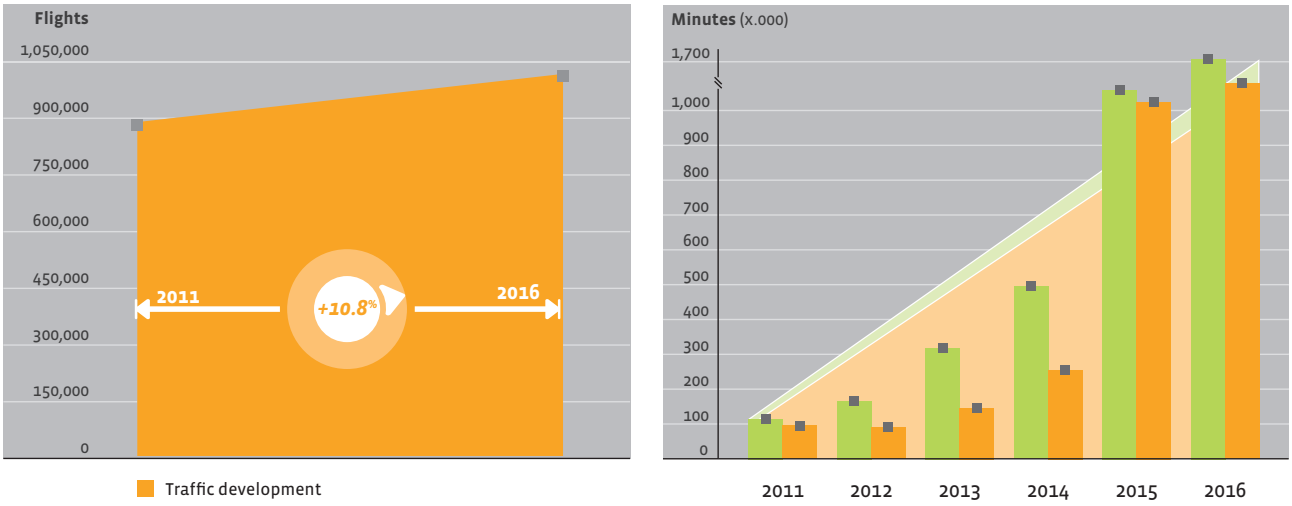


Traffic and punctuality: Trends en-route per ATC centre

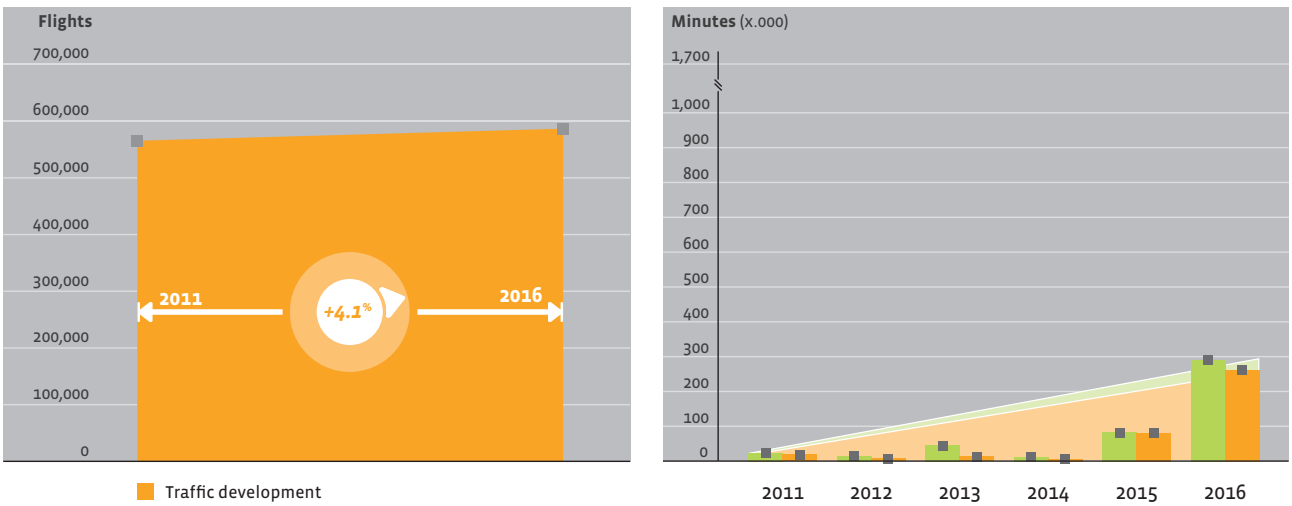
Bremen – Traffic and delay



Brest – Traffic and delay

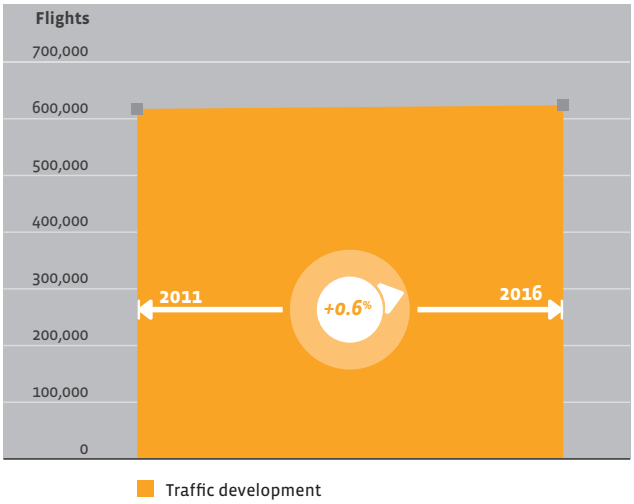


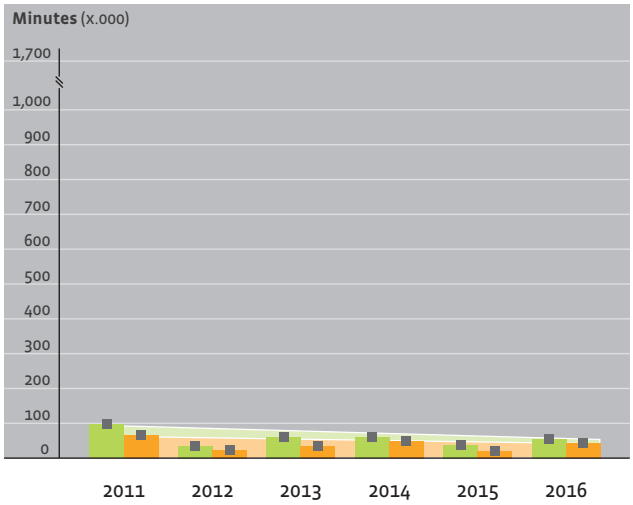
Brussels – Traffic and delay



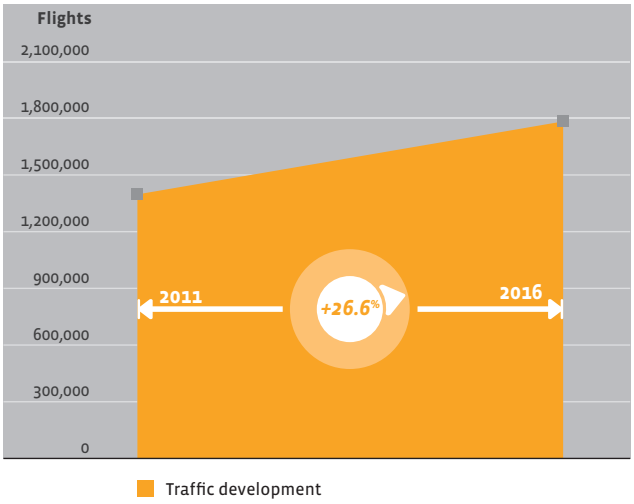
Source: NMIR (Network Manager Interactive Reporting)

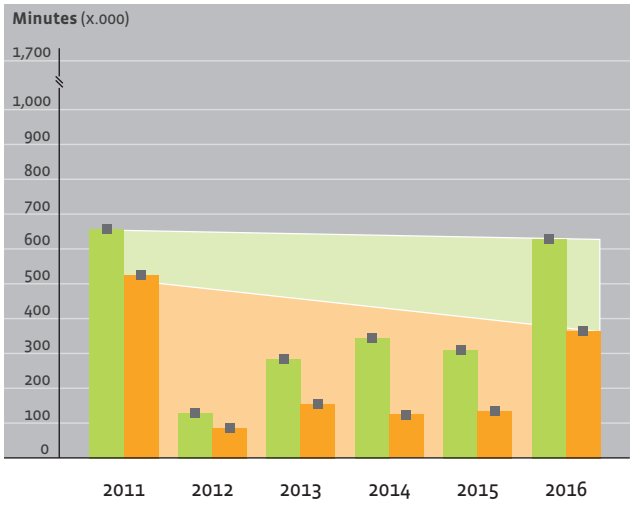
Geneva – Traffic and delay



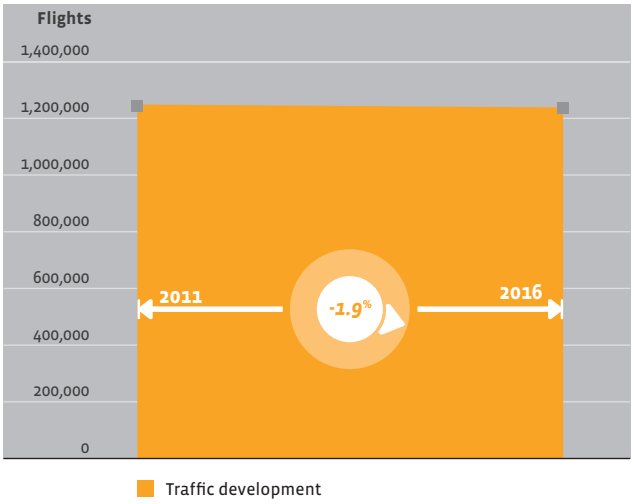


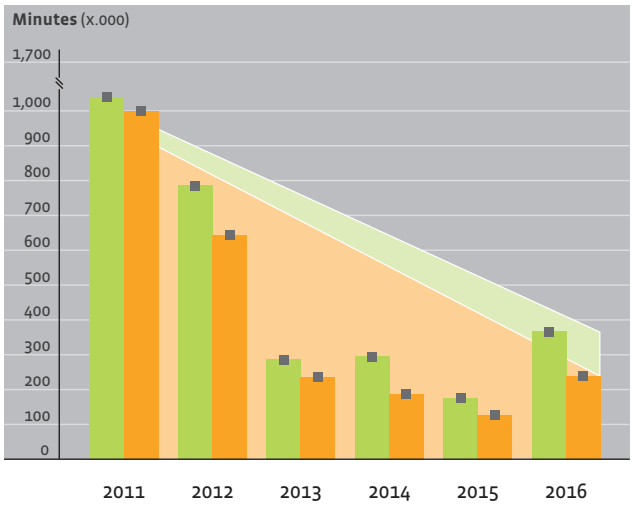
Karlsruhe – Traffic and delay





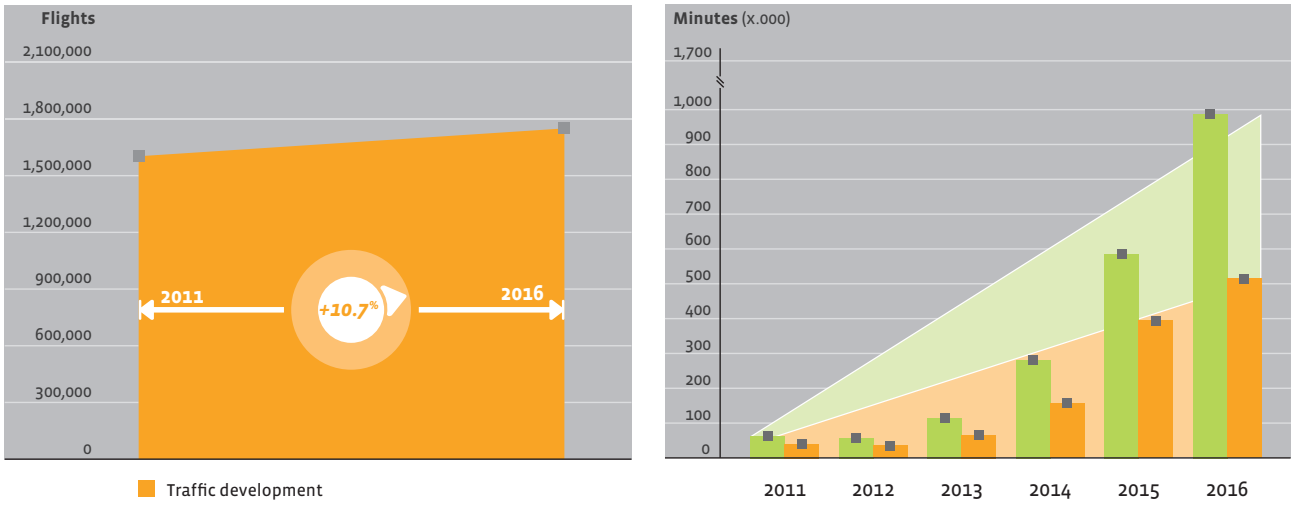
Langen – Traffic and delay



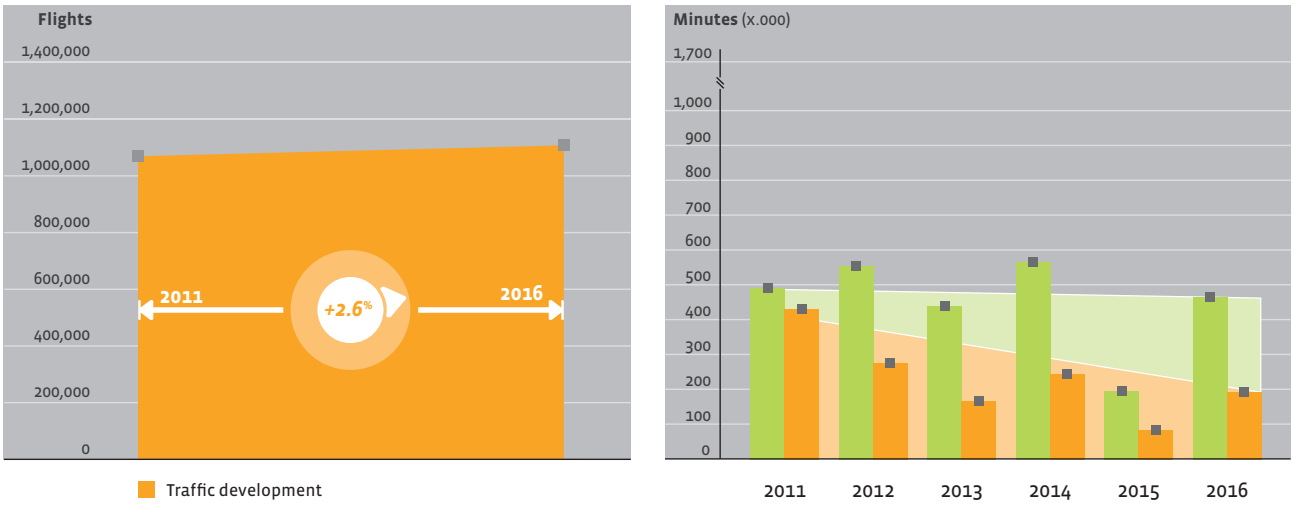


Traffic and punctuality: Trends en-route per ATC centre

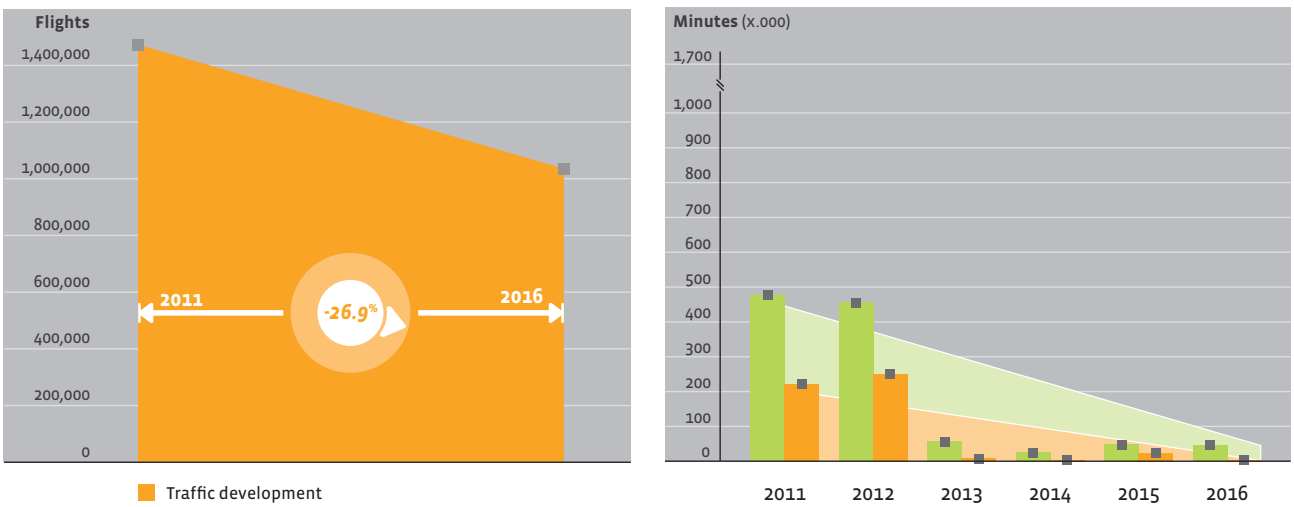
Maastricht – Traffic and delay



Marseille – Traffic and delay

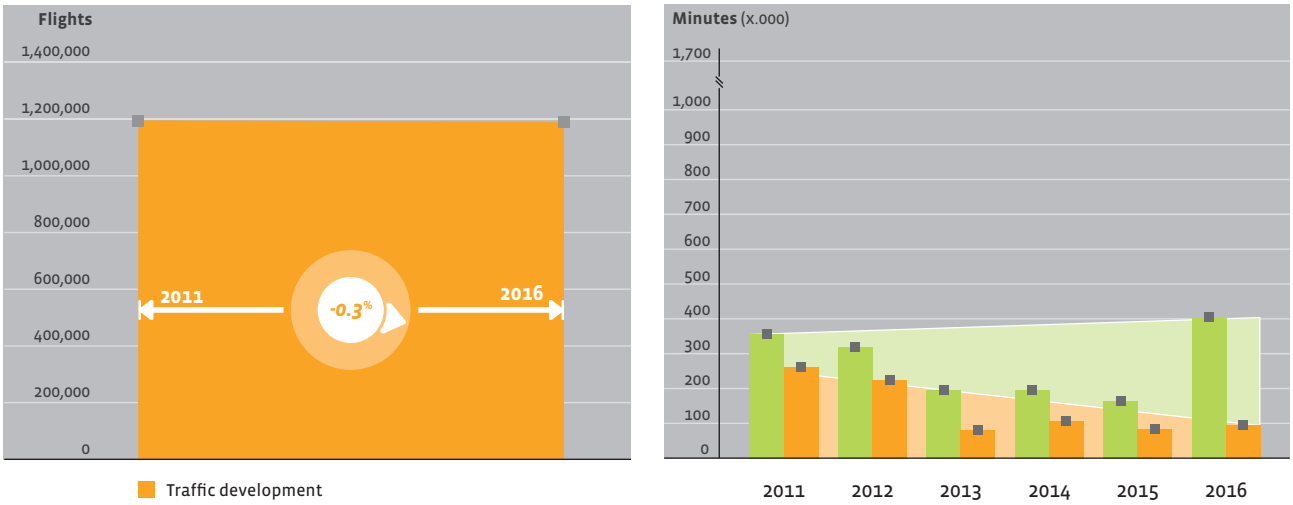


Munich – Traffic and delay

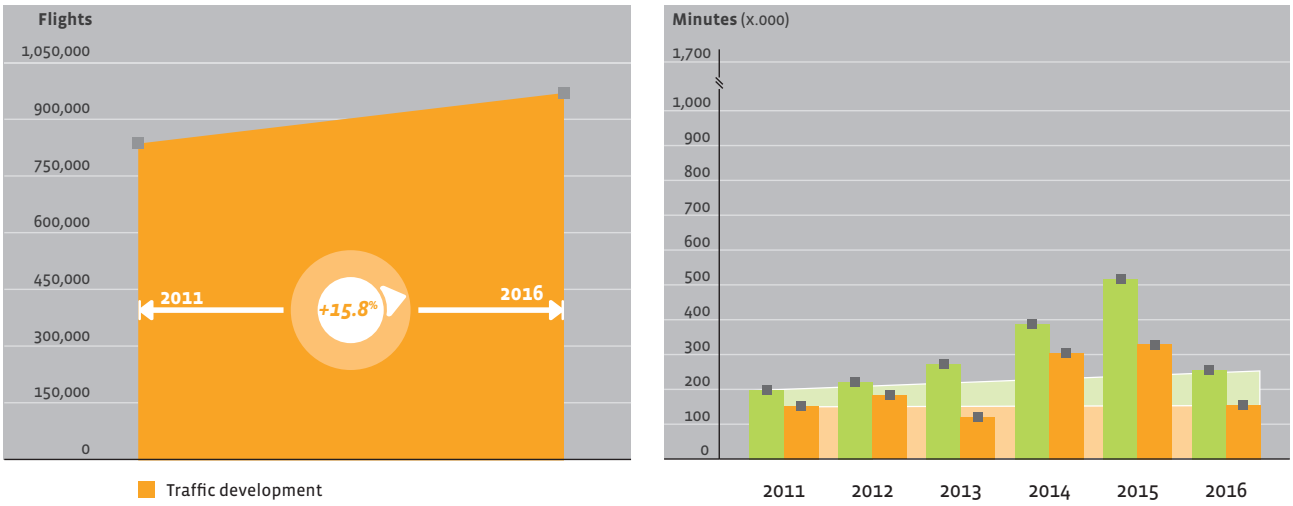


Source: NMIR (Network Manager Interactive Reporting)

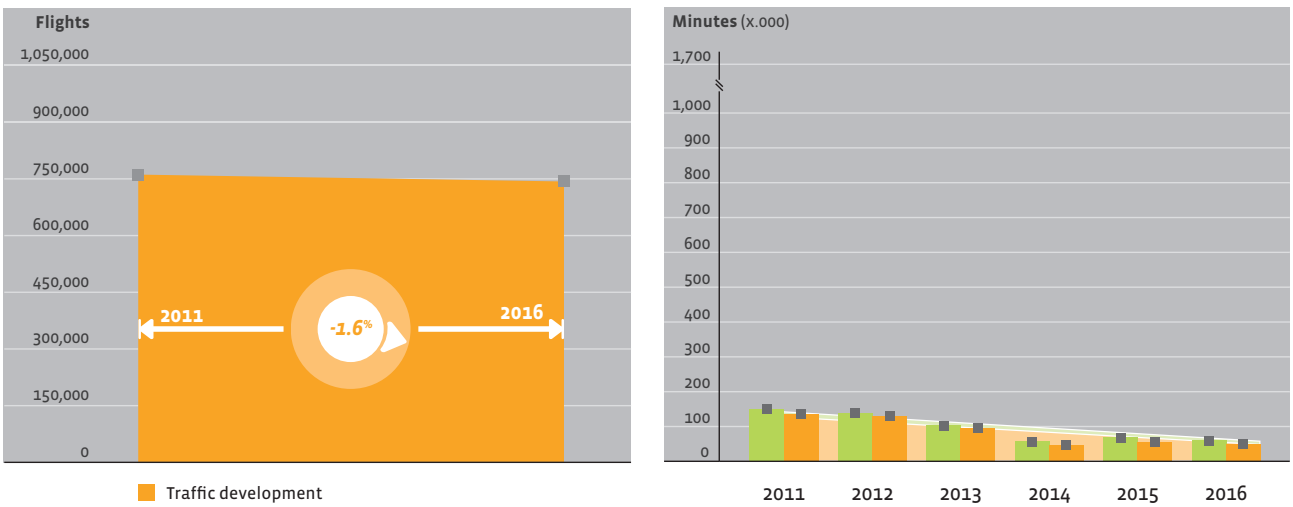
Paris – Traffic and delay



Reims – Traffic and delay

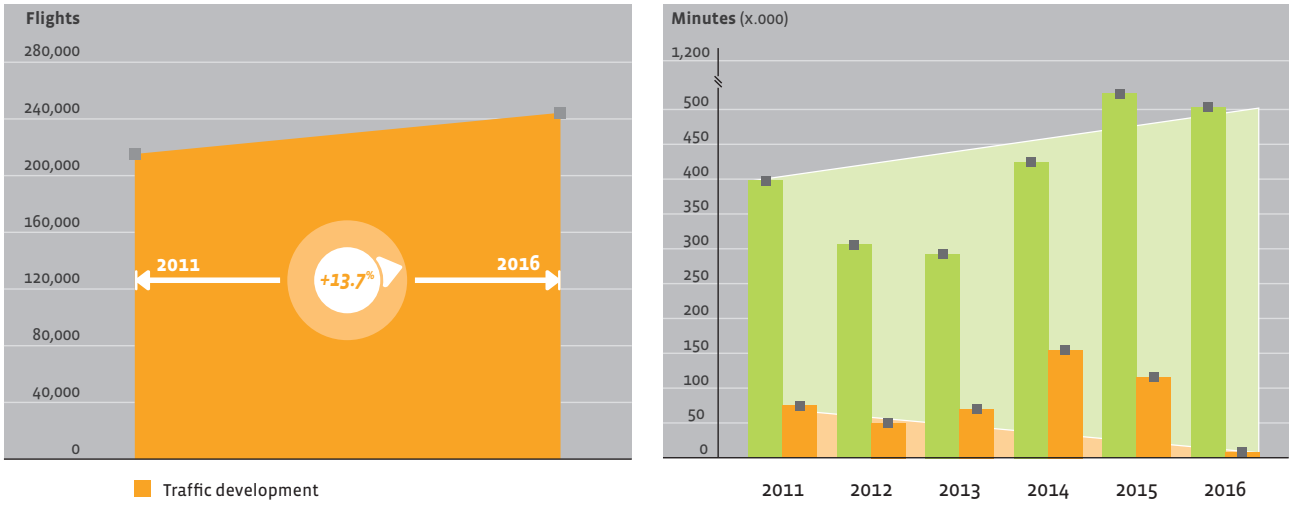


Zurich – Traffic and delay

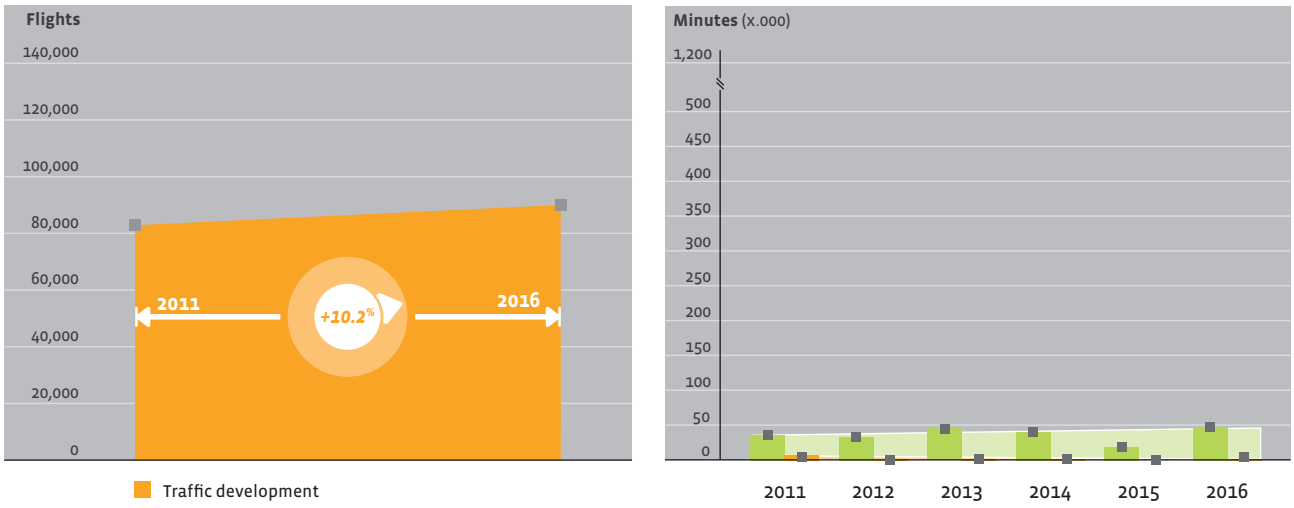


Traffic and punctuality: Trends arrivals

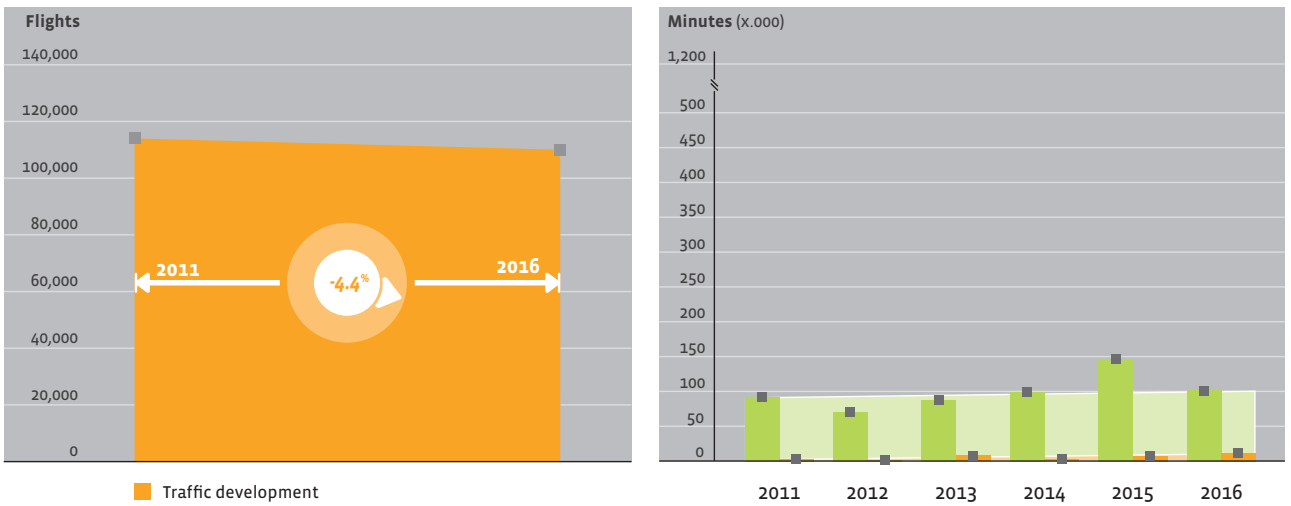
Amsterdam – Arrivals



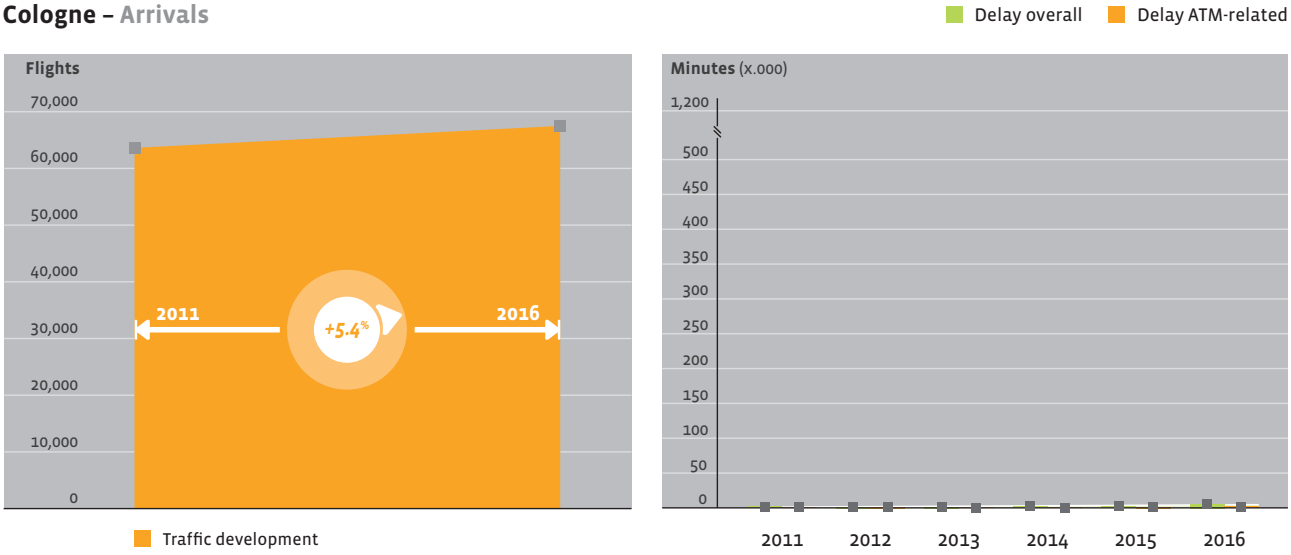
Berlin-Tegel – Arrivals



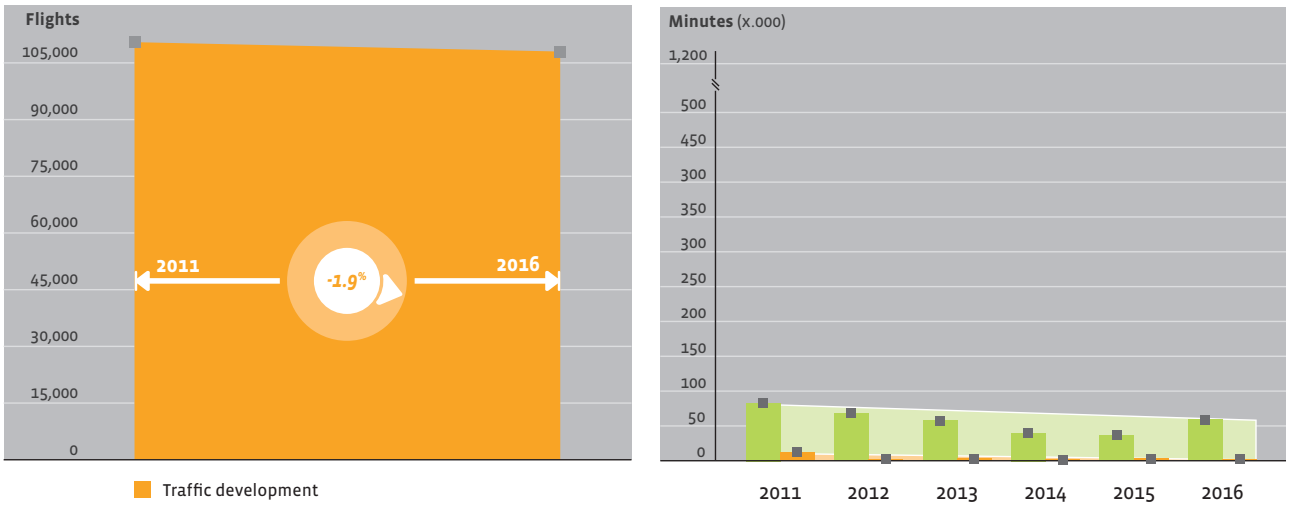
Brussels – Arrivals



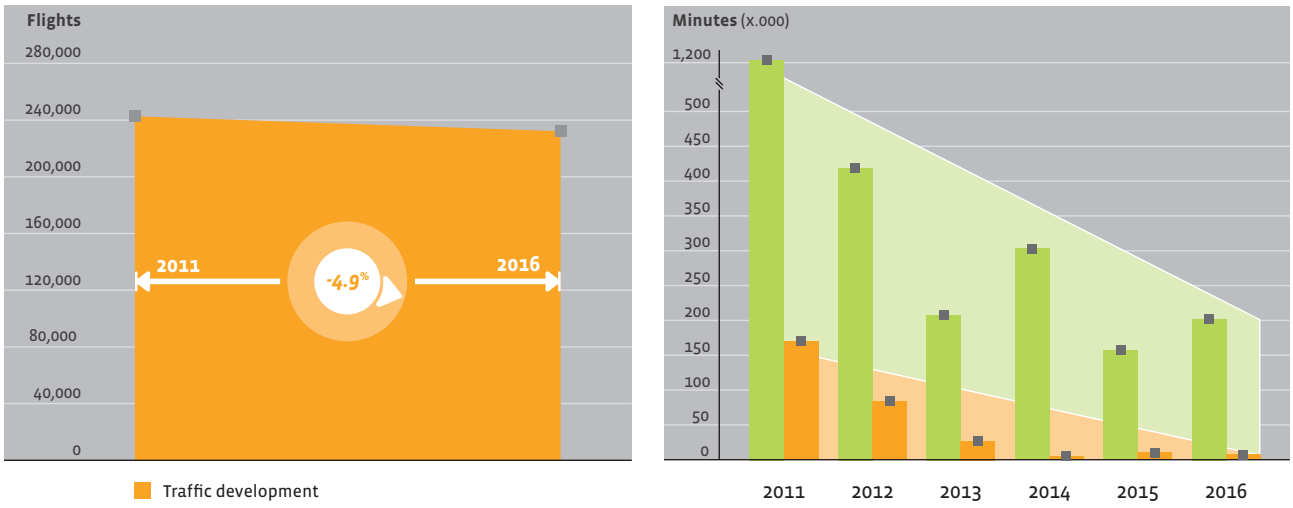
Cologne – Arrivals



Düsseldorf – Arrivals

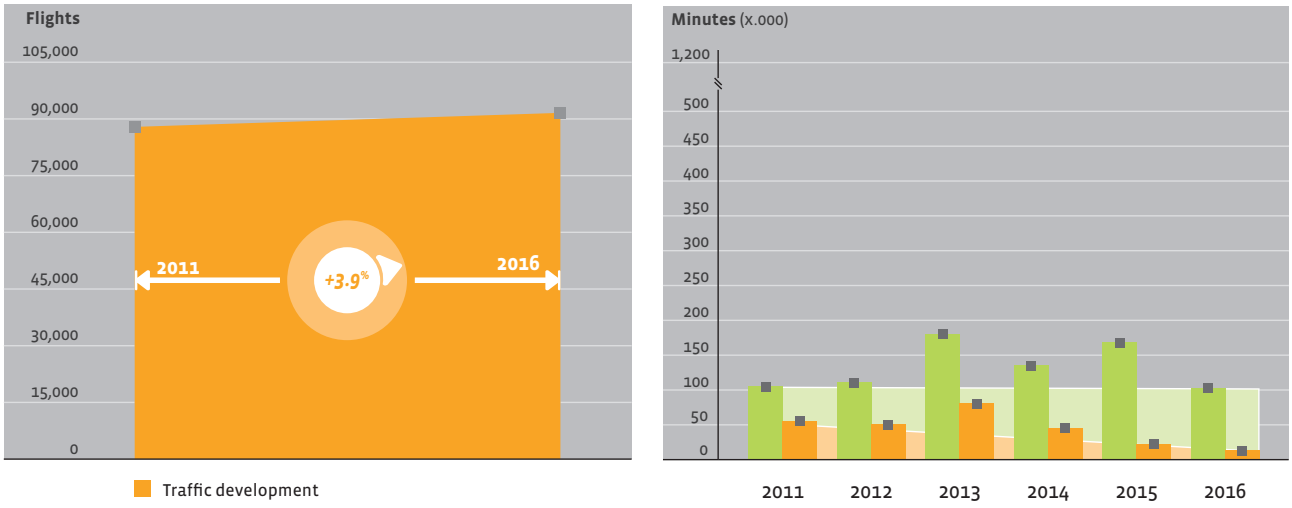


Frankfurt – Arrivals

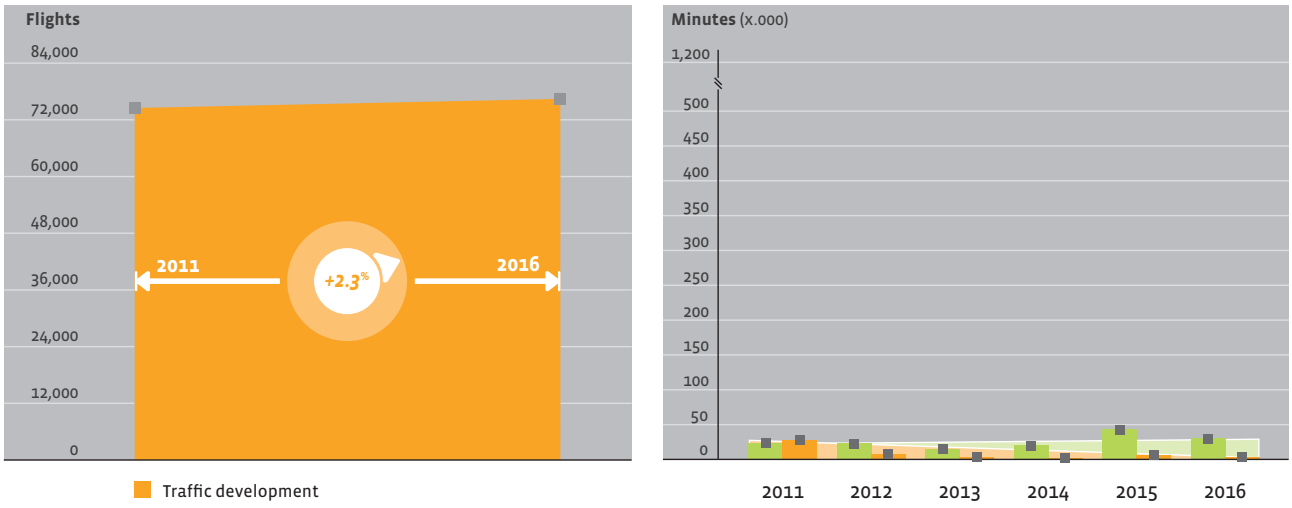


Traffic and punctuality: Trends arrivals

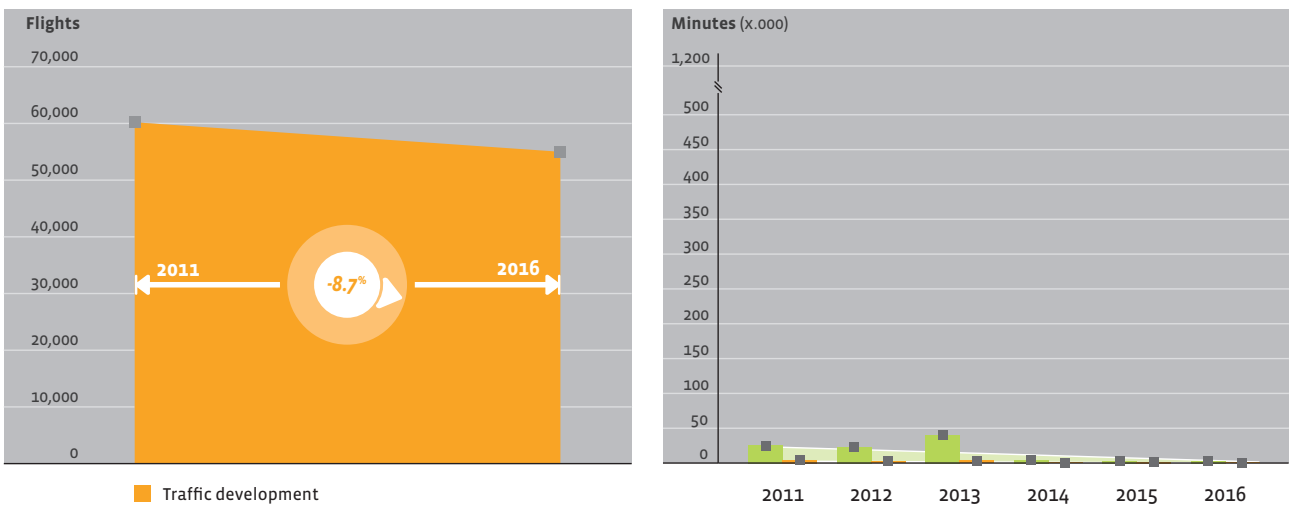
Geneva – Arrivals



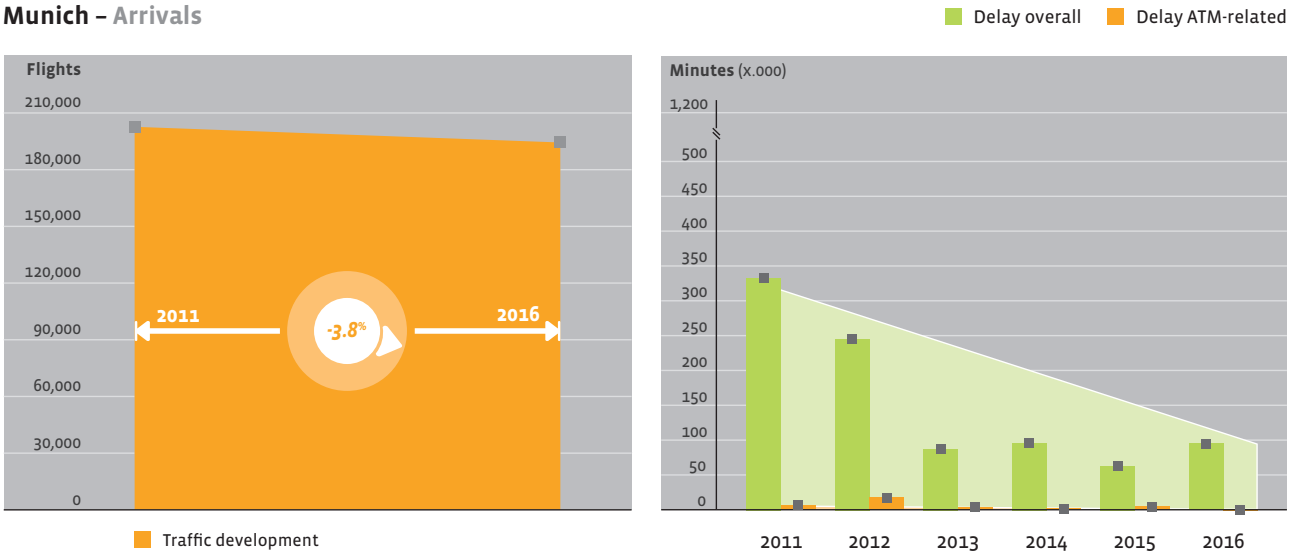
Hamburg – Arrivals



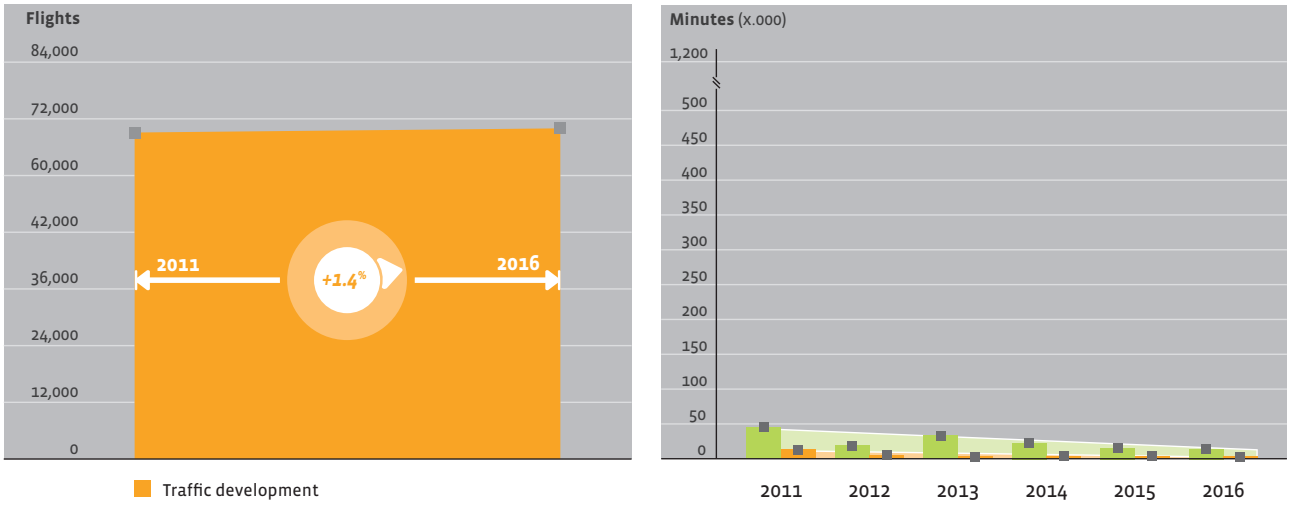
Lyon – Arrivals



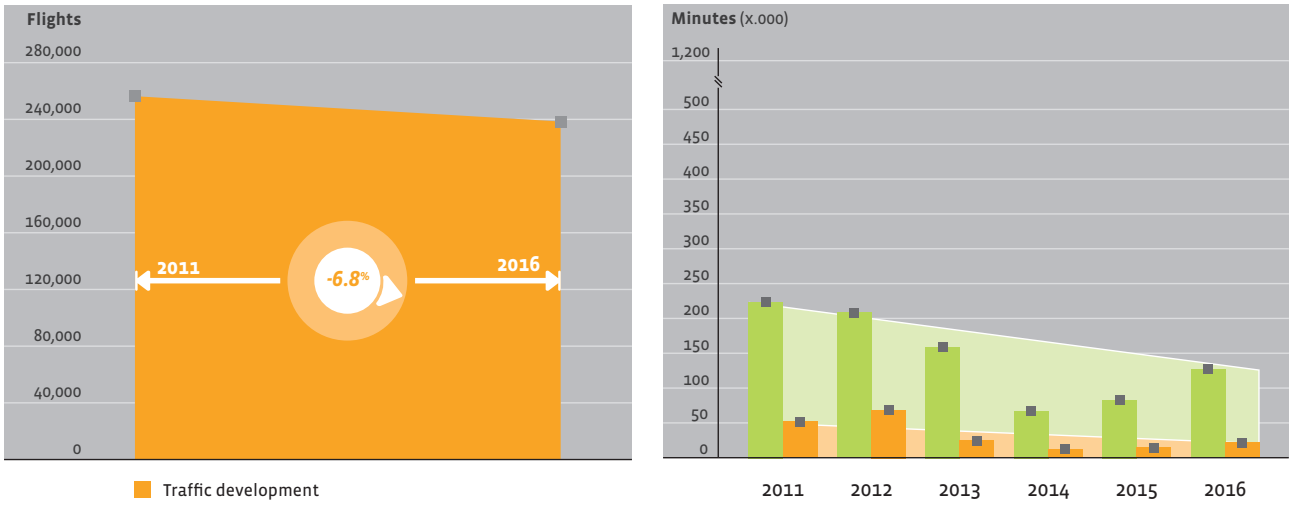
Munich – Arrivals



Nice – Arrivals



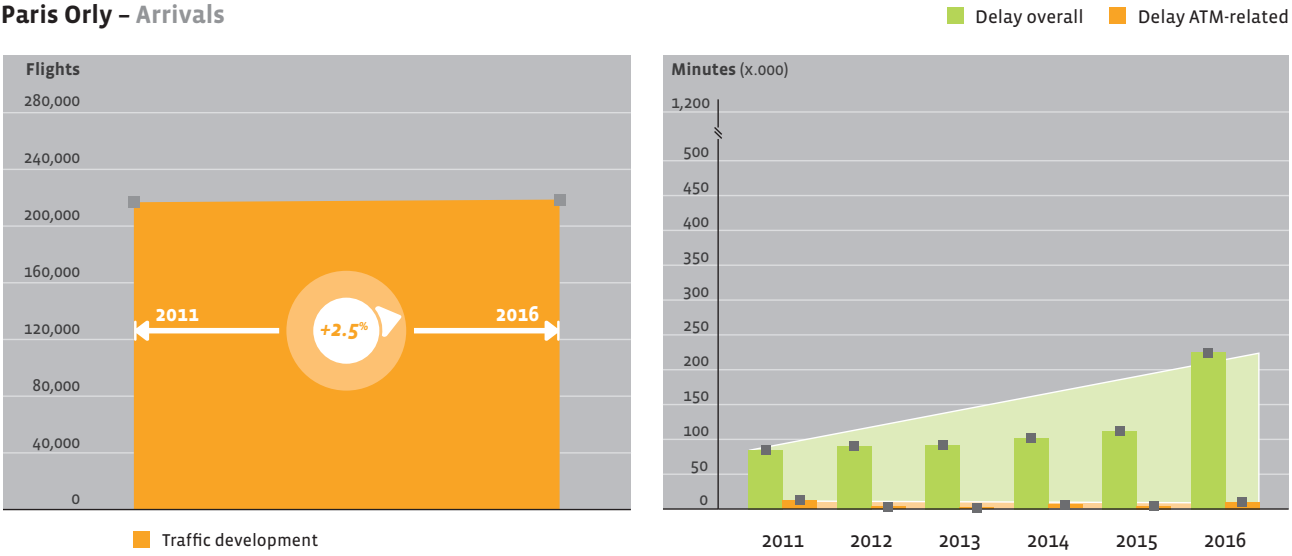
Paris CDG – Arrivals



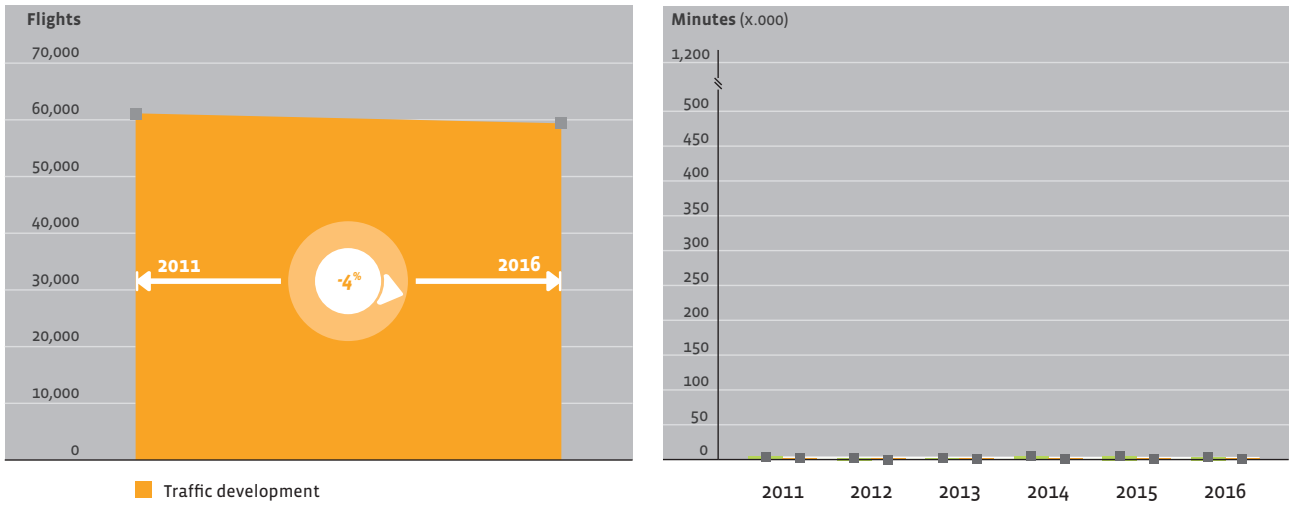
Traffic and punctuality: Trends arrivals

Source: EUROCONTROL PRU Portal

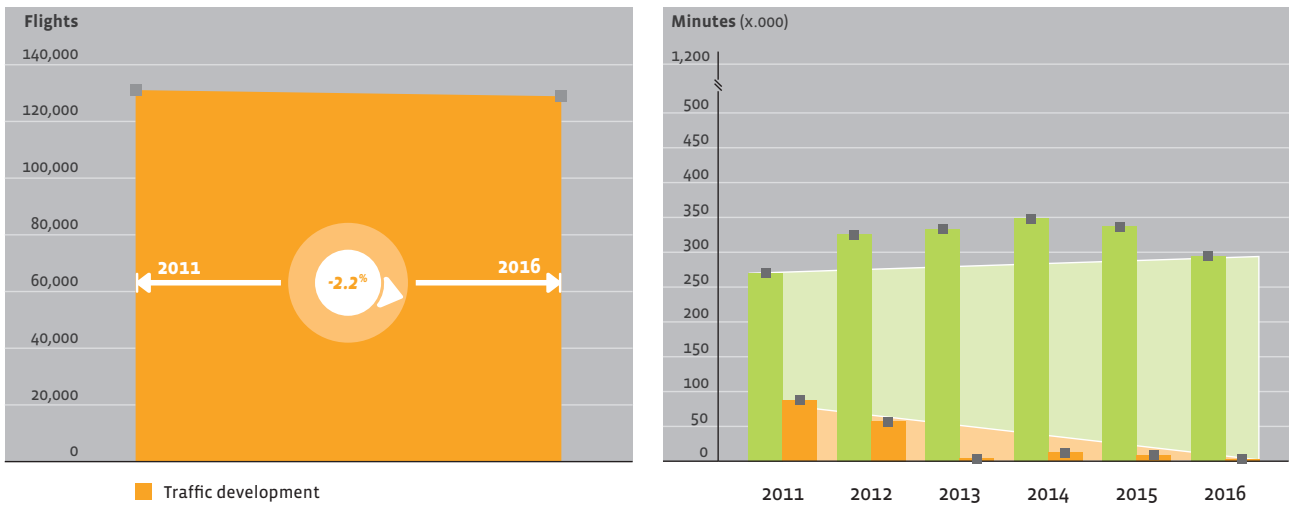
Paris Orly – Arrivals



Stuttgart – Arrivals

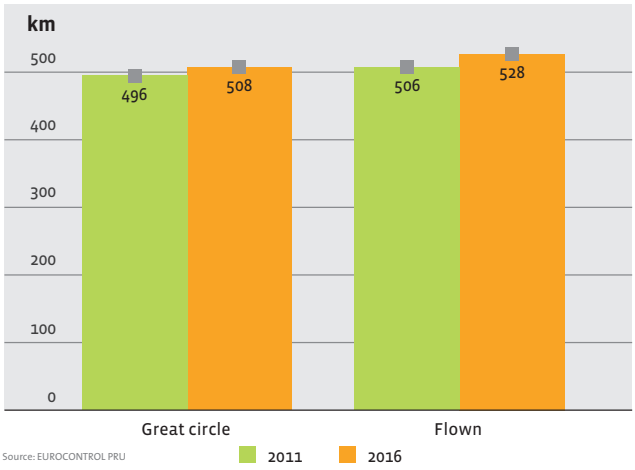


Zurich – Arrivals



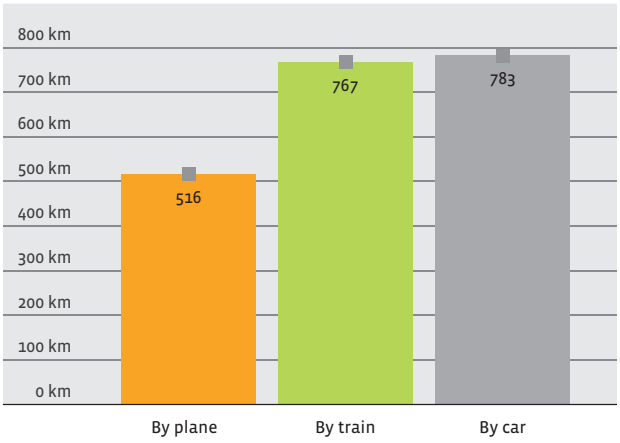
Environment

Average distances per flight in the FABEC airspace



Source: EUROCONTROL PRU

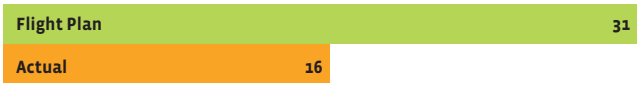
In comparison to other means of transport, travel by air is very efficient. Example: Brussels - Munich



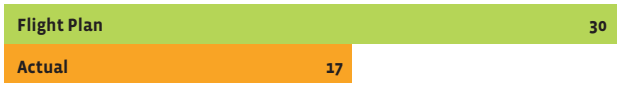
Source: FABEC ANSPs

Horizontal route extension

2012 in kilometer per flight



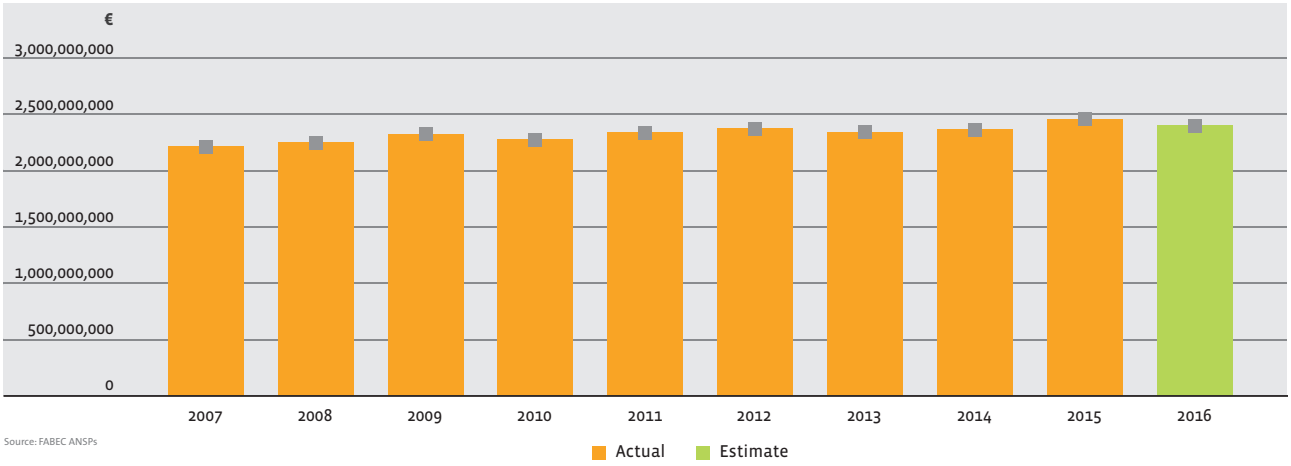
2016 in kilometer per flight



Source: EUROCONTROL PRU

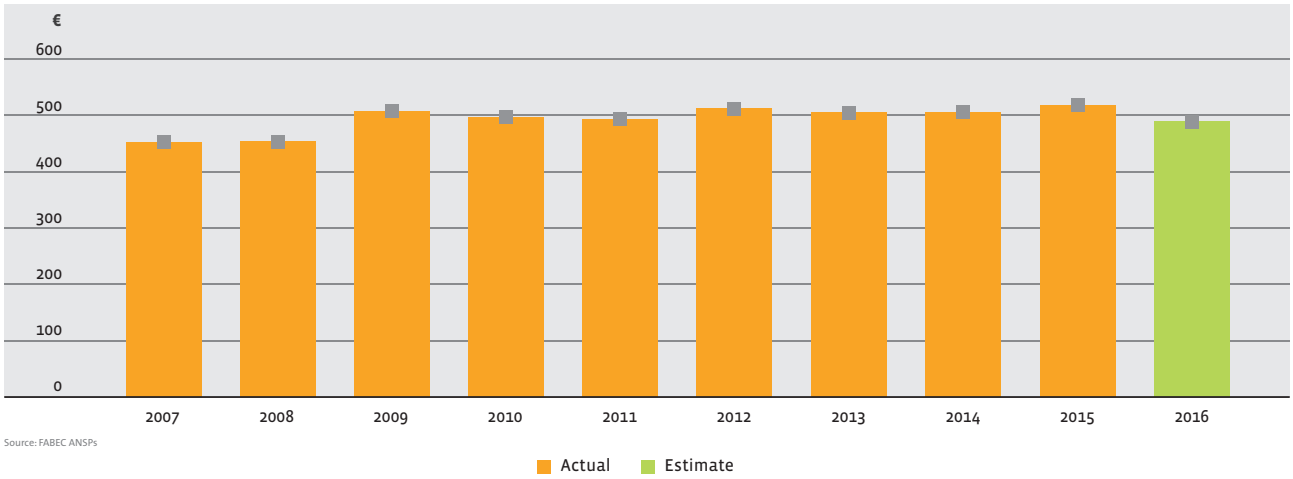
Finance

En-Route ATM/CNS Provision Costs in € 2015 price



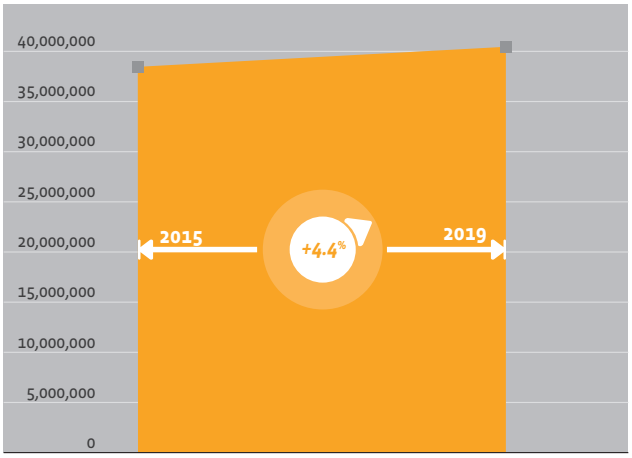
Source: FABEC ANSPs

En-Route Unit Costs in € 2015 price (ATM/CNS Provision Costs per controlled IFR Flight-hours)

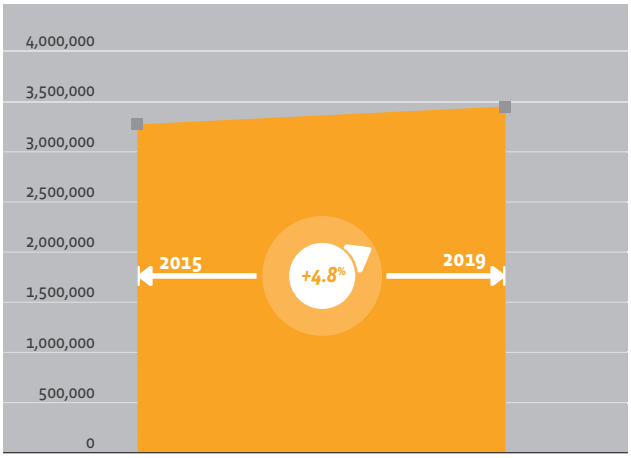


Source: FABEC ANSPs

En-route service units FABEC

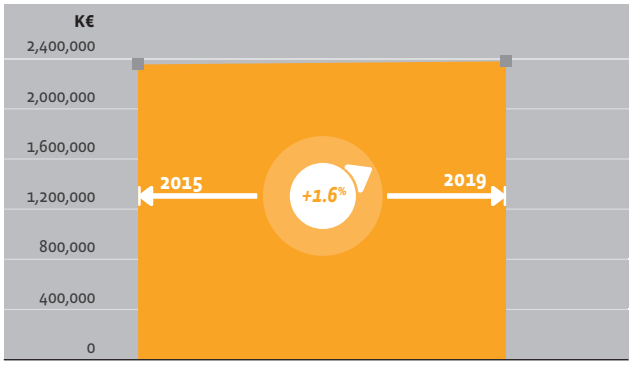


Terminal service units FABEC

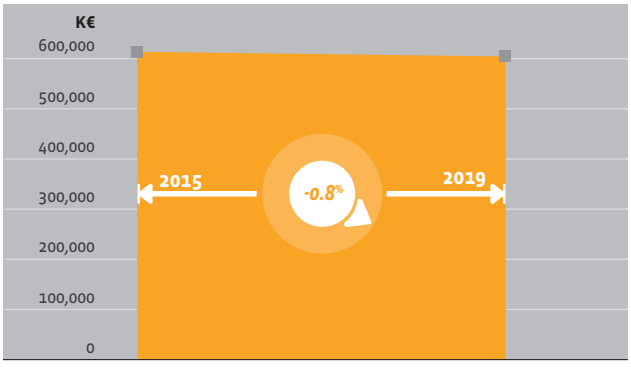


Source: FABEC ANSPs

En-route costs in 2015 price in real terms FABEC



Terminal costs in 2015 price in real terms FABEC



Source: FABEC ANSPs

Acronyms and abbreviations

ACC
Area Control Centre

AI
Airspace Infringement

ANSP
Air Navigation Service Provider

ATC
Air Traffic Control

ATFM
Air Traffic Flow Management

ATM
Air Traffic Management

EC
European Commission

EoSM
Effectiveness of Safety Management

ICAO
International Civil Aviation Organisation

IFR
Instrument Flight Rules

KEA
Indicator for flight-efficiency

KPA
Key Performance Area

KPI
Key Performance Indicator

MME
Military Mission Effectiveness

PRU
Performance Review Unit (EUROCONTROL)

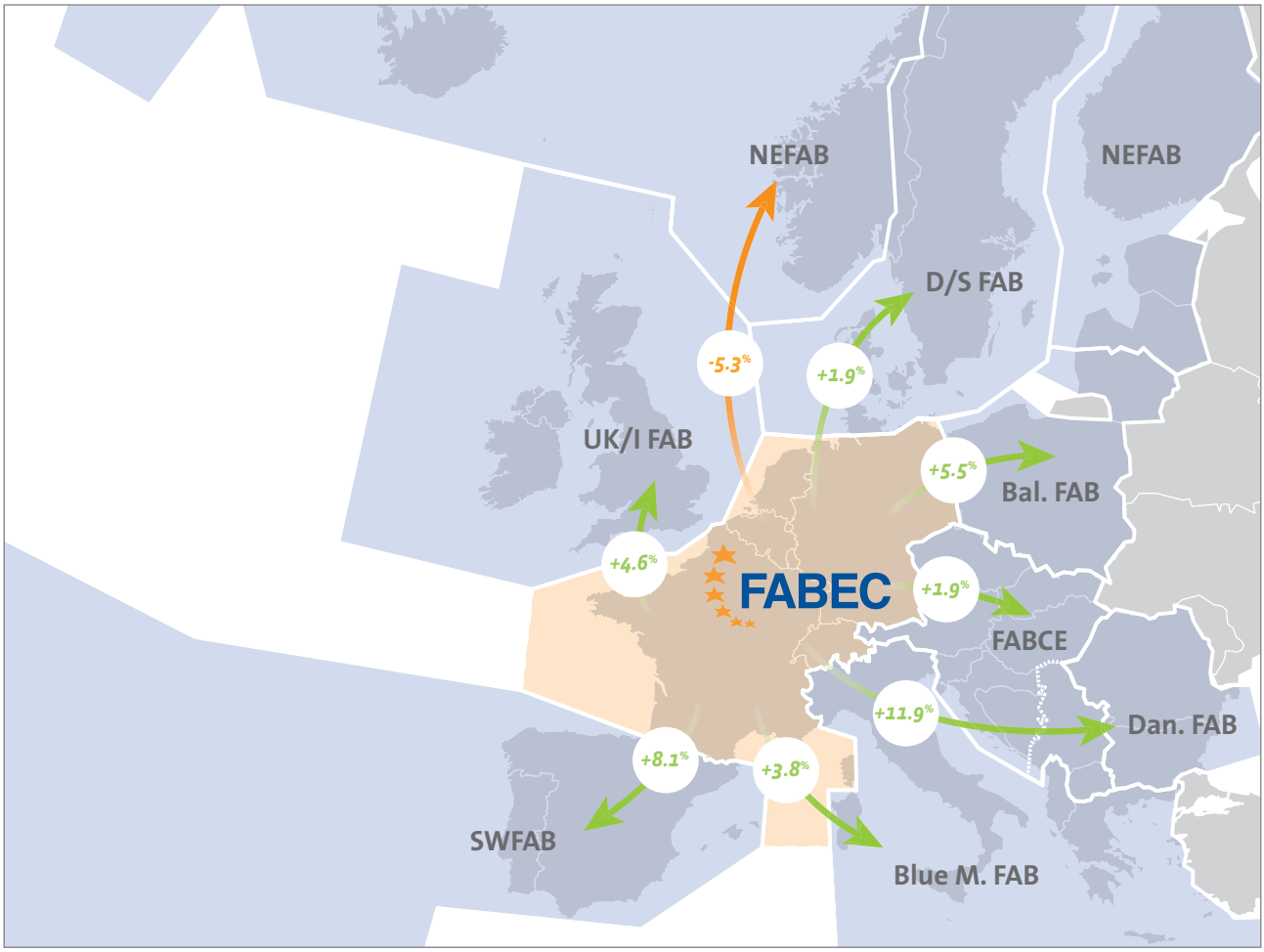
RAT
Risk Analysis Tool

RI
Runway Incursion

SESAR
Single European Sky ATM Research Programme

SMI
Separation Minimum Infringement

TWR
Tower



European Domestic Traffic via FABEC: Growth rate 2015/2016 (with leap year adjustment)

Points of contact

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