

# *Business Plan*

*2013-2017*



*Business Plan 2013-2017*

**NAVIAIR**

*Air Navigation Services*



# ***Fundamental strength despite economic downturn***

2012 was a significant year for Naviair in two important areas, with initiatives that will bring about considerable improvements in Air Traffic Management (ATM). In March, the extensive update of our ATM system with the implementation of COOPANS was completed without any problems, and, in July, NUAC took over the operation of the three ATCCs in Copenhagen, Malmö and Stockholm on behalf of Naviair and LFV.

It is a matter of principle for us that our services must be provided without inconvenience to our customers – even when we are rolling out upgrades and carrying out efficiency improvements that will make ATM better for both airlines and passengers. The considerable modernisations and alterations in 2012 did not result in any delays for air traffic, so no inconvenience was caused to either passengers or airlines.

We are working on improving the efficiency of our operations and reaping the benefits of the joint, coordinated operation of the ATCCs in Denmark and Sweden. We aim to continuously reduce our costs over the coming years. At the same time, through NUAC, we will continuously improve and optimise the structure of airspace so that airlines can fly as directly, cost-effectively and efficiently as possible.

The Danish-Swedish model with a jointly owned, integrated operating company is still absolutely unique in the field of European ATM and the model has received wide recognition from the EU, among others, with the Commission's Special Coordinator describing it as a model for other ANSPs in Europe. This has enabled us to maintain our position as one of the most modern and development-oriented companies in our sector in Europe.

However, our work on upgrading and improving the efficiency of ATM is not limited to the Danish-Swedish Functional Airspace Block (FAB). We are cooperating with the ANSPs in NEFAB to increase the opportunities for establishing Free Route Airspace, so the airlines can determine their own routes throughout the entire Nordic airspace instead of, as today, only over Denmark and Sweden. In our opinion, ATM will only achieve maximum efficiency when Free Route Airspace ATM has been developed throughout the entire North European area.

In the field of technology we are continuing to develop and harmonise our ATM systems through the cooperation in COOPANS.

Generally speaking, market conditions and air traffic trends in 2012 were not favourable. Although at the beginning of 2012 our expectations for the growth of air traffic – based



on the Eurocontrol forecasts – were optimistic, it was already clear in the spring that air traffic growth would be negative. Air traffic in Danish airspace declined in 2012 and the most recent forecasts predict almost flat growth in air traffic in 2013 and a possible resumption of growth from 2014.

The bankruptcy of Cimber Sterling had a serious impact on domestic air traffic in Denmark. A number of domestic routes were closed and the structure of future domestic air travel has probably changed significantly, because it must be expected that only the profitable routes will be re-established.

As soon as we received the negative forecasts in the spring, we reacted by implementing cost cuts, including redundancies. As a result of the new European performance scheme for ATM, ANSPs are more exposed financially than previously. As a company, we will have to enhance our earning capacity in order to be able to cope with fluctuating finances and earnings.

At Naviair, we are pleased with the new conditions and consider that, broadly speaking, the new performance requirements will increase the effort invested in improving the efficiency of European ATM. We are focused on meeting the requirements laid down for Naviair and helping to

meet the requirements laid down for NUAC. At the same time as fulfilling these requirements, we will continue to maintain high safety standards and provide capacity at a cost level that is reasonable in relation to the standard of service.

Naviair is well equipped to meet the challenges of the coming years, when the prospect of low growth in air traffic and strong demand for a reduction in the price of ATM will affect our activities and development. Thanks to our qualified employees' willingness to accept change and our forward-looking strategy, we will be able to maintain our position as one of the leading European ANSPs.

Our business plan describes Naviair's strategy, our plans for the future and the initiatives we will be prioritising over the next five years. We continually adjust our plans to suit the current situation, but our basic strategy has remained the same for a number of years and is still perfectly suited to modern conditions. The plan also includes an overview of the framework of our activities and the customers we work for.

Enjoy!

Morten Dambæk  
CEO

Anne Birgitte Lundholt  
Chairman

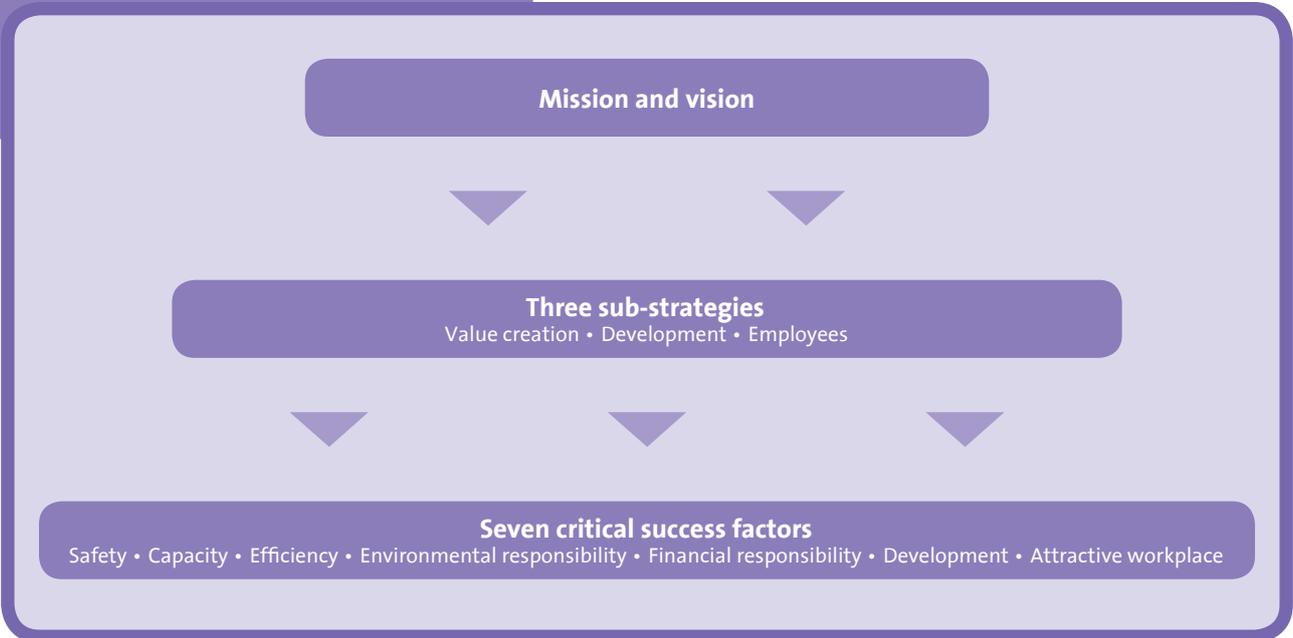


# Strategic platform

Naviair is a company owned by the Danish state represented by the Danish Ministry of Transport.

To achieve our mission and help us achieve our vision, we have formulated three sub-strategies each of which will set us on our course. To achieve our objectives, Naviair will: create value for society and our customers, continually develop our company, and have talented, committed and motivated employees.

## Strategic platform





## Mission

Naviair contributes to the creation of value and welfare for society by developing and providing safe and efficient Air Traffic Management (ATM), fulfilling our role as a vital part of the aviation value chain.

## Vision

We will always be among the best ANSPs in Europe.

We will continually develop our company and secure a strong position with customers and partners by participating in international alliances.

We will achieve our ambitions through talented, committed and motivated employees who thrive on working in a demanding environment in which targeted employee development and involvement form the basis for maintaining an attractive workplace.



# The three sub-strategies



## Creating value for society and our customers

Naviair contributes to the creation of value and welfare for society by developing and providing safe and efficient ATM, fulfilling our role as a vital part of the aviation value chain.

Naviair will always focus on supporting customer needs to secure our long-term existence. We will therefore continuously strengthen and develop customer relations through close cooperation focusing on safety, quality and price to ensure that Naviair's services optimally support our customers.

One way in which we create value is by developing and strengthening NUAC, which took over the operation of the ATCCs in Copenhagen, Malmö and Stockholm on behalf of Naviair and LFV in 2012. Through joint coordination of air

traffic, we will also secure the basis for environmental and climate improvements.

- We will maintain our high level of safety and at the same time continually develop our capacity level and improve efficiency.
- We will support airline and airport growth through increased cooperation and joint planning.
- We will focus on financial responsibility, efficiency and being cost-conscious.
- We are environmentally conscious and continually strive to achieve climate improvements in aviation.

## Developing the company

Naviair will develop continually and maintain a strong position with customers and partners by participating in international alliances.

Naviair provides air navigation services and technical maintenance. These services must be continuously developed and made attractive to both existing and new customers. We will strengthen European cooperation within air navigation services and relations with the Danish Transport Authority, Danish Defence and DMI to provide the basis for our sustained growth and development.

We will cement and develop our market position in Denmark and Europe through strategic business initiatives such as NUAC, Entry Point North, COOPANS and Borealis. Broad, solid cooperation on jointly owned entities, alliances and partnerships is essential to provide the necessary

strength in relation to other players in the market.

We will strengthen our technical and operational development through international cooperation with other ANSPs. This cooperation comprises procurement and supply chain management.

- We will develop closer cooperation with our North European industry counterparts through NUAC, Entry Point North, COOPANS, NORACON, FAB 4 and Borealis.
- Modelling our efforts on COOPANS, we will form new alliances with other partners and suppliers.
- We will provide technical and operational services to airports and enter into technical strategic partnerships.
- Based on specific needs analyses, focused tender procedures and tight supply chain management, we will invest in automated and standardised systems.



## Talented, committed and motivates employees

Naviair is a workplace that offers good professional and personal development opportunities and is able to both retain and attract talented and committed employees. It is important that all employees thrive in a demanding workplace.

Naviair will continuously develop management, organisation and employees in such a way as to develop positive relations, generate results and promote job satisfaction.

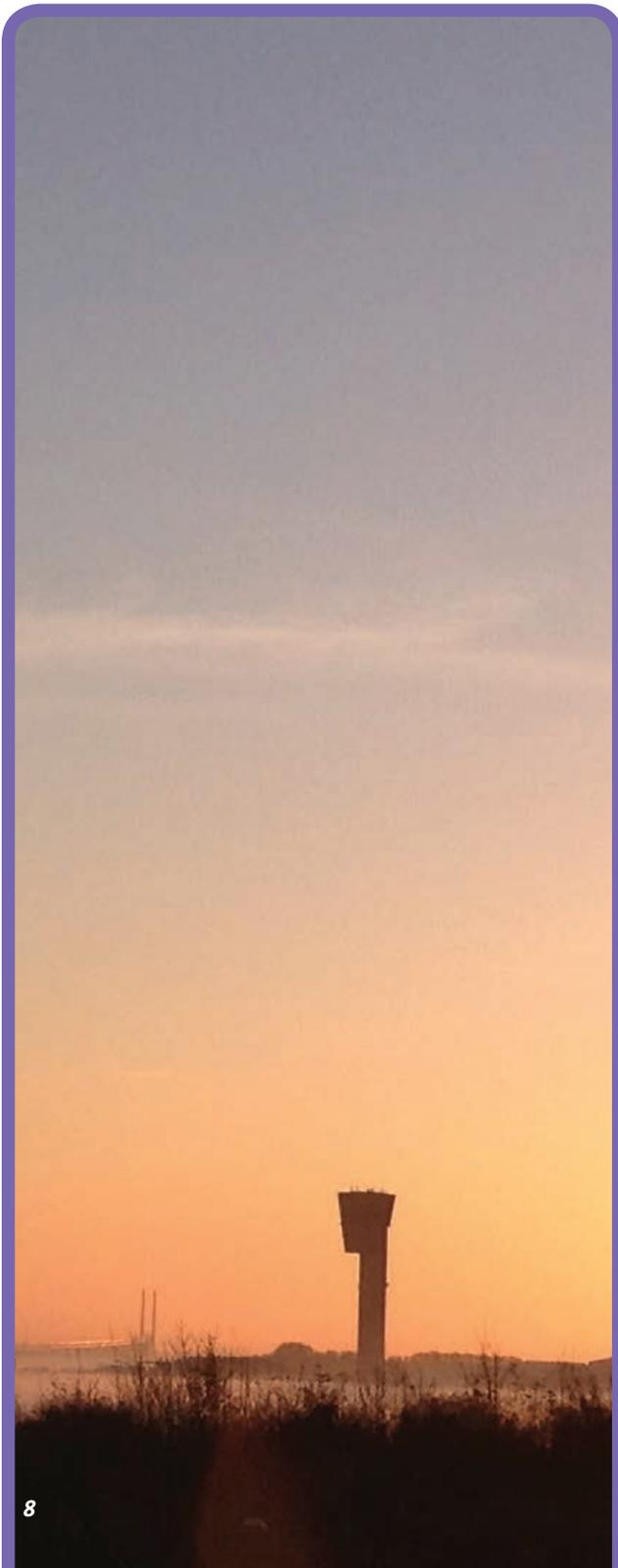
We will implement targeted development of employee culture and skills to ensure that we always focus on safety, capacity and efficiency in our provision of air navigation services.

The ambition to retain our leadership position among the safest and most efficient ANSPs in the industry requires ongoing development, determination of responsibilities, influence, involvement and skills – as well as standards and rules.

- We will ensure that our employees always have the right skills and motivation to support our core business.
- We will continually strengthen leadership skills through skills development and supplementary training, mutual sparring and involvement in the strategic development and management of the company.
- We will ensure ongoing development in efficiency, management, culture, skills and communications.
- We will ensure that our employees bear our strategies in mind, adhere to our values, and pursue our focus areas.

# Critical success factors

To ensure that we achieve our long-term objectives, we have identified a number of critical success factors. They form the basis for the specific key performance indicators that we have defined to ensure that we remain focused on achieving our strategic objectives.



## Safety

At Naviair, we always maintain a high level of flight safety.

## Capacity

At Naviair, we ensure that we have adequate capacity and handle air traffic with as few delays as possible.

## Efficiency

At Naviair, we make optimum use of our resources.

## Environmental responsibility

At Naviair, we ensure handling of air traffic that reduces air pollution and minimises noise.

## Financial responsibility

At Naviair, we are financially responsible in all respects and we are cost-conscious.

## Development

At Naviair, we constantly strive to develop all our areas of activity via alliances, harmonisation and standardisation.

## Attractive workplace

At Naviair, we are positive, motivated and well-functioning, and all our employees have the right skills.





# Areas of activity

Naviair has been designated to provide aviation infrastructure and is therefore an important player in society.

## En route – Denmark

### Area control services in Danish airspace from:

- ATCC in Copenhagen \*
- Tower in Roskilde
- Tower in Billund
- Tower in Århus
- Tower in Aalborg

### Approach control service to Copenhagen Airport from:

- ATCC in Copenhagen \*

*\*) The ATCC in Copenhagen is operated by NUAC on behalf of Naviair*

### Briefing service from:

- ATCC in Copenhagen \*

### Flight Information Services from:

- ATCC in Copenhagen \*

### Technical support and maintenance of ATM/CNS equipment in Denmark:

- Radar installations
- Navigation and communications systems
- ATM equipment

## En route – Greenland

### Briefing service from

- Flight Information Centre in Kangerlussuaq

### Flight Information Services from:

- Flight Information Centre in Kangerlussuaq

### Technical support and maintenance of CNS equipment on the Faroe Islands and in Greenland:

- Radar installations on the Faroe Islands
- Navigation and communications systems on the Faroe Islands and in Greenland
- Surveillance (ADS-B) in Greenland

## Local Air Traffic Services

### Aerodrome control service from:

- Tower in Copenhagen
- Tower in Roskilde
- Tower in Billund
- Tower in Århus
- Tower in Aalborg
- Tower on Bornholm

### Approach control service to airport from:

- Tower in Roskilde
- Tower in Billund
- Tower in Århus
- Tower in Aalborg
- Tower on Bornholm

### Aerodrome Flight Information Service from:

- Tower on Vágar

## Services

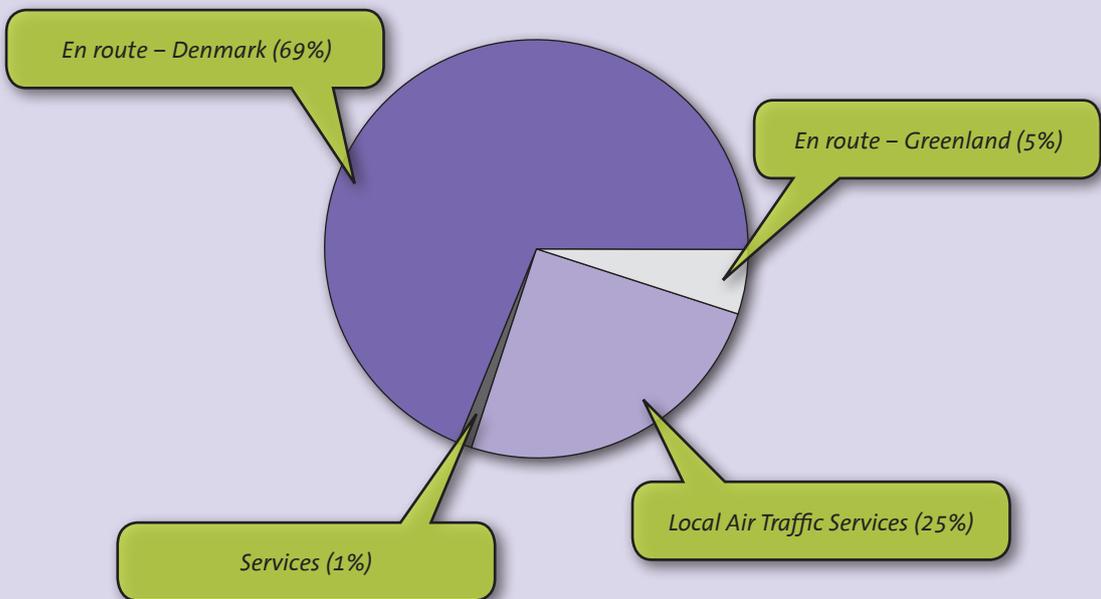
### Sale of technical support and maintenance of ATM and airport CNS equipment from:

- Technical station in Copenhagen
- Technical station in Billund
- Technical station in Aalborg

### Sale of technical-operational knowhow



Navair's revenue by area of activity



Source: Navair's Q3 forecast 2012



### En route – Denmark

En route – Denmark (technical-operational) comprises area control services in Danish airspace and approach control service to Copenhagen Airport. The activities in this area also include briefing and flight information services from the ATCC in Copenhagen. This area also comprises technical support and maintenance of radar installations and communications systems in Denmark. By far the largest portion of Naviair’s revenue comes from en route traffic charges in Danish airspace.

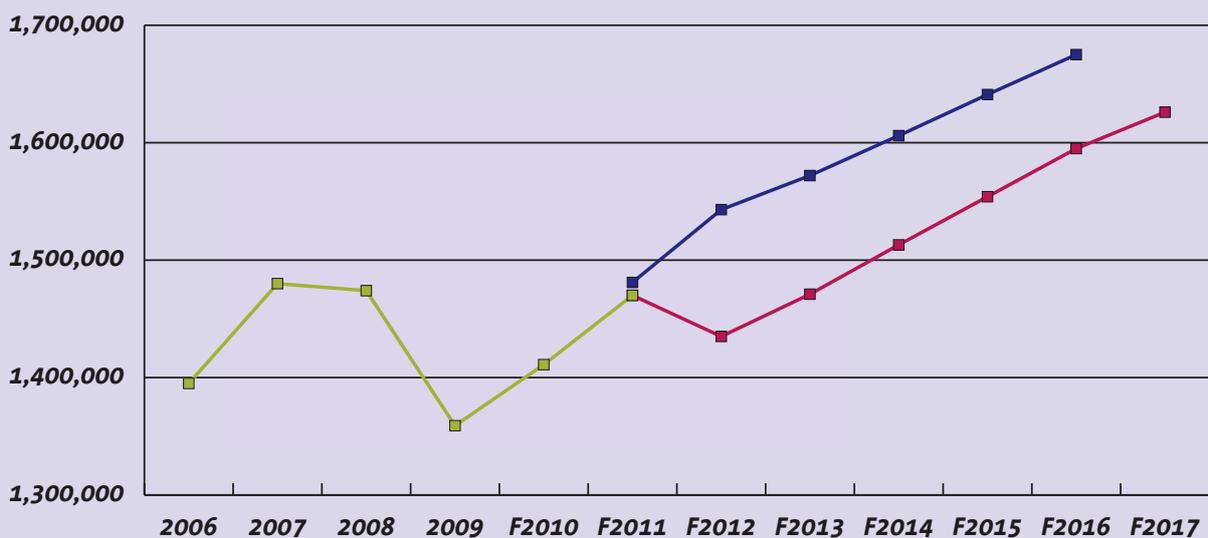
The volume of en route traffic decreased considerably from the end of 2011, with traffic in 2012 being down 3.5 per cent on 2011. The traffic outlook for the period after 2012

and beyond has therefore been adjusted downwards.

Naviair’s en route traffic outlook is based on Eurocontrol’s forecasts (STATFOR). Eurocontrol adjusted its growth outlook for the period until 2018 in December 2012. Based on this, the traffic level in 2013 is expected to be approximately 2.1 per cent ahead of 2012.

The figure shows the expected development in en route traffic expressed in service units. As will be seen from the figure, the traffic outlook has been lowered considerably from 2011 to 2012. The requirements in the first reference period of the performance scheme are based on the May 2011 forecast, which means that Naviair’s basis for meeting the requirements is impaired.

### Development in service units – En route



- Actual number of service units
- Basis for performance targets during the first reference period (Eurocontrol, Short- and Medium-Term Forecast of Service Units: May 2011 Update)
- Latest service unit forecast (Eurocontrol, Medium-Term Forecast of Service Units 2012-2017 – September 2012 Update)



### En route – Greenland

En route – Greenland (technical-operational) comprises briefing and flight information from the Flight Information Centre in Kangerlussuaq. These activities also comprise technical support and maintenance of radar installations on the Faroe Islands and navigation and communications systems on the Faroe Islands and in Greenland as well as surveillance in Greenland.

In the case of the airspace above FL 195, Air Traffic Control (ATC) of the northern sector has been outsourced to ISAVIA and is provided from Reykjavik in Iceland, while ATC of the southern sector has been outsourced to Nav Canada and is provided from Gander in Canada. Naviair provides the technical equipment in Greenland that is used by both Nav Canada and ISAVIA. Furthermore, we operate Search & Rescue services over Greenland from the Air Rescue Coordination Centre in Kangerlussuaq. Lastly, we provide CNS services from Kangerlussuaq, where we operate the national COM centre. From this centre, we monitor international and national ATS networks.

### Local Air Traffic Services

Local air traffic services comprise aerodrome control and approach control in a number of airports and aerodrome flight information on the Faroe Islands.

Our largest customer in this area is Copenhagen Airports A/S, from whom we expect a 1.5 per cent increase in air traffic in 2013. We also expect air traffic in Billund to increase by 1.5 per cent.

However, based on the development in air traffic in 2011 and 2012, we do not expect any changes in the rate of growth for the other airports.

Cimber Sterling's bankruptcy in 2012 led to the closure of a number of domestic routes and it must be expected that only the profitable routes will be re-established. However, the Danish domestic airports are of major importance to the development of aviation in Denmark. At Naviair, we therefore focus on any initiative that can underpin aviation in Denmark by ensuring a high level of capacity and efficiency at the towers in Denmark.

### Other areas of activity

Other areas of activity primarily comprise technical support and maintenance of ATM and airport CNS equipment in Denmark. Naviair's support and maintenance of mainly CNS equipment for third parties, such as airports, are a key parameter in Naviair's efforts to cut its unit costs.

This area is an excellent supplement to Naviair's core activities and facilitates optimum utilisation of resources.

In 2012, we launched a new area of activity: sale of technical-operational knowhow. Through supplementary training, employees with an ATCO background acquire knowhow about one or more of Naviair's operational systems and at the same time expand their experience with project and system tasks, strategic tasks or safety tasks. The aim is to second these employees on fixed-term contracts to customers such as Danish Defence, other COOPANS partners, LfV Aviation Consulting, consultancy firms, industry counterparts and Entry Point North.

Naviair also provides instructor resources to Entry Point North.

Steady growth is expected for the whole of this area.

# Customer base

We strive to provide the best service to our customers at all times. We maintain high safety standards and provide capacity at a cost level that is reasonable in relation to our standard of service.

## Airlines

Via our ATCC in Copenhagen and from our towers we service a number of international airlines with more than 600,000 flights annually.

At the beginning of 2012, it was forecast that air traffic would increase again – after a number of years with stagnating traffic levels. But the growth in air traffic did not materialise. Air traffic growth was negative during the year to the effect that air traffic in Danish airspace in 2012 was down 3.5 per cent on 2011.

The development in air traffic reflects both the fact that aviation has not yet emerged from the crisis, which began at the end of 2008, and the fact that airlines have become better at aligning traffic and the number of routes and departures to current market needs. Airlines are adjusting traffic up and down more quickly than previously, and this affects Naviair's capacity utilisation as well as its earnings.

## Airports

Copenhagen Airport plays an important role due to its international status as a North European hub. To ensure that the Øresund region remains a dynamic growth region, Copenhagen Airport needs to retain this position. To that end, it is important that customers choose Copenhagen Airport in preference to airports in other countries. As a subcontractor, we therefore strive to ensure that traffic is managed safely and efficiently to make Copenhagen Airport an attractive airport compared with the competition. In recent years, we have been ensuring that there have been no appreciable delays attributable to ATM. At the same time, Naviair's performance in the environmental and climate areas is instrumental in making Copenhagen Airport a fuel-efficient – and therefore CO<sub>2</sub>-saving – option for airlines.

Even though the closure of Cimber Sterling has been a serious blow to many local airports, these still play a key role both to the continued development of aviation in Denmark and to the sustained efficiency of domestic aviation. It is important that the Danish airports continue to be able to attract air traffic in competition with other modes of transport. The airports must therefore continuously do their utmost to keep their costs down. As a subcontractor to these airports, we focus on keeping the price of our services at the lowest possible level.

## Danish Defence

Since the 1990s, Danish Defence has evolved from having as its primary role to defend Denmark and uphold its sovereignty to undertaking humanitarian and international tasks. At the same time, Danish Defence has fewer aircraft today. This has led to a change in the way in which Danish Defence uses Danish airspace, particularly for training purposes. The structure of training areas in which civil air traffic is separated from Danish Defence activities has therefore changed.

Naviair is in close contact with Danish Defence and continuously coordinates activities taking place in Danish airspace so that the requirements of Danish Defence are met with the least inconvenience to civil air traffic.

## DMI

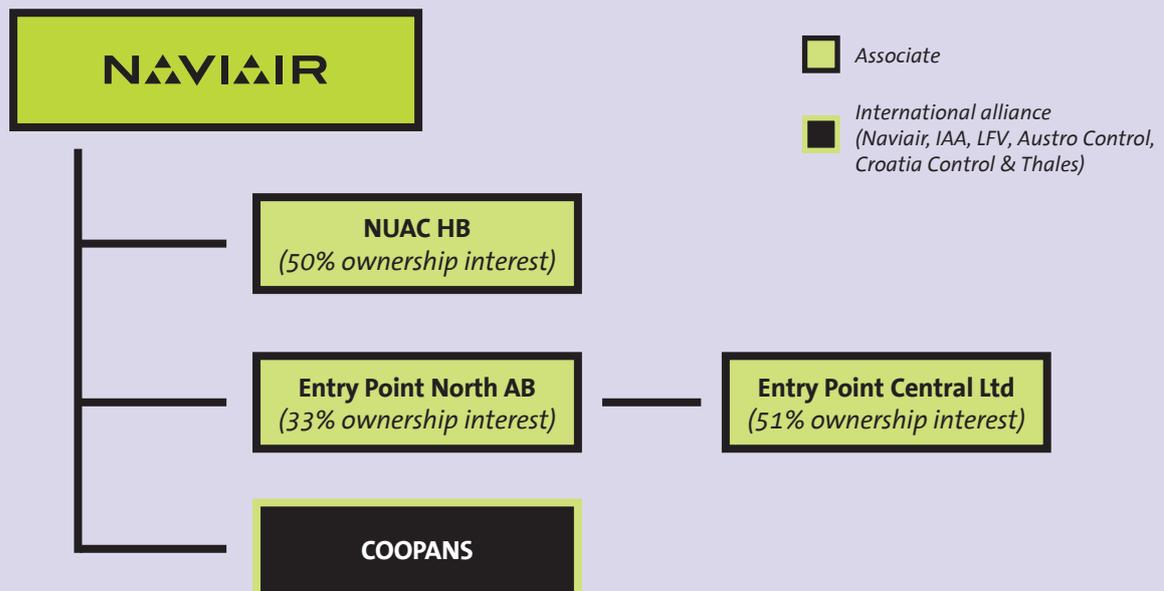
Naviair provides technical services to DMI on a contract basis. The main areas are technical support and maintenance of airport-related meteorological equipment and weather radars.

# The Naviair family

To achieve our vision and the objective of always being among the best in our industry, Naviair's business model is based on strong involvement in three international alliances:

- We are improving the efficiency of ATM in the Danish-Swedish FAB on an ongoing basis. The jointly owned Swedish general partnership NUAC HB operates the three ATCCs in Copenhagen, Malmö and Stockholm on behalf of the owners – Naviair and LFV.
- We are developing ATCO training at the joint Nordic ATS training academy, Entry Point North.
- We are developing our ATM systems in COOPANS.

## The Naviair family





# Strategic business initiatives

Naviair has put in motion a variety of business initiatives to ensure our vision of always being among the best ANSPs in Europe. These international business initiatives are implemented under the framework of SES and SESAR.

## NUAC

In 2009, we established the company NUAC together with LFV. NUAC has been responsible – on behalf of Naviair and LFV – for operating the three ATCCs in Copenhagen, Malmö and Stockholm since 1 July 2012. NUAC has a total of approximately 750 employees on secondment from Naviair and LFV. The ATCCs and all other equipment are on secondment to NUAC, but remain Naviair's and LFV's property.

The co-ownership of NUAC makes Naviair well equipped to meet future requirements and expectations in our industry. At the same time, this cooperation strengthens our ability to continue to implement efficiency improvements and cost reductions without compromising on our high safety and service levels.

Through NUAC, Naviair and LFV are making good progress on the implementation of a range of efficiency improvement initiatives designed to deliver total savings of at least EUR 13 million annually for Naviair and LFV by the end of 2016. At the same time, NUAC is working purposefully to implement improvements to ATM to enable air traffic to be handled as efficiently as possible. One aim is to ensure the shortest possible routes and flight times. Viewed in isolation, NUAC's activities will thus contribute to a reduction in the airlines' costs for both ATM and fuel in the longer term. The initiatives will also have a positive effect on the environment and the climate by cutting the companies' CO<sub>2</sub> and NO<sub>x</sub> emissions.

We have also initiated cooperation with the partners in the NEFAB project with a view to implementing Free Route Airspace – i.e. free choice of route – across the airspace covered by NEFAB and the Danish-Swedish FAB. Naviair and LFV introduced Free Route Airspace in the Danish-Swedish FAB as early as 2011. This initiative has led to considerable fuel reductions for the airlines that fly through Danish and Swedish airspace.

## Entry Point North

The ATS training academy Entry Point North is jointly owned by Avinor, Naviair and LFV. The academy was established in 2006 as the first transnationally owned academy offering ATM training. Entry Point North offers Recruitment services, Initial training, Conversion training, Refresher training and Development training. In line with the ambition in SES, the primary aim of Entry Point North is to provide standardised and harmonised training for ATCO trainees and ATCOs.

Since 2011, the course portfolio of Entry Point North has also included training of technical personnel carrying out maintenance of ATM equipment. The training course Air Traffic Safety Electronics Personnel provides students with the skills and practical capabilities they need to be able to operate and maintain ATM equipment approved for operational use. The training course has had students from Maastricht Upper Area Control Centre, LVNL, General Civil Aviation Authority in the United Arab Emirates and Indonesia, among other places.

Besides providing ATS training to its three owners, Entry Point North services ANSPs from around the world on commercial terms by selling training courses tailored to customer requirements that are held either at Entry Point North in Sturup or on-site at the customer. Entry Point North now has more than 40 customers in more than 20 different countries.

Entry Point North has concluded a long-term cooperation agreement with the Civil Aviation Management Institute of China. The first result of the agreement was a number of courses for more than 100 participants. Entry Point North has also signed a contract with FerroNATS on training of tower controllers for ten Spanish airports. Lastly, in 2012, Entry Point North entered into a long-term cooperation agreement with GroupEAD Europe S.L, which provides AIS



and AIM-related training and services, among other things. With this agreement, both companies are now able to offer ANSPs across the world integrated training solutions.

In 2011, Entry Point North's growth strategy led to cooperation with HungaroControl and the establishment of the ATS training academy Entry Point Central in Budapest. Entry Point Central is a subsidiary of Entry Point North and HungaroControl.

Entry Point North has ambitions to expand further internationally, partly through the option to set up solutions like Entry Point Central for other ANSPs in the region. Besides the commercial dimension, the initiative fulfils the intention within SES of achieving greater ATM cooperation and harmonisation in the European countries.

## COOPANS

In 2006, we established COOPANS together with LFV and IAA, with Thales as supplier. Austro Control (2010) and Croatia Control (2011) have subsequently joined the cooperation.

The purpose of COOPANS is to upgrade and harmonise the partners' ATM systems into a single unified ATM system that uses common software and entails harmonised maintenance processes and operational concepts. COOPANS is open to new – paying – partners joining.

COOPANS enables the partners to cut their development costs through continuous upgrading of the ATM system. The alternative would be major, very costly 'big bang' ATM system migrations. In addition, COOPANS is to harmonise operational and technical procedures in order to limit specific national and individual functionalities.

The partners expect to cut system development costs by approximately 30 per cent compared with the costs each partner would incur if it had to develop the technology independently. To this should be added savings in operating expenses due to the joint work concepts.

Besides savings, COOPANS meets the EU's aim concerning harmonisation of ATM systems in Europe. Being a partner in COOPANS thus helps us to meet a whole range of existing and future EU regulatory requirements in good time, including the performance requirements (see the section on European framework), and to develop in line with SESAR. COOPANS also underpins industry and ICAO requirements.

The first system upgrade has been rolled out in Dublin, Shannon, Malmö and Copenhagen and for approach operations at the airports in Copenhagen, Roskilde and Billund. Following the upgrade of the ATCC in Stockholm at the end of 2012/beginning of 2013, IAA, Naviair and LFV will be using identical software and harmonised technical solutions.

The subsequent system upgrades will include development and integration of changes that are required in order for the latest members to join COOPANS, Austro Control and Croatia Control, to be commissioned in 2013 and 2014 respectively. At the same time, the upgrades will satisfy a number of necessary EU regulatory requirements. The system upgrades will also be implemented at IAA, LFV and Naviair, so that the ATM system is continually updated and harmonised at all five ANSPs in COOPANS.

Further upgrades are to ensure that all ATCCs are harmonised both technically and operationally in future and also meet regulatory requirements and SESAR's objectives.



## NORACON

NORTH European and Austrian CONSortium (NORACON) is a consortium that cooperates on participation in the SESAR programme (see section on European framework). NORACON was set up in 2009 and consists of nine European members: Austro Control, Avinor, Finavia, ISAVIA, LFV, Swedavia, IAA, EANS and Naviair.

The NORACON consortium is a formal member of SJU (see section on European framework). Through NORACON, Naviair is therefore able to influence decisions on the pan-European development in the technical-operational area. At the same time, through NORACON, the partners have protected their long-term strategic investments in a SESAR perspective. This is achieved under the informal A6 umbrella group, which consists of members from Spain, Italy, France, Germany and the UK as well as the NORACON consortium.

The A6 group is tasked with reconciling ANSP views in relation to important SESAR areas in connection with the development in the industry, SJU strategies and priorities and the relationship with the operational environment.

It has been decided that the NORACON consortium is to be active in the A6 group in the ATM research and development area and implementation. Furthermore, special emphasis is placed on the necessary coordination with relevant partners to underpin this strategy, including especially NATS and DSNA.

Via the work in NORACON and A6, Naviair will follow up on and influence the preparation for the SESAR implementation phase, which is expected to run from 2014-2020.

## FAB 4

In 2011, IAA, LFV, NATS and Naviair established the so-called FAB 4 project. The project is exploring the possibilities of closer cooperation on ATM in the airspace over Denmark, Sweden, the UK and Ireland. The aim is to enhance ATM efficiency in this area.

## Borealis

Naviair cooperates with several of its North European counterparts on coordinating ATM in the Borealis alliance. The other members of Borealis are Avinor, Finavia, ISAVIA, LFV, IAA, EANS, NATS and LSG.

Borealis was set up in 2012 as a formal, binding alliance to replace the previous, informal cooperation. The alliance has defined seven areas in which members will prioritise cooperation on development, improvements and harmonisation of the airspace structure and ATM in the years ahead. The areas to be given priority include the establishment of data link infrastructure by 2015 as an element of en route traffic ATM.

## Outsourcing

We have opted to outsource some non-core activities. Outsourcing is decided on a case-by-case basis. Cleaning, canteen operation, security and reception service as well as maintenance of building services are currently outsourced.

# Environmental and climate initiatives

Like any other mode of transport, aviation has both an environmental and a climate impact. Aviation accounts for between 2 and 3 per cent of global air pollution. Naviair is committed to ensuring that the environmental and

climate impacts in our part of the aviation value chain are reduced. We therefore continuously strive to reduce the impact of our activities by developing our procedures and technology.

## Noise

Naviair plays an active part in helping to reduce noise at and around the airports at which we provide ATM. Noise inconvenience is reduced through traffic procedures as well as arrival and departure restrictions at these airports.

## Emissions of CO<sub>2</sub> and NO<sub>x</sub>

Aviation accounts for approximately 2 per cent of global CO<sub>2</sub> emissions (IPCC 2007). Naviair helps to cut CO<sub>2</sub> and other polluting gases by continuously developing efficiency-improving procedures and infrastructure systems. This ensures partly that aircraft take the most direct route between destinations and fly at the most fuel-efficient altitude for each type of aircraft, and partly that aircraft take-off, land and operate on the ground at the airports with the lowest possible fuel consumption.

Flight safety is naturally always given top priority in ATM. While maintaining the highest level of safety, we continuously strive to optimise our ATM and implement initiatives that are sustainable as regards the climate.

ATM is optimised by prioritising a service-minded culture, developing efficient traffic concepts and making flexible use of airspace. Against this background, we use the most efficiency-improving and climate-friendly traffic concepts recommended by the European aviation organisations.

Naviair analyses and works with the development of climate-friendly traffic concepts both in Free Route Airspace, Continuous Climb Operations, Continuous Descent Operations and Required Navigation Performance.

In November 2011, jointly with LfV, we introduced Free Route Airspace in Danish-Swedish airspace. This means

that airlines can now choose the shortest direct route through our airspace already at the planning stage. This will enable airlines to reduce the volume of aircraft fuel used and to reduce the aircraft's take-off weight. Based on simulations performed by Eurocontrol for Naviair and LfV, it has been calculated that Free Route Airspace will cut CO<sub>2</sub> emissions in the airspace by approximately 40,000 tonnes per year, overall. Using Continuous Climb Operations for departures from Copenhagen Airport saves the environment from emissions of approximately 32,000 tonnes of CO<sub>2</sub> annually and the airlines fuel consumption of approximately 10,000 tonnes annually. Naviair's climate-friendly Continuous Climb Operations action was documented by Eurocontrol in 2009. Our concept means that more than 95 per cent of departing flights are given permission to deviate from the Standard Instrument Departure procedure. Instead, the aircraft use the Continuous Climb Operations concepts, where they are given permission to climb directly to their preferred cruising level and to head directly for their destination as soon as possible during the departure procedure.

Through NUAC we are now cooperating with the countries in NEFAB to expand Free Route Airspace across the whole of the Nordic area.

The Continuous Descent Operations concept enables pilots to plan the most fuel-efficient and climate-friendly approach to airports from the aircraft's cruising level to landing. This enables the pilot to optimise the use of engine power during the last part of the flight. At airports with a high traffic density, it may be difficult to implement Continuous Descent Operations and at the same time maintain high capacity with optimum density between departing and arriving aircraft. But during periods of low traffic intensity, it is possible to use the concept – without Continuous Descent Operations hampering the possibility of maintaining the high proportion of Continuous



Climb Operations. In 2009, more lenient level restrictions for approaches to Copenhagen Airport were introduced, enabling airlines to implement approximated Continuous Descent Operations.

In the Danish-Swedish airspace at Copenhagen Airport, NUAC and the Danish and Swedish authorities are working together on establishing a more efficient, more expedient airspace structure in the form of an integrated terminal area in the Øresund region. One benefit of such a structure will be that arrivals and departures at the airport will become even more efficient, saving fuel and reducing the environmental and climate impacts.

We work closely together with our customers and partners on the continued development of new initiatives that can optimise our environmental and climate performance. For example, we are following with interest the testing of Required Navigation Performance procedures at Landvetter Airport near Gothenburg. Required Navigation Performance provides the basis for automated, short precision approaches, which are expected to yield considerable fuel savings. If the test is successful, we will consider developing Required Navigation Performance procedures for a coming integrated terminal area in the Øresund region, comprising Copenhagen Airport.

### Environmental and climate initiatives in our buildings and technical installations

Naviair's technical installations require a great deal of energy for both operation and cooling. To reduce our energy consumption and thus our CO<sub>2</sub> footprint we are establishing groundwater cooling in the period up to 2018 to replace our current cooling system, which is due to be upgraded on account of both its age and official requirements.

We have carried out a preliminary investigation that has shown that we will be able to cut our energy costs by DKK 1-1.5 million annually and at the same time reduce the CO<sub>2</sub> produced by our heat and electricity consumption by approximately 275 tonnes per year. The savings will be made by using less electricity for cooling and through heat recovery. The result of a test drilling in 2012 has confirmed the findings of our preliminary investigation.

We have also made targeted efforts to reduce our energy consumption for lighting by replacing our light fittings with LED fittings on an ongoing basis. As well as energy savings this leads to lower light fitting consumption and lower man-hour consumption for replacing light fittings as the new fittings have a longer life.

### Climate strategy

We strive to align our climate efforts to customer wishes and requirements while also participating in the environmental and climate work in SES, SESAR, NUAC, COOPANS and NORACON.

Based on Eurocontrol's and IATA's joint Flight Efficiency Plan, we will continue to develop and ensure flexible utilisation of airspace by means of:

- Short routes, direct routes to destinations and fuel-efficient altitudes.
- The option of fuel-efficient approaches to Danish airports.
- Minimal ground delays with engines idling through efficient ATM at airports.
- Continuous Climb Operations wherever possible – with direct routes and climbs to cruising level.

# European framework

The EU Member States and a number of other European countries have jointly committed to harmonising and integrating ATM in Europe into a single airspace (Single European Sky). This will mean that ATM across Europe will be subject to the same framework and development targets.



## Single European Sky – SES

The EU aims to integrate ATM in Europe into a single airspace (Single European Sky). The aim is to improve efficiency, create a more cost-efficient ATM system and ensure environment-friendly handling of air traffic in Europe.

The EU targets are set out in the Single European Sky (SES) legislative package from 2004 and various amendments to it in the SES II legislative package from 2009. SES is thus based on EU legislation and will be a key driver of the air traffic sector's future organisation, structure and economy.

The EU legislation includes the following requirements:

- The many geographical areas based on state boundaries must be combined to form a few large FABs. These joint airspace blocks should have been established by December 2012, taking into account a number of requirements concerning improvement of, among other things, efficiency and flexibility.
- Implementation of performance-based rules with requirements that are governed by actual performance targets to be set and tested in 2012-2014, the so-called first reference period, followed by similar, but five-year, reference periods (see section on Performance scheme). The preparations for the second reference period began in 2012.

- Transfer of powers and responsibilities relating to safety in the ATM area to the European Aviation Safety Agency (EASA).
- Significant changes to and trimming of Eurocontrol's management, structure and tasks, with a clear distribution of responsibilities between the European Commission, EASA and Eurocontrol. The European Commission has the overall authority role; EASA is responsible for aviation safety, while Eurocontrol's main task is to support the European Commission and Member States with expert assistance on regulatory matters, etc. For example, from 2012, Eurocontrol will take care of the overall pan-European coordination via its role as Network Manager controlled via a Network Manager Board with a variety of industry players as stakeholders.
- Implementation of environmental rules and regulations to curb pollution.

The regulations mean that the European Commission, Eurocontrol and EASA will be the main drivers of the development and progress of the processes that are to create a single European airspace (Single European Sky).

Naviair participates in a national working group that assists the Danish Transport Authority in determining Denmark's position on the implementing rules and comments on legislative proposals both here and through its international trade association, CANSO.

## Performance scheme

2012 was the first year in which Naviair had to comply with the new European performance schemes. This means that we will no longer be ensured that we will fully recover our costs but are subject to a scheme with targets for the development in our costs, and with risk-sharing in terms of the development in air traffic. We must also meet targets concerning safety and regularity.

We will be responsible for ensuring that we always have both the necessary resources and up-to-date technical equipment to maintain the highest level of safety, meet





customer requirements and needs and maintain efficient ATM. We therefore focus on being both highly flexible and cost conscious in order to ensure that our financial position is always sound. At the same time, we will always endeavour to provide airlines with the best possible service and develop the most efficient airspace structure to the benefit of our customers.

The performance scheme is the result of the Single European Sky legislation through which the EU aims to ensure both more efficient utilisation of European airspace and sufficient airspace capacity to accommodate the growing level of air traffic. Another objective is to cut CO<sub>2</sub> emissions and the costs of air navigation services.

The performance improvements will be achieved through EU-wide, FAB-wide and nationwide performance targets. ANSPs will be measured on their performance. ANSPs that do not satisfy the performance requirements may be subject to corrective action. The targets are legally binding on EU Member States.

The EU-wide performance targets will be adopted by the European Commission and used to prepare a performance plan for each national airspace (nationwide performance targets) or for the Functional Airspace Block (FAB) of which the national airspace is a part (FAB-wide performance targets). The first reference period of the performance scheme will run for three calendar years from 2012 to 2014 and comprises the en route area only. Subsequent reference periods, which also comprise charges related to terminals and airports (Terminal Navigation Charges), will run for five calendar years from 2015.

Performance targets will be set in the following four areas: Safety, Capacity, Environment and Cost efficiency. The targets for the Danish-Swedish FAB and Naviair-Denmark for the first reference period are shown in Appendices.

The environmental targets will not be set until from the second reference period. The negotiations on the targets to be set for the second reference period are already under way, and the targets will be finalised in 2014.

### Single European Sky ATM Research – SESAR

SESAR is the EU's programme for development of the new generation of a European ATM system. The programme combines technology with operational, financial and legislative aspects. In 2009, the EU Council of Ministers adopted a European ATM Master Plan, most recently updated in autumn 2012, which covers the period up to 2020.

A joint undertaking, structured as a Public-Private Partnership, the SESAR Joint Undertaking (SJU), has been set up to manage and develop SESAR. The members are: the European Commission, Eurocontrol and the aviation sector (including a number of ANSPs). Each member has one third of the seats and bears one third of the costs. Naviair participates in SJU's work through NORACON (see the section on Naviair's strategic business initiatives).

SESAR's development phase has been extended from 2014 to 2016. This means that this phase will overlap with the SESAR deployment phase, which extends from 2014 to 2020 and is being prepared.

A decision has been made on how and under what auspices this phase will be implemented. An updated European ATM Master Plan has been prepared according to which the new generation of the European ATM system must be implemented in the period from 2014 to 2020. SJU's managing role has been extended from 2016 to 2020, which means that SJU will also manage the implementation of SESAR and thus the entire process, from the development phase, which began in 2008, through the deployment phase, which ends in 2020.

# Appendices

## Five-year summary

<b>Safety</b>	<b>2008<sup>1)</sup></b>	<b>2009<sup>1)</sup></b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Number of incidents per 100,000 operations in categories A, B and C directly attributable to Naviair	1,77	1,20	1,05	1,79	2,35
Availability – ODSs in control centre	99.8%	99.9%	99.9%	100.0%	100.0%
Availability – radar coverage	100.0%	100.0%	100.0%	100.0%	100.0%
Availability – radio/emergency radio systems	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Capacity</b>	<b>2008<sup>1)</sup></b>	<b>2009<sup>1)</sup></b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Average delay in minutes per operation in ACC	2.2	0.0	0.0	0.0	0.0
Average delay in minutes per operation in Tower/Approach	0.9	0.0	0.0	0.0	0.0
<b>Efficiency</b>	<b>2008<sup>1)</sup></b>	<b>2009<sup>1)</sup></b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Disposition efficiency – En route	6,392	7,268	7,688	8,216	7,293
Disposition efficiency – Tower/Approach	4,360	4,708	4,819	5,076	4,787
Administrative and technical productivity	1.8	2.0	2.2	2.5 <sup>2)</sup>	2.5 <sup>2)</sup>
<b>Financial performance</b>	<b>2008<sup>1)</sup></b>	<b>2009<sup>1)</sup></b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Operating income from ordinary activities (DKK million)	868.8	828.0	970.0	984.5	1,139.5 <sup>3)</sup>
Staff costs (DKK million)	536.4	539.2	535.8	556.4	563.0 <sup>3)</sup>
Other operating expenses (DKK million)	249.8	244.2	252.2	241.1	370.2 <sup>3)</sup>
<b>Environment</b>	<b>2008<sup>1)</sup></b>	<b>2009<sup>1)</sup></b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Noise inconvenience	0	0	2	0	1

<sup>1)</sup> Comparative pre-2010 figures are based on Naviair's operations as a state enterprise.

<sup>2)</sup> From 2011, administrative and technical productivity is in accordance with the ACE definition.

<sup>3)</sup> The financial figures for 2012 are estimated figures.



### Performance scheme – First reference period

Danish-Swedish FAB	2012	2013	2014
<i>Safety</i>			
Separation minima infringements per 100,000 flight hours in categories A and B directly attributable to LFV/Naviair/NUAC	1.49	1.45	1.42
<i>Capacity</i>			
Minutes of en route ATFM delay per flight	0.20	0.15	0.08
Naviair/Denmark	2012	2013	2014
<i>Cost efficiency</i>			
Naviair – Determined cost (DKK million) <sup>1)</sup>	640.40	666.44	673.53
Naviair – Determined unit rate (EUR) <sup>2)</sup>	51.70	52.85	50.42
Denmark – Determined unit rate (EUR) <sup>3)</sup>	63.14	64.20	61.51
User rate (EUR)	71.52	73.52	75.49

*The above table shows the requirements set in the performance plan for the Danish-Swedish FAB for the first reference period.*

<sup>1)</sup> "Naviair – Determined cost" is Naviair's share of the cost base.

<sup>2)</sup> "Naviair – Determined unit rate" is Naviair's share of the user rate, excl. over-recovery/under-recovery.

<sup>3)</sup> "Naviair – Determined unit rate" is Denmark's share of the user rate, excl. over-recovery/under-recovery (Naviair, DMI, the Danish Transport Authority and costs for Eurocontrol).

# Abbreviations and designations

**A6:** ANSPs that are members of SJU

**AIM:** Aeronautical Information Management

**AIS:** Aeronautical Information System

**ANSP:** Air Navigation Service Provider

**ATC:** Air Traffic Control

**ATCC:** Air Traffic Control Centre

**ATM:** Air Traffic Management

**ATS:** Air Traffic Services

**Austro Control:** ANSP Austria

**Avinor:** ANSP Norway

**CANSO:** The Civil Air Navigation Services Organisation

**CNS:** Communications, Navigation and Surveillance

**COOPANS:** CO-Operation of Air Navigation Service providers

**Croatia Control:** ANSP Croatia

**DMI:** Danish Meteorological Institute

**DSNA:** ANSP France

**EANS:** ANSP Estonia

**EASA:** European Aviation Safety Agency

**Eurocontrol:** European Organisation for the Safety of Air Navigation

**FAB:** Functional Airspace Block

**FerroNATS:** Partnership between Spanish Ferrovial and NATS

**Finavia:** ANSP Finland

**HungaroControl:** ANSP Hungary

**IATA:** The International Air Transport Association

**ICAO:** International Civil Aviation Organization

**IPCC:** Intergovernmental Panel on Climate Change

**ISAVIA:** ANSP Iceland

**IAA:** Irish Aviation Authority



**LFV:** ANSP Sweden

**LSG:** ANSP Latvia

**LVNL:** ANSP Netherlands

**NATS:** ANSP UK

**NEFAB:** North European Functional Airspace Block (consists of Norway, Finland, Estonia and Latvia)

**NORACON:** NORTH European and Austrian CONSortium (North European technical cooperation)

**NUAC:** Nordic Unified Air traffic Control. NUAC is a jointly owned Swedish general partnership under LFV and Naviair, which is responsible for operating the three ATCCs in Copenhagen, Malmö and Stockholm from 2012.

**SES:** Single European Sky (EU initiative to unify European airspace)

**SESAR:** Single European Sky ATM Research programme (EU programme on development of the new generation of an integrated European ATM system)

**SJU:** SESAR Joint Undertaking (European Commission initiative designed to develop the new generation of a European ATM system)

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*Business Plan 2013-2017  
was published by Naviair in  
February 2013*

*Editors:  
PR & Communications  
Corporate Business & Legal Affairs*

*The business plan can be downloaded  
at [www.naviair.dk](http://www.naviair.dk)*

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