NEFAB
north european functional airspace block

NEFAB BUSINESS PLAN 2015 - 2019

Document revision history

Version	Date	Status	Approval
1.0	2014 07 04	First edition	CEOB 17

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1. INTRODUCTION

Dear reader!

The Air Navigation Services Providers (ANSPs) of the North European Functional Airspace Block (NEFAB) present through this document the 5 year Business Plan 2015 - 2019. NEFAB was established on the 4th of December 2012 in accordance with the requirements of the Single European Sky legislation. The NEFAB 5 year Business Plan is the strategic roadmap for improvements in the Air Traffic Management services across the NEFAB States.

In addition the NEFAB ANSPs also seek cooperation with ANSPs outside NEFAB, which is in accordance with the intentions of the Single European Sky package II+. The NEFAB ANSPs are all members of the Borealis Alliance which consist of the ANSPs of UK/IR FAB, DK/SE FAB, NEFAB and Isavia (service provider of Iceland). One of the objectives of the Borealis Alliance is to look for strategic business opportunities across FABs.

A continuous change in the market for air transport seeks for substantial improvements by all stakeholders. The low-cost carriers continue to take a larger portion of the total market, forcing the traditional network carriers to cut costs and reduce air fares. As a part of this there is a strong political drive to improve the performance of the European Air Navigation System and adapt to the changed environment. Therefore NEFAB ANSPs seek all possibilities to reduce internal costs and continue to work for improved flight efficiency. This is considered important also from an environmental and a financial perspective.

Through the cooperation between the ANSPs in NEFAB, we focus to deliver both internal benefits in the ANSP organisations and external benefits to our customers. We will deliver substantial benefits through initiatives like free-route airspace, cross border service provision and collaborative network management solutions and the first phase will be implemented in 2015. We will also focus on and prioritize different areas in our business processes in order to achieve internal efficiency and cost control for the ANSPs which in turn will contribute to reduction in user charges.

The NEFAB ANSPs are all operating under the Single Sky Performance Regulation. The first reference period of the Performance Scheme will end 2014. For the second reference period (2015 – 2019), a FAB-wide performance plan has been developed, approved by the states. The NEFAB ANSPs have also worked actively to develop an ambitious NEFAB 5 year Business Plan for this reference period, ensuring continued benefits to the airspace users.

The NEFAB ANSPs believe in an open and constructive dialogue with our customers and stakeholders. We 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, both at national level and FAB – level, to ensure that customer views and customer needs are properly addressed.

Anders Kirsebom	*Tanel Rautits*	*Raine Luojus*	*Davids Taurins*
Chief Executive	*CEO*	*Chief Executive*	*CEO*
Avinor - ANS	*EANS*	*Finavia - ANS*	*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 ambition is to be **the best performing functional airspace in Europe**. We will seek to implement optimal solutions for the benefit of our customers and stakeholders.

The **NEFAB ANSPs cover** a large geographical area and serve 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 relies on stable and reliable Air Traffic Management in the NEFAB states where air transport in some areas is considered as the primary means of public transport.

NEFAB operates in a **business environment** with different stakeholders. Changes in the European Air Traffic Management are to a great extent politically driven through the Single European Sky initiative. The airspace users support the political drive for change and improvement among ANSPs to enable more cost-efficient solutions with optimized capacity to meet future demand. This requires good coordination and cooperation with the different stakeholders at all levels. 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 invest in the years to come in new operational concepts and supporting technology, bringing a financial risk for ANSPs, but also an opportunity to succeed.

The NEFAB ANSPs have set strategic objectives within **4 key performance areas (safety, costs, capacity, and environment).** The planned projects and activities are initiatives defined to ensure that the strategic objectives are met and user expectations fulfilled. Improved flight efficiency and improved environmental performance is a must in the years to come. This results in a more systematic approach to environmental consequences of airspace management and airspace design solutions.

The strategies and objectives focus on airspace and service provision where the benefit potential is considered to be the largest within the timeframe covered by the Business Plan. The short term target is to implement the NEFAB Network Plan (NEFAB Target Concept) including Free Route Airspace as low as practically possible within NEFAB in 2015, and in cooperation with the Danish-Swedish FAB to ensure a continuous Free Route Airspace above flight level 285 across both FABs (NEFRA Phase 1). Internal priorization and launch of most obvious improvement areas will also start in 2015.

These strategic activities shall involve 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 short and long term perspectives.

3. VISION AND MISSION

NEFAB ANSP vision

- **NEFAB is the preferred functional airspace solution**,
  - where service is optimized to customer expectations,
  - with focus on safe, cost efficient and environmental performance

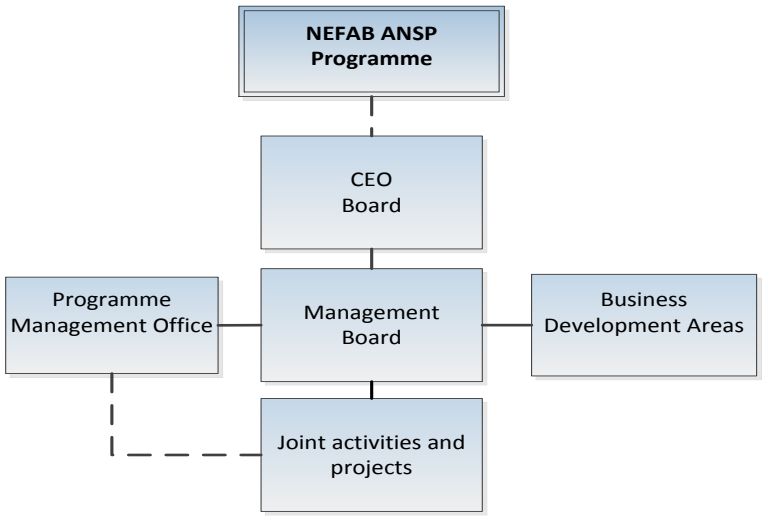
NEFAB ANSP mission

- **NEFAB provide its customers complete and reliable services**,
  - Built on a foundation of best practices, continuous developments, customer satisfaction and stakeholder consultation.

4. NEFAB ORGANISATION, CUSTOMERS AND BUSINESS

4.1. NEFAB organisation

The NEFAB ANSP Programme governance structure is described in the figure below:



4.2. NEFAB Programme Management Office

To execute the projects and actions defined in the NEFAB Business Plans, NEFAB Annual Plans and supporting documentation, a NEFAB Programme Management Office (PMO) has been set up.

The NEFAB PMO manages the NEFAB Programme and supports 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 is organised through individual focal points for each ANSP within the domains of safety and quality, finance, communications and legal issues.

4.3. Business Development Areas

A set of Business Development Areas (BDAs) have been organized for closer cooperation between the NEFAB ANSPs, to prioritize and develop the initiatives in the NEFAB FSR and to plan for deploying strategic developments of the NEFAB Programme. Terms of Reference and Scope of Activities for each BDA are developed to systematically manage the work.

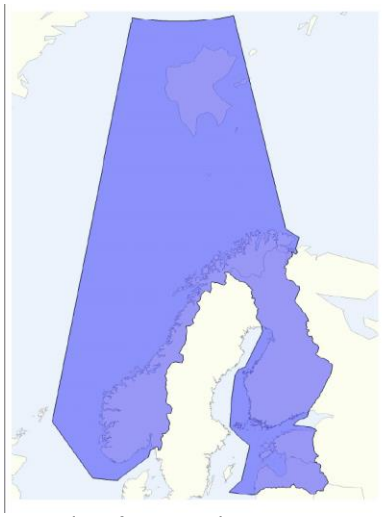
The mobilized BDAs are Safety, Training, AIS/AIM and CNS. The Financial, Operational and Performance BDAs are awaiting mobilization.

4.4. NEFAB ANS organisations –geographical extension

The NEFAB Air Navigation Service Providers are:

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

The map below shows the geographical extension of NEFAB Airspace:



Extension of NEFAB airspace

4.5. NEFAB ANSPs services, facts and figures

	ATC en-route	ATC Oceanic	ATC approach	ATC aerodrome(s)	AIS	CNS	MET	ATCO TRAINING	
Avinor Flysikring AS www.avinor.no	Y	Y	Y	Y	Y	Y	N	Y	Limited company owned by Avinor
EANS www.eans.ee	Y	N	Y	Y	Y	Y	N	Y	Joint-stock company as of 1998 100% State-owned
Finavia www.finavia.fi	Y	N	Y	Y	Y	Y	N	Y	Public Limited Company Integrated civil/military ANSP 100% State-owned
LGS www.lgs.lv	Y	N	Y	Y	Y	Y	Y	Y	Joint-stock company since 1997 100% State-owned

Traffic (European Network Operations Plan) and unit rate forecasts for 2015 – 2019 (NEFAB Performance Plan 2015-2019)

ANSP	2013 Traffic	Growth of traffic 2014-2019 (Medium)	Unit Rate /En route 2014	Average change Unit Rate/Year
Avinor	605 637	8,4% (Norway ACC Sector Group North) 17,2% (Norway ACC Sector Group East) 12,3% (Norway ACC Sector Group West)	52,77	-3,1%
EANS	188 473	21,8%	22,95	-0,6%
Finavia	248 736	10,5%	52,06	-3,5%
LGS	236 506	19,6%	28,44	-2,0%

4.6. NEFAB Customers

The customer groups of the NEFAB ANSPs vary across the states.

Norway
Three national carriers (SAS, Norwegian and Widerøe) constitute approximately 52 percent of the total en-route revenue for Avinor. In addition, the number of overflights is increasing and for 2013 these flights represents 13 % of the total number of movements of which Emirates and United Airlines are the largest customers.

Estonia
Overflying traffic with major European and Asian carriers constitutes a large portion of the en-route revenue. Main customers of EANS 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.

Finland
Finnair is the major national carrier, but Finavia does also have a portion of overflying traffic between Asia and Europe and between Russia/Middle-East and US and Canadian destinations representing approximately 40 percent of the en-route revenue for Finavia ANS.

Latvia
Overflying traffic with major European and Asian carriers constitutes large portion of the 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.

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.

In Norway and Finland the operation of the domestic network is of great importance. The public transportation systems in both Finland and Norway need 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 an other 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 to support military missions.

A good dialogue and structured consultations mechanisms are of importance for military and civil airspace users. The NEFAB ANSPs will seek solutions where both flight efficiency for civil users and military mission effectiveness are ensured through involvement of customers in the strategic planning and decision making processes.

4.7. NEFAB customer services

In 2012 the NEFAB ANSPs handled a total of more than 1 037 000 IFR airport movements and controlled a total of more than 602 000 IFR flight hours. The annual gate-to-gate revenue for the four ANSPs amounts to a total of around 318 million EUR (ACE Report 2012).

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 (2013 figures):

Oslo – Gardermoen	243 092
Helsinki – Vantaa	169 924
Bergen – Flesland	106 225
Stavanger – Sola	87 352
Riga – Skulte	67 407
Trondheim – Værnes	60 830
Tallinn – Lennart Meri	37 856
Oulu	20 550

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 civil traffic.

The NEFAB ANSPs are all providing CNS services. These services comprise investment of systems and equipment as well as first line and second line maintenance. CNS services are provided to external and internal airport customers in Norway, Finland and Latvia.

4.8. Borealis dimension

All NEFAB ANSPs are members of the Borealis alliance together with LFV, Naviair, NATS, IAA and Isavia. Borealis Alliance is a strategic business cooperation between the ANSPs covering the northern hemisphere from west of Greenland to the Russian border and from the North Pole to the continental part of Europe.

The Vision of the Borealis Alliance is:

“To be the leading ANSP Alliance that enables its Members to drive better performance for stakeholders through business collaboration.”

The members have agreed to the Alliance having two specific objectives within the vision of the Alliance:

- Primary objective: to facilitate cooperation between the Members, on commercially- recognized business partnering principles that will make a contribution to the operational and financial performance of Members’ air traffic services, including by 2015 making a contribution to the achievement of Single European Sky and ICAO performance targets.

- Secondary objective: to enable Members collectively to be more influential with relevant trade, regulatory and policy bodies in Europe and internationally by developing a common position on major issues and expressing it jointly.

The NEFAB ANSPs will seek business opportunities with ANSPs outside of NEFAB when this brings added value to one or more members compared to keeping such an activity within NEFAB.

4.9. Expected changes during 2015 - 2019

The NEFAB ANSPs will develop their individual governance and business models aiming at closer cooperation within the NEFAB partnership. NEFAB ANSPs will seek benefits through common planning, deployment and production of services in most optimal forms.
NEFAB ANSPs (except LGS) are today partners in SESAR through the NORACON consortium. This SESAR 1st phase will end in December 2016. The ongoing preparation for SESAR 2 calls for an assessment of potential participation.

5. ANALYSIS OF MARKET ENVIRONMENT

5.1. Political

The NEFAB ANSPs are all operating under the **SES Performance Regulation**. The NEFAB States have developed NEFAB Performance Plan for the second Reference Period (2015 – 2019) which will include all the performance targets within the Key Performance Areas of cost-efficiency, capacity, safety and environment.

The initiative by Eurocontrol to introduce **Centralised Services** (lead by Eurocontrol) and the possible separation of ancillary services need to be reflected in the long term planning and development of the NEFAB ANSP activities.

Cooperation with the neighboring states and FABs has a strategic importance for NEFAB to create benefits for the customers. Coordination of strategic approaches with the neighboring FABs is expected to result in significant benefits for the airspace users. 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 European economy is stabilizing with a slightly increased demand for air travel. Still 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 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 investments that are made mainly for network benefits should be available for large system investments, as well as effective coordination and synchronisation between the NEFAB ANSPs to reduce the financial risk related to investments.

EC Implementing **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, have considerable impact on the economic environment of the ANSPs.

5.3. Sociological

NEFAB and the business of the individual 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, NSAs, 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.

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. 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 function of **Deployment Manager** will be established including a “permanent” Deployment Plan with Common Projects for ANSPs and FABs to deploy. 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 is a need for a close interaction between the NEFAB NSAs.

5.6. Environment

A continued, increased demand for more **environmentally friendly operations** is foreseen. This demand will drive ANSP planning and the choice of future solutions for airspace management and airspace design. The NEFAB and DK/SE FAB joint project NEFRA will become a key factor in offering direct flight trajectories. 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 ANSPs decision making processes to a larger degree than previously.

6. KEY PERFORMANCE AREAS – STRATEGIC OBJECTIVES

The key performance areas and strategic objectives resulting thereof are the core of the NEFAB Performance Plan (2015 – 2019).

6.1. Safety

Strategic objective

- Incidents induced by ANSPs shall be at current level or lower in quantity and severity

NEFAB initiatives

- Harmonisation of safety management systems and increased information exchange and lesson dissemination across the NEFAB ANSPs
- Deployment of safety related concepts/systems of the European ATM Master Plan
- Cooperation and information exchange with neighbouring FAB´s and states

Deliverable

- Harmonized/Integrated Safety Management System/-s and processes
- Safety Net -features implemented into ATM systems, i.e. conflict alerts
- Raised level of safety both, for the provided services and within the organizations
- Established communication channels for effective cooperation within safety domain and information exchange with neighbouring FABs and states to promote safety (safety awareness, lesson dissemination and safety improvement)

6.2. Cost Efficiency

Strategic objective

- Provision of high quality service at competitive price and establishment of effective cost control and cost reduction through cooperation, joint procurement and best purpose business models

NEFAB initiatives

- Facilitation of shared services

- Harmonisation and/or integration of ancillary services (AIM, CNS, ATS-TRG)
- Common approach to strategies in NEFAB and Borealis Alliance
- Cross Border Sectorisation within NEFAB and with DK/SE-FAB

Deliverable

- Joint specifications of systems/services
- Joint production of services through different production models, i.e. joint ventures, resource sharing, etc.

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 optimize capacity and prevent potential “bottle-necks”
- Coordinate Network Plans and aim to implement cross border services with neighbouring FABs and States
- Optimise contingency arrangements

Deliverable

- Free Route Airspace, i.e. NEFAB FRA, NEFRA phase 1and NEFRA phase 2
- Cross Border sectorisation
- System Harmonisation/Integration
- Cross Border Contingency Agreements between ANSPs

6.4. Environment

Strategic objective

- NEFAB contribution to improved flight efficiency is visible, recognized 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 “En-route to En-route” in line with the European ATM Master Plan

Deliverable

- Shorter/Direct flight routes for airspace users
- Optimum flight profiles for climb/descent

7. STRATEGIES TO ACHIEVE OBJECTIVES

7.1. NEFAB Feasibility Study Report (2011)

The NEFAB Feasibility Study Report (NEFAB FSR 2011) includes an exstensive list of initiatives including sub-areas for different ambition levels. NEFAB ANSPs have reviewed the initiatives to look into potential common business and service enablers. As a full exercise on all initiatives would not be realistic, the NEFAB ANSPs have prioritized the most obvious and economic of scale –benefit areas for development and potential implementation. These initiatives will be incorporated into the NEFAB 5 year Business Plan and NEFAB Annual Plan 2015. Respective BDAs will form the deliverables for deployment and production. The initiatives with low priorization will await next review cycle for potential activation.

7.2. Prerequisites

The ANSPs need individual close cooperation with the NSAs and state levels to harmonize and integrate service and system concepts. NEFAB ANSPs will together develop proposals and initiatives to the NEFAB NSA Committee for joint discussions and acceptance of ways forward.

Main areas for NSA/State level alignment are:

- National/common language requirements,
- Acceptance of approvals across borders,
- Training/competence requirements, and
- Audit principles

7.3. Risks related to strategies and objectives

The ANSPs are faced with some risks related to the development of the services. These risks need active monitoring and mitigation. The following issues are identified for the 5 year period:

- SES II+ regulation change in focus, putting attention on different priorities than expected,
- SESAR Deployment is in general providing priorities for major investments, but existing systems can not be decommissioned before new technologies are deployed and proven successful,
- Some SESAR Deployment requirements are for pan-European harmonization and as such does not provide a positive business case for NEFAB,
- Economical downturn of aviation in different states does not allow major investments,
- Centralized services could take opportunities away from FABs.

7.4. NEFAB ANSP Strategy

NEFAB ANSPs will:

- Concentrate to implement the Free Route Airspace to benefit customers,
- implement processes to cut costs, seek new revenue and extra savings,
- contribute to the state-level discussion on centralized services,
- contribute at the NEFAB-level discussion on common certification principles,
- prioritize actions to pursue state commitments.

High level targets:

- Free route airspace in NEFAB Airspace
- Extension of NEFAB FRA wih DK/SE FAB Airspace (North European Free Route Airspace, NEFRA),
- Review and promote potential implementation of NEFAB and DK/SE FRA (NEFRA) principles with UK/Ireland FAB airspace by the end of RP2,
- Cross border sectorization within NEFAB airspace and with DK/SE FAB
- Contingency arrangements optimizations,
- Look for synergies in ATS services in low density operation areas beyond NEFAB,
- Development of business opportunities realizing potential benefits identified in the NEFAB Feasibility Study Report.

7.5. NEFAB Target Concept Project

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 organised in two project streams have subsequently been consolidated into the joint Target Concept Project.

7.5.1. Airspace

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

The airspace solutions will be implemented in cooperation with the ANSPs 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 in defined portions of NEFAB and optimisation of the ATS Routes within NEFAB.

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.

7.5.2. ATS Provision

The ATS Provision project stream 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 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 Airspace Management Cells to apply optimised ASM scenarios.

7.6. Harmonisation of Safety Management Systems

For the business planning period 2015 – 2019, NEFAB ANSPs will focus on,

a) harmonising individual Safety Management Systems, and
b) establishing the foundation for a common Safety Management System.

In order to run common projects and support the change processes as a consequence of the different NEFAB projects, the harmonisation of elements in the Safety Management Systems is required. (E.g. information exchange and lesson dissemination)

The foundation for a commonSafety Management System will be established through a separate initiative/project.

7.7. European ATM Master Plan deployment

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

The European ATM Master Plan, which is an outcome of SESAR definition phase, provides the roadmap for the deployment phases of the SESAR programme which constitutes the technological pillar of the Single European Sky policy.

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 Target Concept (Concept of Operation or CONOPS) has taken above mentioned elements into account to ensure interoperability of ATM systems. An update of the NEFAB CONOPS will be done during the 5 year period reflecting the deployment activities. A NEFAB strategy on European ATM Master Plan deployment shall not only remain on monitoring level but NEFAB ANSPs will influence the processes where possible.

Relevant activities will be synchronised among NEFAB ANSPs and placed into the activities within NEFAB as these are connected with major milestones and deliverables within ATS Provision 2015 and Airspace 2015.

7.8. Cooperation with neighbouring FABs and states

Functional and efficient cooperation arrangements with neighbouring states and FABs are of strategic importance to NEFAB and our customers.

7.8.1. DK/SE FAB

NEFAB and DK/SE FAB have a common project to improve flight efficiency and deliver important benefits to airspace users. Airspace solutions will be implemented in cooperation with the ANSPs in DK/SE-FAB, i.e. NEFRA Phase 1.

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.

NEFRA Phase 2 will be prepared during the first part of the starting 5 year period with an implementation target for 2017.

7.8.2. UK/Ireland FAB

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.

7.8.3. Baltic FAB

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 presence of a part of Russian Federation airspace (Kaliningrad FIR) inside 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.

7.8.4. 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 (FSUE State ATM Corporation) has approached NEFAB to strengthen the cooperation to improve route network and coordination across the common border. The NEFAB ANSPs have a clear intention to develop the relations with FSUE State ATM Corporation.

NEFAB members own a large part of the eastern border of the ECAC area and bear the challenge 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 harmonized procedures. The co-operation within NEFAB and with FSUE State ATM Corporation shall be organized and executed in such a way that variation in procedures and buffer zones per ANSP are kept to a minimum.

7.8.5. 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.

8. STRATEGIC INVESTMENTS

The planned performance improvement for NEFAB in this period requires different types of ATM concepts and technology. In addition there will be a need to make important strategic decisions among the NEFAB ANSPs in order to plan investments for the next decade 2015 - 2025. 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.

Some future investments will be done in the traditional way by procuring systems and tools. NEFAB ANSPs will also seek solutions through potential joint specifications and joint/harmonised procurements. NEFAB ANSPs will also seek cost reduction through service procurements, i.e. buying licences to systems/tools in place by a neighbouring ANSPs or joining forces in a cooperative service production without investing in an individual system/tool.

The NEFAB Performance Plan includes a list of planned investments that each NEFAB ANSP has reported for the 2015 – 2019 period. The strategic activities will also support the strategic objectives in the European Network Strategy Plan (NSP).

8.1. ATM-systems - short to medium-term

During the first years in the period 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. These decisions will be of crucial importance in order to realise the European ATM Master Plan. The possible introduction of centralised services may also influence decisions related to ATM systems.

8.3. Communication infrastructure

During the current strategic planning period, NEFAB ANSPs expect to see a shift in the investment profile for communication infrastructure from traditional voice communication to datalink communication. However, the maturity of technical solutions may postpone the datalink implementation even beyond 2019. 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 in the future and will involve communication between onboard systems and ATM-systems in addition to communication between controllers and cockpit crew.

In addition investments are foreseen during the planning period in the ground-ground communications infrastructure. Transition from Aeronautical Fixed Telecommunication Network (AFTN) to AFTN Message Handling System (AMHS), subscription to Pan European Network Services (PENS), taking over the role of the so called “Nordic Ring” (a communication network between ANSPs), 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 infrastructure

New surveillance technologies are emerging and will gradually replace the current radar technology. Both Wide Area Multilateration (WAM) and Automatic Dependant Surveillance–Broadcasting (ADS-B) projects are already ongoing by individual ANSPs within NEFAB. This is expected to accelerate further into the RP2. As existing radar installations move towards decommissioning they are expected to be gradually replaced by alternative and more cost-efficient solutions. 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 infrastructure

Airspace users 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. Also maintenance costs are expected to reduce.

NEFAB States/ANSPs will coordinate implementation of the Performance Based Navigation (PBN) according to ICAO specifications in en-route airspace and in terminal airspace where considered feasible.

8.6. Other investments

From 2015 onwards focus on internal efficiency and investments in tools and applications will increase in order to enable joint service production in areas like Flight Planning/Pre-flight Bulletin services (FPL/PIB), NOTAM –services (temporary changes to published information), Aeronautical Information Management (AIM) and Air Navigation training for both operational and technical personnel.

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 an extensive project running throughout 2015 – 2017.

9. HIGH LEVEL ROADMAP

A high level roadmap has been developed to illustrate the sequence of prioritized strategic activities, see table below.

Strategic activity	2015	2016	2017	2018	2019
Safety BDA					
SMS Harmonisation					
SMS Integration					
Operational stream					
FRA phase 1					
FRA phase 2					
ATS Optimisation					
Ops rules and procedures					
Technical stream					
CNS BDA					
Datalink*					
Supporting & Enabling activities					
AIS/AIM BDA					
FPL/Briefing					
AIM/NOTAM					
ADQ compliant systems					
Training BDA					
ATCO Initial TRG/Unit Trg/TRM					

* The maturity of technical solutions may postpone the datalink implementation even beyond 2019.