



NEFAB BUSINESS PLAN 2014 - 2018

Document revision history

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1. INTRODUCTION

Dear reader!

The Air Navigation Services Providers of the North European Functional Airspace Block (NEFAB) are pleased to present our 5 year business plan 2014 - 2018. NEFAB started operations on the 4th of December 2012 in accordance with the requirements of the Single European Sky legislation. The NEFAB 5 year Business Plan paves the way for important and substantial improvements in Air Traffic Management systems and procedures across the NEFAB States.

The market for air transport is undergoing a continuous change. The low-cost carriers have taken a larger portion of the total market, forcing the traditional network carriers to cut costs and reduce air fares. In addition there is a strong political drive to improve the performance of the European Air Navigation System. Air Navigation Service Providers must adapt to this changed environment. Hence we aim to seek all possibilities to reduce internal costs and continue to work for improved flight efficiency. This is considered important both from an environmental and a financial perspective.

Through the cooperation between the Air Navigation Service Providers in NEFAB, we aim to deliver both internal benefits in the ANSP organisations as well as external benefits directly to our customers. We seek to deliver substantial benefits through initiatives like free-route airspace, cross border service provision and collaborative network management solutions towards the end of 2015. In addition we will focus on different areas of our business in order to achieve internal benefits for the ANSPs which in turn will contribute to a reduction in user charges.

The NEFAB ANSPs are all operating under the Single Sky Performance Regulation. The first reference period of the Performance Scheme lasts up to and including 2014. For the second reference period (2015 – 2019), a FAB-wide performance plan shall be developed. The NEFAB ANSPs will work actively to develop an ambitious NEFAB Performance Plan for this reference period, ensuring continued benefits to the airspace users.

Every day our highly motivated and trained employees are working to ensure the safety and efficiency of thousands of flights operating in NEFAB airspace. In addition a team of dedicated and skilled professional experts is working to design and implement the solutions for the future to ensure that we can deliver the projected benefits for airspace users.

The NEFAB ANSPs believe in an open and constructive dialogue with our customers. We think it is important to ensure that the airspace users have a true influence on the way we plan and operate our business. Through our planning processes and our daily operations we strive to consult our customers to make sure that customer views and customer needs are properly addressed.

Anders Kirsebom
Chief Executive
Avinor - ANS

Tanel Rautits
CEO
EANS

Raine Luojus
Chief Executive
Finavia - ANS

Taurins Davids
CEO
LGS

2. EXECUTIVE SUMMARY

Through the establishment of NEFAB and by playing a leading role in the development of our services to the airspace users, the NEFAB ANSPs envisage to be the best performing airspace in Europe. We shall seek to implement optimal solutions for the benefit of our customers and stakeholders.

The NEFAB ANSPs are covering a large geographical area and serving air traffic to and from a wide range of airports from small remote regional airports to national hubs with considerable traffic volumes. In addition there are also considerable amounts of overflying traffic in NEFAB airspace, including ultra-long range operations. The society rely on stable and reliable air navigation services in the NEFAB states where air transport in some areas is considered as the primary means of public transport.

NEFAB will operate in an environment with a number of different stakeholders. Changes in European Air Traffic Management are to a great extent politically driven. The airspace users support the political drive for change and improvement among ANSPs to enable more cost-efficient solutions with sufficient capacity to meet the future demand. This requires interactions at both state level and NSA-level and good coordination and cooperation with the different stakeholders.

There are risks associated with the volatility of the air transport industry where the ANSPs face challenges when demand increase or decrease within relatively short periods of time. The ANSPs will also need to make large investments in the years to come to deploy the operational concepts and the supporting technology. All together this brings a degree of financial risk to our businesses.

The pressure for improved flight efficiency and improved environmental performance is expected to increase in the years to come. This will result in a more systematic approach to environmental consequences of airspace management and airspace design solutions. The short term target is to deliver a Free Route Airspace concept within NEFAB in 2015, and cooperate with the Danish-Swedish FAB to ensure a continuous Free Route Airspace above flight level 285 across both FAB's.

The NEFAB ANSPs have set strategic objectives within 4 key performance areas. The planned projects and activities are initiatives defined to ensure that the strategic objectives are met and user expectations fulfilled. Within this strategic planning period the focus is to a large extent on airspace and service provision where the benefit potential is considered to be the largest within the timeframe covered by this business plan. The NEFAB ANSP's will contribute to a NEFAB-wide performance plan for the second reference period of the performance scheme, starting in 2015.

The European ATM Master Plan describes a fundamental change in the provision of Air Navigation Services compared to the current concepts and solutions. This involves careful investment planning and robust decision making processes within the ANSP-organisations and at FAB-level to ensure the best and most cost efficient solutions, both in the short to medium term and in the long term perspective.

3. VISION AND MISSION

NEFAB ANSP vision

- ▲ Services systematically planned and executed, exceeding customer expectations

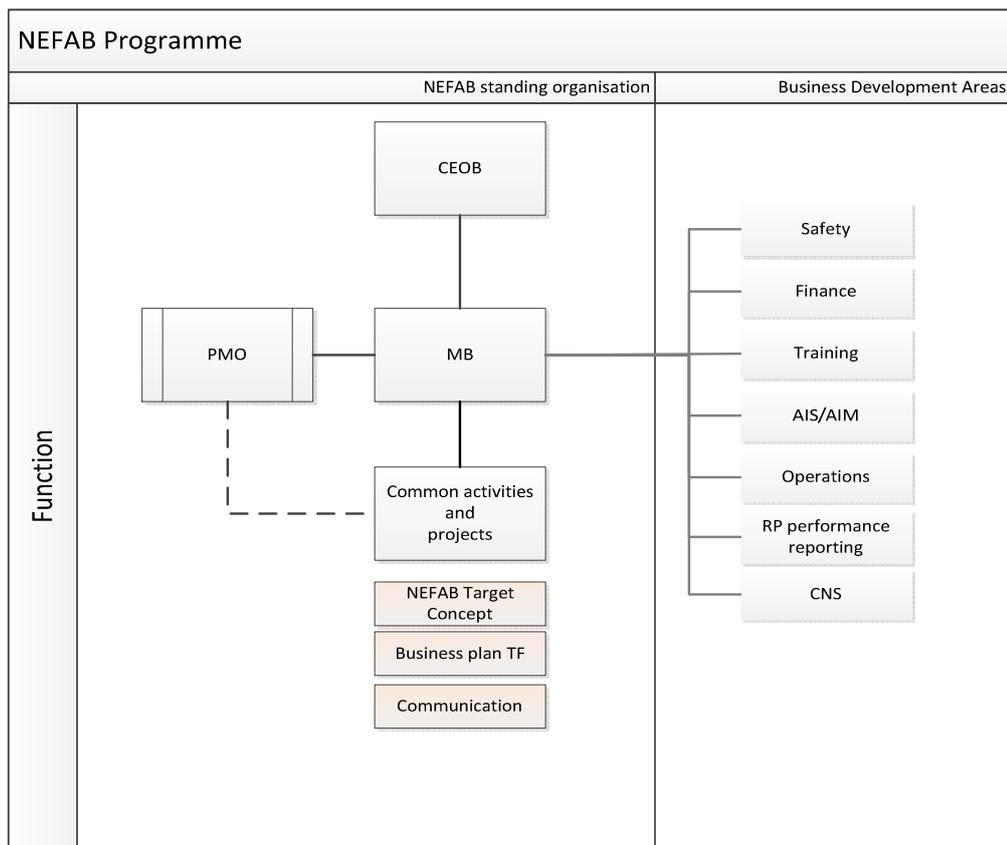
NEFAB ANSP mission

- ▲ A functional airspace block built on a foundation of best practices, continuous developments, customer satisfaction and stakeholder consultation.

4. NEFAB ORGANISATION, CUSTOMERS AND BUSINESS

4.1. The NEFAB organisation – NEFAB Programme Management Office

The NEFAB ANSP governance structure is described in the figure below.



The NEFAB PMO is tasked to manage the NEFAB Programme and support the member ANSPs and the states to reach NEFAB objectives and performance targets. This also includes information exchange and agreed stakeholder engagement.

NEFAB PMO is managed by a NEFAB Programme Office Manager reporting to the NEFAB Management Board. The overall decision making body for the NEFAB ANSP

cooperation is the NEFAB ANSP CEO Board. A set of steering documentation is established to govern the NEFAB PMO activities:

- NEFAB ANSP Agreement
- NEFAB Business Model
- NEFAB Financial Instructions
- NEFAB Communication Strategy
- NEFAB Management Handbook

A set of transversal activities are organised through individual focal points for each ANSP within the domains of safety and quality, finance, communications and legal issues.

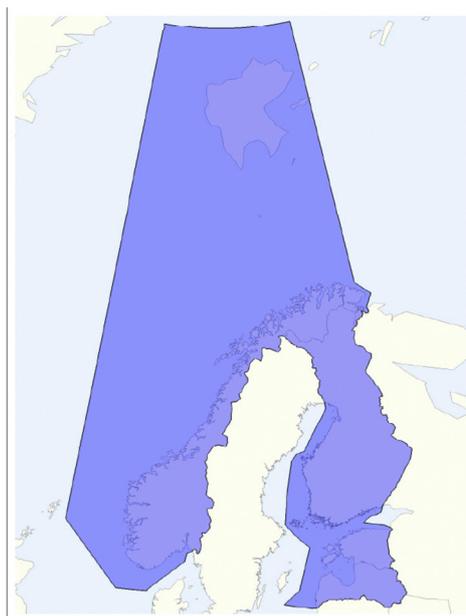
4.2. NEFAB ANS organisations – organisational charts and geographical extension

The NEFAB Air Navigation Service Providers are:

Avinor AS – Norway
EANS – Estonia
Finavia – Finland
LGS – Latvia

In the following chapter the different NEFAB ANSP-organisations are described in terms of organisational structure and relevant facts and figures.

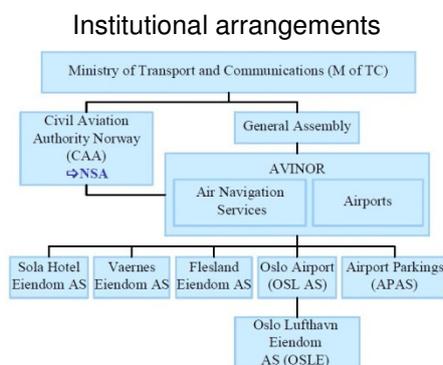
The map below show the geographical extension of NEFAB Airspace:



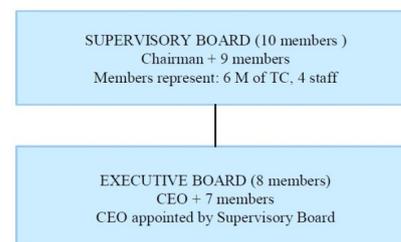
Extension of NEFAB airspace

4.3. NEFAB ANS organisation – facts and figures

4.3.1. Avinor AS



Governance structure

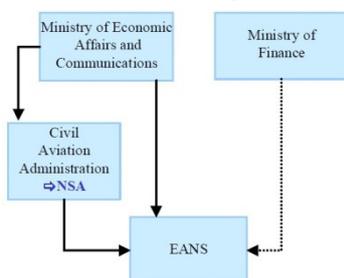


| Status | State owned limited company | |
|------------|--|--|
| Services | ATC en-route | Y |
| | ATC approach | Y |
| | ATC aerodrome(s) | Y |
| | AIS | Y |
| | CNS | Y |
| | MET | N <i>(Avinor provides only met-observations at airports)</i> |
| | ATCO training | Y |
| | Others | N |
| | Provision of services in other State(s) | N |
| Units | 3 ACCs: Oslo (ACC + APP) Stavanger (ACC) Bodø (ACC + APP + Oceanic) 17 APPs (1 APP combined with Oslo ACC+16 TWRs/APPs) 20 TWRs (Five towers operated for Norwegian Air Force and 1 tower operated for Sandefjord Lufthavn AS) 28 AFIS-units | |
| Operations | 582 396 (2012) + 3,8% (versus 2011) | |

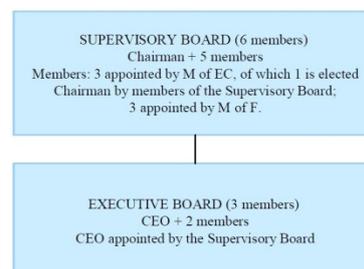
<http://www.avinor.no>

4.3.2. Lennuliiklusteeninduse AS (EANS)

Institutional arrangements



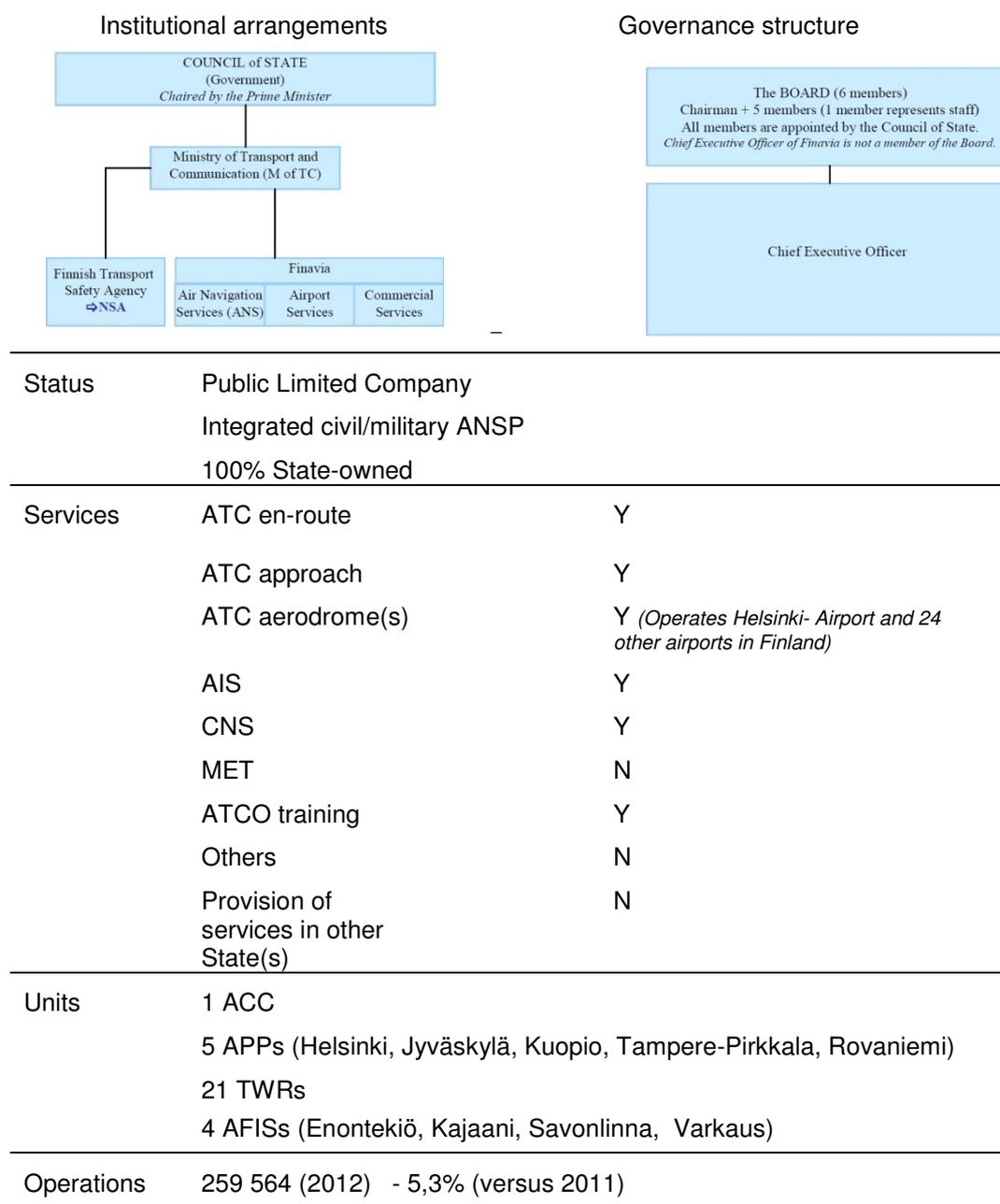
Governance structure



| | | |
|------------|--|----------------------------|
| Status | Joint-stock company as of 1998 100% State-owned | |
| Services | ATC en-route | Y |
| | ATC approach | Y |
| | ATC aerodrome(s) | Y |
| | AIS | Y |
| | CNS | Y |
| | MET | N |
| | ATCO training | Y (<i>Unit Training</i>) |
| | Others | N |
| | Provision of services in other State(s) | N |
| Units | 1 ACC (Tallinn) | |
| | 2 APPs/TWRs (Tallinn, Tartu) | |
| Operations | 193 945 (2012) + 6,0% (versus 2011) | |

<http://www.eans.ee>

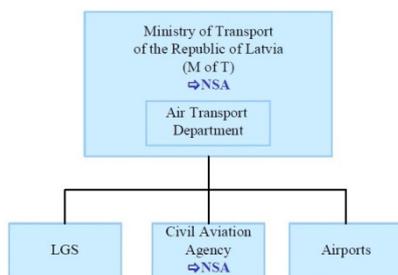
4.3.3. Finavia



<http://www.finavia.fi>

4.3.4. LGS

Institutional arrangements



Governance structure



| | | |
|------------|--|--|
| Status | Joint-stock company since 1997 100% State-owned | |
| Services | ATC en-route | Y |
| | ATC approach | Y |
| | ATC aerodrome(s) | Y |
| | AIS | Y |
| | CNS | Y |
| | MET | Y (LGS is responsible for the met-observations in airports and information dissemination to users) |
| | ATCO training | Y (Unit Training) |
| | Others | Y (AFIS and Alerting Services) |
| | Provision of services in other State(s) | Y (Airspace under the responsibility of Lithuania; Route segment NINTA – ADAXA) |
| Units | 1 ACC (Riga) | |
| | 1 APP (Riga) | |
| | 1 TWR (Riga) | |
| | 1 FIS and AFIS (Liepaja) | |
| Operations | 231 833 (2012) - 1,5 % (versus 2011) | |

<http://www.lgs.lv>

4.4. NEFAB customers

The customer groups of the NEFAB ANSPs vary across the states. Whereas the three national carriers in Norway (SAS, Norwegian and Widerøe) constitute approximately 50 percent of the total en-route revenue for Avinor, the picture is different in the other NEFAB states.

In Latvia and Estonia overflying traffic with major European and Asian carriers constitutes a much larger portion of the en-route revenue. EANS' main customers are Finnair, Lufthansa and KLM. These airlines, together with Estonian Air and Air Baltic count for slightly more than 30 percent of the total en-route revenue.

Air Baltic is the largest customer for LGS counting for around 17 percent of the total en-route revenue. Together with Aeroflot, Lufthansa and Finnair, this group of airlines count for approximately 38 percent of the total en-route revenue of LGS.

In Finland, Finnair is the major national carrier, but Finavia does also have a large portion of overflying traffic between Asia and Europe and between Russia/Middle-East and US and Canadian destinations.

The traffic flows in NEFAB airspace are mainly:

A South-West – North East flow between Europe and Asia or opposite, through Latvian, Estonian and Finnish airspace;

A South-East – North West flow between Russian airspace towards destinations in the US and Canada or opposite, through the airspace of all the NEFAB states;

A North-South flow between Finland and South Europe, through Latvian, Estonian and Finnish airspace;

Domestic traffic flows between Oslo and the major Norwegian destinations and between Helsinki and the major Finnish destinations;

Traffic flows to and from the major airports in NEFAB.

The airlines operating from the four major airports in NEFAB all depend on a reliable provision of Air Navigation Services with sufficient capacity to meet demand. In Norway and Finland the operation of the domestic network is of great importance. The public transportation system in both Finland and Norway is in need of a highly reliable air transport sector throughout all times of the year. In addition the domestic network feeds the international network of the larger air carriers in the NEFAB states.

Military airspace users constitute a different customer segment for the NEFAB ANSPs. The military depend on airspace structures suitable for their different types of operations. The airspace must be of sufficient dimensions and located so as to support the military missions as effectively as possible. Based on these facts, a good dialogue and structured consultations mechanisms is of importance for military airspace users as well as for the civil users. The NEFAB ANSPs will seek solutions where both flight efficiency for civil users and military mission effectiveness are ensured.

The NEFAB ANSPs strongly believe in open and constructive dialogue with our customers. The goal for the NEFAB ANSPs is to involve the customers in the decision making processes sufficiently early to ensure real customer involvement in relation to strategic planning processes within NEFAB.

4.5. NEFAB business

In 2010 the NEFAB ANSPs handled a total of more than 900,000 IFR airport movements and controlled a total of more than 550,000 IFR flight hours. The annual gate-to-gate revenue for the 4 ANSPs amounts to a total of around 290 million EUR. (2010)

Finland, Latvia and Norway are a part of the Eurocontrol Multilateral Route Charges System where en-route charges are calculated through a commonly agreed methodology and reported in line with procedures for multilateral customer consultation.

Estonia is not participating in the Eurocontrol Multilateral Route Charges System. Route charges are recovered in accordance with the principles laid down in the Multilateral Route Charges System, but charges are recovered through national arrangements and airspace users are systematically consulted.

The NEFAB ANSPs are serving a large number of airports. The major airports within the FAB are listed below with their annual number of aircraft movements (2012-figures):

| | |
|------------------------|---------|
| Oslo – Gardermoen | 239,357 |
| Helsinki – Vantaa | 173,966 |
| Bergen – Flesland | 103,731 |
| Stavanger – Sola | 87,500 |
| Riga – Skulte | 68,387 |
| Trondheim – Værnes | 61,219 |
| Tallinn – Lennart Meri | 48,531 |
| Oulu | 20,433 |

In addition to the service provision to civilian air traffic, all NEFAB ANSPs provide en-route services to military traffic. The military traffic is either operating within segregated military training or exercise areas or operating as regular traffic in the same airspace as civilian traffic.

The NEFAB ANSPs are all delivering CNS services internally. These services comprise strategic guidance on systems and equipment as well as first line and second line maintenance. In addition CNS services are provided to external and internal airport customers in Norway, Finland and Latvia.

5. ENVIRONMENTAL ANALYSIS

5.1. Political

The NEFAB ANSPs are all operating under the Single Sky Performance Regulation. 2014 is the last year in the first reference period, and the second reference period (2015 – 2019) is expected to call for ambitious performance targets. All NEFAB states are equally subject to the FAB-wide targets within the Key Performance Areas of cost-efficiency, capacity, safety and environment for the second reference period of the performance scheme. A further revision of the Single European Sky legislation was proposed during the summer of 2013. The possible introduction of centralised services and the separation of ancillary services need to be reflected in the long term planning of the NEFAB ANSP's.

Cooperation with the neighbouring states and FABs has always been of strategic importance to NEFAB to create benefits for the customers. Coordination of strategic approaches with the neighbouring FABs is expected to result in significant benefits for the airspace users and improve cost-efficiency of the ANSPs. NEFAB has a geographical connection and common traffic patterns with the neighbouring DK/SE FAB. NEFAB is a gateway towards the airspace of the Russian Federation, FABEC, UK/Ireland FAB and Baltic FAB, but also provides an interface with the NAT region.

The formal NEFAB governance structure at state level is established through the NEFAB Council and associated committees. An agreement is signed between the Transport Ministers of the NEFAB states and Denmark and Sweden to ensure harmonised airspace design solutions across both NEFAB and DK/SE-FAB.

5.2. Economical

The changing market for air transport is considered as both a risk and an opportunity for NEFAB and the ANSPs. The current downturn in European economy with reduced demand for air travel constitutes an immediate economic risk. On the other hand, growing markets in Russia, Middle-East and Far-East may result in more traffic in NEFAB airspace and increased revenue for the ANSPs.

To meet the technical system requirements raised by new operational concepts and ensure the timely deployment of the European ATM Master Plan, large investments are needed which may constitute a financial risk to the ANSPs. Public sources of financing for large system investments, as well as coordination and synchronisation between the NEFAB ANSPs may reduce the financial risk related to investments.

EC Regulations No 390/2013, laying down the performance scheme for air navigation services and network functions, and No 391/2013, laying down a common charging scheme for air navigation services, has considerable impact on the economic environment of the ANSPs. A decision to establish cross-border charging zones must be made through the states and their representatives.

Issues relating to charging policy, charging schemes and charging zones may also have big impact on the economies of the NEFAB ANSPs. Decision making processes related to charging are primarily conducted at state and NSA level. This calls for proper coordination and information exchange between the ANSPs, NSA's and the state level in relation to charging. The ANSPs are prepared for the call for such cooperation in 2014 and beyond.

5.3. Sociological

The NEFAB cooperation involves work across different organisations and states with different cultures. The recognition of cultural differences and the ability to work proactively with them increases the potential for success and good business solutions for the customers.

NEFAB and the business of the ANSPs involve many stakeholders. The stakeholders have different requirements, dependent on the nature of their task or business. In the operational perspective there are clear differences between civil and military airspace users and between commercial air traffic and different non-commercial operations.

Military authorities, NSA's, governments, airport operators, trade unions and the society at large are considered as major stakeholders. An efficiently functioning governance mechanism for NEFAB is in place to ensure good cooperation between stakeholders. A proactive communication strategy and proper coordination of stakeholder needs and requirements are also considered as key factors for success.

During the next five years, the management of relations towards the NSA's and States will be of major importance. The bi-directional flow of information will be essential.

5.4. Technological

The European ATM Master Plan is the driver for new operational concepts and supporting technology. The ANSPs and their customers will be more dependent on advanced technology in the future, calling for robust solutions with sufficient capacity and redundancy to ensure the safe operation of aircraft. Requirements for interoperability may drive the ATM supplier industry to new business and service models, and commercial off the shelf products and system integration solutions may play a more important role in the future. At the same time the air traffic industry becomes less dependent on ground navigation infrastructure as satellite navigation is more widely used as the prime source of navigation.

The future ATM technologies will support cross-border service provision and enable aircraft operators to plan their flight trajectories without constraints created by borders and/or national differences. The technologies will also support dynamic capacity management within and between air traffic control centres, irrespective of their geographical location.

Through the Single Sky legislation, the European Union is taking the lead in the deployment of the concepts and technologies in the European ATM Master Plan. The Interim Deployment Programme is established and the function of Deployment Manager will be established. This approach on one hand limits ANSPs alternatives in terms of time and technology, but on the other hand a harmonised development has the potential to deliver benefits in future. The new approach is recognised in NEFAB and integrated into the business planning processes.

5.5. Legal

The current national differences in the legal framework for the ANSPs call for a future harmonisation between the NEFAB states and between NEFAB and other FABs. The national differences, like national language requirements can constitute cost drivers for individual ANSPs and harmonisation can consequently contribute to reduction of cost. There will be a need for a close interaction between the NEFAB NSAs. The ANSPs will need to use the NEFAB governance and consultation mechanisms to ensure sufficient influence on new or revised regulations.

5.6. Environment

A continued, increased demand for more environmentally friendly operations is foreseen, both from a purely economic perspective and from an environmental perspective. This demand will drive ANSP planning and the choice of future solutions for airspace management and airspace design. Local environmental restrictions may limit growth at airports and consequently limit traffic growth in the airspace. More public attention to aircraft noise is also expected, which in turn may result in conflicts between targets for emissions and noise. This can to some extent be alleviated by improved navigation methods allowing for advanced Performance Based Navigation procedures to ensure both emission reductions and reduction of the number of people that are affected by aircraft noise.

The environmental performance of the ANSPs will be measured and monitored. This may result in need for investments for this purpose. In addition environmental performance will influence ANSP-decision making processes to a larger degree than previously.

For the second reference period (2015 – 2019) under the performance scheme the European Commission will develop binding targets on environmental performance also at FAB level.

6. KEY PERFORMANCE AREAS – STRATEGIC OBJECTIVES

6.1. Safety

Strategic objective

- ▲ Incidents induced by ANSPs shall be at current level or lower

NEFAB initiatives

- ▲ Harmonisation of safety management systems and increased information exchange and lesson dissemination across the NEFAB ANSPs;
- ▲ Deployment of the European ATM Master Plan
- ▲ Cooperation with neighbouring FAB's and states

6.2. Cost Efficiency

Strategic objective

- ▲ Provision of high quality service at a competitive price and seek cost reduction through common cooperation, funding and outsourcing

NEFAB initiatives

- ▲ Facilitation of shared services
- ▲ Ensure the achievement of benefits identified in the NEFAB Feasibility Study Report
- ▲ Common approach towards forward strategies in NEFAB and Borealis
- ▲ Cross Border Sectorisation within NEFAB and with DK/SE-FAB

6.3. Capacity

Strategic objective

- ▲ Services shall be provided in accordance with the EU-wide targets or better with a NEFAB-wide capacity target established from 2015

NEFAB initiatives

- ▲ Implement airspace design solutions and organise ATS service provision in order to improve capacity and remove potential “bottle-necks”
- ▲ Coordinate Network Plans and implement ATFCM scenarios across borders to neighbouring FAB's and States
- ▲ Implement relevant ATFCM-scenarios for NEFAB airspace
- ▲ Optimise contingency arrangements

6.4. Environment

Strategic objective

- ▲ NEFAB contribution to improved flight efficiency is visible and well documented.

NEFAB initiatives

- ▲ Implement Free Route Airspace within NEFAB and in cooperation with DK/SE-FAB in November 2015
- ▲ Develop and optimise the ATS Route Network
- ▲ Improve environmental performance through deployment of enabling technology and procedures in line with the European ATM Master Plan

7. STRATEGIES TO ACHIEVE OBJECTIVES

7.1. Business Development Areas

A set of Business Development Areas (BDA's) have been established aiming to enhance closer cooperation between the NEFAB ANSP's and enable strategic development of the NEFAB Programme. These BDA's are:

- Safety
- Finance
- Training
- AIS/AIM
- Operations
- Performance Reporting
- CNS

7.2. NEFAB Target Concept

To describe the deliverables and enablers for improvements in service provision and airspace design, the NEFAB Target Concept has been developed. The Target Concept will be delivered through activities related to airspace and ATS provision in 2015. The project activities currently organised in the two project streams will subsequently be consolidated into the joint Target Concept Project.

7.3. Airspace 2015

The Airspace 2015 project will design, validate and implement optimised airspace solutions in order to increase the capacity and efficiency of the Air Traffic Management network. The airspace design shall be based on operational requirements, without the constraints of national borders, in order to increase ATM performance and deliver substantial benefits. ATM-related safety levels shall be maintained or enhanced as a result of implementing the NEFAB 2015 airspace design solution.

The airspace design solutions will be implemented in cooperation with the ANSP's in the Danish Swedish FAB.

The Airspace 2015 strategy focuses on the following main elements to enable the fulfilment of performance targets:

Route Network – Implementation of Free Route Airspace (FL 285 design baseline) in defined portions of NEFAB and optimisation of the ATS Routes within the FAB.

Sectorisation – Realignment of sectors, unconstrained by national borders and FIR boundaries, to support the route network including both fixed ATS-route and Free Route traffic flows.

Airspace Classification And Delineation – Common application and access rules of class C airspace above FL95 in continental en-route airspace are envisaged in this scenario. Pending regulatory requirements, the common application of a harmonised transition altitude will be facilitated.

Military Airspace structures – Military users' requirements and mission effectiveness will need to be assured through collaborative CIV/MIL airspace design. Increased modularity in area design and optimised ASM scenarios aims at reducing the network effect of military airspace reservations.

Based on the scenario descriptions above, the Airspace 2015 project is allocated the following main tasks:

- Enhance the fixed ATS route network where and as required
- Free Route Airspace (FRA) implementation
- Airspace Classification and delineation for the year 2015
- Network compatible military Airspace structures implementation
- Sectorisation supporting network (ATS route improvements and FRA) and military areas implementation.

Objectives:

The Airspace 2015 Project is a major driver for benefits in the NEFAB context, as it shall provide enhancements in the following improvement areas:

| Objectives | Success criteria |
|-----------------------------------|--|
| Flight efficiency and environment | Reduction in additional route length and emissions in NEFAB airspace. |
| Capacity | Accommodate forecasted 2020 traffic levels. |
| Service delivery | Improve demand-capacity balancing and increase controller productivity through sectorisation improvements. Optimise the use of human resources while enabling both fixed ATS-route and Free Route operations |
| Military requirements | Accommodate the network functionality and military mission requirements in support of the route network and sector design with the use of optimised and network compatible military airspace structures. |
| Safety | Maintain or enhance ATM related Safety Levels. |

The successful implementation of the NEFAB Airspace 2015 solution shall contribute to the achievement of the ANSP performance targets for reference period 1 as well as the achievement of the FAB targets for reference period 2.

7.4. ATS Provision 2015

The ATS Provision 2015 Project will develop the principles, procedures and operational and technical requirements for an enhanced ATS Provision concept in order to increase the capacity and efficiency of the Air Traffic Management network.

The NEFAB 2015 scenario is characterised by an airspace design based on operational requirements without the constraints of national borders and with seamless transitions between ATS-units. Free Route Airspace will be implemented in defined portions of NEFAB and sectors will be realigned (cross-border) to support the traffic flows. Increased modularity in military area design will allow the airspace users and AMCs to apply optimised ASM scenarios that result in a reduced network effect. The project focuses on the following main elements to contribute to the achievement of the performance targets:

ASM/ATFCM and CDM – Long term ASM/ATFCM planning will be facilitated by a common function, maintaining a rolling strategic airspace and Demand-Capacity Balancing (DCB) scenario plan. This long term planning is supported by national Network Management Units where the AMC and FMP functions have been integrated to enable efficient short term planning and execution of the appropriate ASM/ATFCM scenario, taking into account the network effect

within and beyond NEFAB. Pre-tactical and tactical ASM/ATFCM procedures are based on harmonised airspace policies maintained through a coordination body/process established between the national High Level Airspace Policy Bodies (HLAPB).

ATS Provision through Data Link – a strategy and a common implementation plan for data link deployment in NEFAB will be developed. The requirements will be defined to enable automation and Executive Controller/Planning Controller task sharing, traffic synchronisation procedures, trajectory conformity, network wide trajectory confirmation and Oceanic clearance delivery.

ATS procedures and trajectory management – The aircraft route management in NEFAB 2015 environment is based both on fixed ATS routes and Free Route Airspace. A trajectory management based on updates to the flight trajectory as the flight progresses together with related safety nets are envisaged as the primary tools to establish the Free Route environment. Based on the scenario descriptions above, the ATS Provision 2015 Project is allocated the following main tasks:

- ATS-1 – Develop uniform NEFAB ASM/ATFCM processes and procedures (level 1, 2 and 3), including CDM-processes, support system requirements and procedures required for the application of a common enhanced FUA concept.
- ATS-2 – Develop NEFAB strategy, service concept and implementation plan for data link services.
- ATS-3 – Develop the ATS procedures and ATM system support requirements for trajectory and conflict management in FRA and (static) cross-border environment.
- ATS-4 – Develop the requirements and methodology for enhanced traffic synchronization.
- ATS-5 – Develop contingency arrangements for the FRA and cross-border environment. (TBD)

7.5. Harmonisation of Safety Management Systems

For the business planning period 2014 – 2018, NEFAB ANSPs will focus on the harmonisation of individual Safety Management Systems. In order to run common projects and support the change processes as a consequence of the different NEFAB projects, the harmonisation of certain elements in the Safety Management Systems is required. (E.g. information exchange and lesson dissemination)

NEFAB plans to drive this harmonisation through dedicated projects.

7.6. European ATM Master Plan deployment

The ATM Master Plan is a key element for the implementation of the Single European Sky.

The SESAR Master Plan, which is an outcome of SESAR definition phase, provides the roadmap for the development and deployment phases of the SESAR programme which constitutes the technological pillar of the Single European Sky policy. SESAR aims at developing the new generation air traffic management system capable of ensuring safety and efficiency of air transport throughout Europe over the next 30 years.

The key features are:

- i. **Moving from airspace to trajectory based operations**, so that each aircraft achieves its preferred route and time of arrival;
- ii. **Collaborative planning** so that all parties involved in flight management from departure gate to arrival gate can plan their activities based on the performance the system will deliver;
- iii. **Dynamic airspace** management through enhanced co-ordination between civil and military authorities;
- iv. **New technologies** providing more accurate airborne navigation and optimised spacing between aircraft to maximise airspace and airport capacity. **New technologies will be embedded into a harmonised and interoperable technical architecture** whilst supporting the needs of all European regions.
- v. **The human has a central role**, widely supported by advanced tools to work safely and without undue pressure.

NEFAB CONOPS has taken all the mentioned elements into account. To reach the main objective which is provision of efficient and safe air traffic services, NEFAB ANSPs aim at FAB-wide interoperability of ATM systems. A NEFAB strategy towards EUROPEAN ATM Master Plan shall not just remain on monitoring level and on basic a fulfilment of the European Commission regulations, but NEFAB ANSPs will influence the processes where possible.

Together with other European FABs (ANSP level) a set of 7 Activities Areas (AA) is defined to ensure synchronisation of deployment:

1. Collaborative flight planning (linked to ESSIP objective FCM03)
2. Airspace Management Improvements and data sharing (linked to ESSIP objective AOM 19)
3. Airport CDM (necessary support from ANSPs to relevant airports, linked to ESSIP objective AOP-05)
4. Air Ground Data-Link (Linked to ESSIP objective ITY-AGDL)
5. Automated assistance to controllers (Linked to ESSIP objective ITY-COTR)
6. RNP Approach (Linked to ESSIP objective NAV10)
7. Continuous Descent Operations/Continuous Climb Operations (Linked to ESSIP objective ENV01)

The outline of activities in these 7 “project blocks” will be synchronised among NEFAB ANSPs and placed into the portfolio of activities within NEFAB as these are clearly connected with important milestones and deliverables within ATS Provision 2015 and Airspace 2015.

7.7. Cooperation with neighbouring FAB’s and states

Functional and efficient cooperation arrangement with neighbouring states and FAB’s are of strategic importance to NEFAB and our customers. In this chapter a description of the relations and their importance for the efficient service provision to our customers is presented.

7.7.1. DK/SE FAB

NEFAB and DK/SE FAB have a common strategic approach to improve flight efficiency and deliver important benefits to airspace users. Airspace design solutions will be implemented in cooperation with the ANSP's in DK/SE-FAB and steered through a common steering group.

Introduction of Free Route Airspace across both NEFAB and DK/SE-FAB and the use of cross border service provision, will contribute to improved flight efficiency and more cost-efficient operations of the involved ANSP-organisations. Significant traffic flows operate between NEFAB and DK/SE-FAB, underlining the strategic importance of the cooperation between the FABs.

The cooperation between NEFAB and DK/SE-FAB will also ensure good connectivity with FABEC airspace and the Baltic FAB airspace for a large portion of flights originating within the NEFAB countries or entering NEFAB airspace from NAT airspace or from the Russian Federation.

7.7.2. UK/Ireland FAB

The traffic between NEFAB and UK/Ireland FAB is mainly originating in NEFAB states and Sweden with destinations in UK, Ireland and countries in south-western Europe like Portugal and the south west of Spain, including the Canary Islands. In addition some of the traffic between the two FABs is oceanic traffic originating in Russia, Finland, Sweden and Norway. NEFAB's target is to ensure a seamless interface with the UK/Ireland FAB, ensuring improved flight efficiency for flights to the major hubs in UK and Ireland as well as a good connectivity with FABEC airspace and the oceanic airspace operated by NATS and IAA. UK and Irish airspace also constitute areas where Free Route Airspace could be introduced, bringing benefits to traffic to and from NEFAB airspace.

Existing cooperation agreements and delegation of the responsibility for the provision of ATS between UK and Norway related to offshore helicopter operations will continue under the NEFAB umbrella. These arrangements constitute important elements to ensure the safety and efficiency of commercial offshore helicopter operations supporting the vital oil- and gas industry in the North Sea basin.

7.7.3. Baltic FAB

Cooperation and harmonisation with Baltic FAB is considered to be an important element of NEFAB development and deployment. Historically, Baltic State cooperation started in the mid-nineties. Some projects and development plans were developed for all three Baltic ANSPs. Moreover, Latvian and Lithuanian airspace delineation and Inter-State agreements are based on agreed terms and conditions. One of the vital conditions for the current airspace border configuration is a delegation of parts of the Lithuanian airspace to Latvia for the provision of ATS. Within the scope of existing EU regulations this applies not only to ANSPs but also to NSA supervision. The provision of ATS in some parts of Polish airspace has also been delegated to Sweden. The presence of a part of Russian Federation airspace (Kaliningrad FIR) inside of Baltic FAB airspace, and the necessity to respect ICAO rules and provisions related to the High Seas while coordinating military flights, will also require review and adaptation of existing agreements.

Taking into account the NEFAB airspace configuration and foreseen cooperation with DK/SE-FAB, the realisation of benefits for the users may be expanded if Baltic FAB participates in Free Route Airspace development and coordination.

7.7.4. Russian Federation

The Russian Federation is an important strategic partner. All NEFAB members have a common border with the Russian Federation. A large portion of transcontinental flights between Western Europe and Far East pass through NEFAB airspace. More than 40% of the flights are crossing Russian border in Tallinn FIR and Riga FIR holds a similar traffic pattern.

The Russian ANSP (Rosaviatsia) has approached NEFAB to strengthen the cooperation to improve route network and coordination across the common border. The NEFAB ANSP's have a clear intention to develop the relations with Rosaviatsia.

St. Petersburg area, the second largest economic area of Russia in the vicinity of the Estonian and Finnish border, has a huge growth potential. NEFAB ANSPs will co-operate with the Russian Air Navigation Service Provider in order to have a good overview of the developments in the St. Petersburg area in order to be prepared for a significant growth of flights.

NEFAB members own the eastern border of the ECAC area and bear the inconvenience in operating buffer zones due to the different systems in use in Europe and Russia. One of the enablers for a seamless cross border ATS provision is harmonised procedures. The co-operation within NEFAB and with the Russian Air Navigation Service Provider shall be organised and executed in such a way that variations in procedures and buffer zones per ANSP are kept to a minimum.

7.7.5. Iceland

The interface between NEFAB and Icelandic airspace is of strategic importance to NEFAB. This interface constitutes the important gateway between Continental airspace in Northern Europe and North Atlantic Oceanic Airspace. Service provision in Bodø Oceanic FIR is to a large extent based on continental airspace working methods due to the availability of surveillance coverage and VHF coverage in large portions of this airspace. The service provision is a vital part of the transition from continental to oceanic operations and contributes to increased flight efficiency both in Bodø Oceanic FIR and in other parts of NAT airspace.

The amount of traffic operating between NEFAB airspace and NAT airspace is increasing. This increase is driven by a growing number of ultra-long-haul flights, improvements in route structure and introduction of RVSM in the Russian Federation. The aviation market is also growing in countries like India, Pakistan and Turkey, as well as in the Middle-East. NEFAB's target is to ensure a smooth transition between continental and oceanic airspace and contribute to an efficient conduct of flights operating across NEFAB airspace between NAT airspace and the airspace bordering to NEFAB in the east and south-east.

7.8. NEFAB Programme Management Office

To execute the projects and actions defined in the NEFAB Business Plans and supporting documentation, a NEFAB Programme Management Office (PMO) has been set up. The governance structure for NEFAB and the tasks of the NEFAB PMO is described more in detail in chapter 4.1.

8. STRATEGIC INVESTMENTS

The planned performance improvement for NEFAB in this period requires different types of ATM system support. In addition there will be a need to make important strategic decisions among the NEFAB ANSPs in order to plan investments for a perspective until 2025 to 2030. These strategic decisions will need to take into account the future SESAR Concept of Operations and the associated deployment steps for the corresponding period in the European ATM Master Plan.

8.1. ATM-systems - short to medium-term

In the period up to 2015 the investments are mainly related to implementation of the current NEFAB Concept of Operations. These investments typically involve different ATM system upgrades or “add-ons” to enable new functionality. Examples of such enabling functionalities are Medium Term Conflict Detection (MTCD) Controller-Pilot-Datalink Communication (CPDLC) and enhanced OLDI-functions.

8.2. ATM-systems - long term

During the longer term planning perspective the system requirements are far more demanding, both in terms of enabling technology and in terms of strategies for design and implementation. The deployment of this technology and implementation of new operational concepts goes beyond the current strategic planning period, but important decisions related to procurement of systems or services or a combination of these, will need to be taken during the period until 2018. These decisions will be of crucial importance in order to realise Step 1 and Step 2 in the European ATM Master Plan. The possible introduction of centralised services may also influence decisions related to ATM systems.

The NEFAB ANSPs will need to put effort into the preparation for this decision making process, taking into account the degrees of uncertainty that will be involved, as well as considering how such large investments can be made without increasing the ANSPs financial risk to unsustainable levels.

8.3. Communication

During the current strategic planning period, we expect to see a shift in the investment profile for communication infrastructure from traditional voice communication to datalink communication. The datalink implementation both involves procurement of communication services as well as integration of datalink capability into the ATM-systems. The use of datalink is expected to accelerate further in the next planning period and the use of datalink will involve communication between onboard systems and ATM-systems in addition to communication between controllers and cockpit crew.

In addition investments are needed in the ground-ground communications infrastructure. Transition from AFTN to AMHS, subscription to Pan European Network Services (PENS), taking over the role of the so called “Nordic Ring”, Voice over IP (VoIP) and network support to System Wide Information Management (SWIM) and Collaborative Decision Making (CDM) constitute the major projects related to ground-ground communications infrastructure and services.

8.4. Surveillance

New surveillance technologies are emerging and will gradually replace the current radar technology. Both Wide Area Multilateration (WAM) and ADS-B projects are already ongoing within NEFAB, and this is expected to accelerate further up to 2015. As existing radar installations move towards decommissioning they are expected to be gradually replaced by alternative and more cost-efficient solutions. This indicates the potential for the ANSPs to reduce future investments in surveillance infrastructure, but still a NEFAB-wide perspective on the investment plans can ensure more efficient and cooperative solutions with reduced total investment levels and reduced financial risk as a consequence.

The NEFAB ANSPs will strive to share surveillance data to the largest extent possible in order to improve coverage and reduce the need for further investments in surveillance infrastructure.

8.5. Navigation

ANSPs will become less dependent on ground based navigation infrastructure. The investment levels related to ground based navigation is expected to be gradually reduced as satellite based navigation plays a more important role.

Taking into account ICAO A37-11 Resolution NEFAB States/ANSPs will coordinate implementation of the Performance Based Navigation (PBN) in en-route airspace and in terminal airspace where considered feasible.

8.6. Other investments

The NEFAB ANSPs are planning investments and/or procurement of services related to the Implementing Rule on Aeronautical Data Quality (ADQ) and the transition from Aeronautical Information Services (AIS) to Aeronautical Information Management (AIM). This will be a long-term programme running throughout the entire business planning period.