LUFTFARTSVERKET	NUAC Programme	NAVIAIR

NUAC Programme

Executive Summary

Definition Phase Final Report

The feasibility of a joint enterprise for the carrying out of Air Navigation Services in Danish and Swedish airspace

OCTOBER 2006

Third Draft

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INTRODUCTION

In accordance with the given Terms of Reference[1], the NUAC Programme has analysed three possible scenarios[2] for a closer cooperation between LFV/ANS and Naviair in order for the companies to lower their costs and to meet the pressure for change in compliance with the Single European Sky (SES) legislation and the national strategic directions as outlined in Denmark and Sweden respectively[3].

These analyses have determined that there are substantial and growing incentives for LFV/ANS and Naviair to seek a closer and more formalised cooperation - in other words, "to do nothing is not an option". Such cooperation can in the right form meet the strategic rationale behind the NUAC Programme, give higher cost-effectiveness and trough harmonisation and standardisation potentially enhance flight safety - as reflected in the "NUAC Programme – Definition Phase Final Report" and summed up in this Executive summary.

A number of initiatives throughout the European airspace are currently under way, however the NUAC programme has a substantial first mover advantage and experience that will allow for a cooperation between LFV/ANS and Naviair where the risk/return relationship of a closer cooperation or even a potential merger makes up for a strong Case for Change. This is shown both in terms of the financial benefits and the non-financial benefits and indications of a positive socio-economic effect.

In summary of the examined scenarios, both the Merger Scenario and the Alliance Scenario show a viable risk return relationship. However, when assessing both financial and non-financial benefits the Merger Scenario gives the best risk return relationship even though the risks associated with a merger of the relevant parts of LFV/ANS and Naviair are deemed more comprehensive than in the establishing of an Alliance Company. Furthermore the analysis shows that the major part of the proposed cost savings both in the Merger Scenario and the Alliance Scenario is generated through reduction in the need for staff. These reductions can be accommodated through natural attrition and normal staff turnover.

In relation to alignment towards Single European Sky legislation it is equally evident that a merger will yield a form of cooperation that will accommodate the Single European Sky as well as Danish and Swedish current transport policies and strategies to a higher degree than both the original NUAC/SKAANE Scenario and an Alliance Scenario based on shared services.

[1] For details see appendix 10 to the main report
[2] In this report, a strategic Scenario is defined as a plausible description of how the future cooperation may develop, based on a coherent and internally consistent set of assumptions about key relationships, driving forces of the ATM industry and the specific characteristics of LFV/ANS and Naviair. For details see figure 1 in this summary
[3] As stated in government publications "Dansk Luftfart 2015 – muligheder og udfordringer" and "Moderna transporter - Transportpolitisk proposition 2006".

1 Overall aim for the NUAC Programme

As stated in the Terms of Reference for the NUAC Programme, the overall aim for the programme is to ensure cost reduction for the provision of air navigation service in Denmark and Sweden in alignment with both the Single European Sky (SES) legislation and the respective national strategic directions and to enable the necessary integration between the two companies LFV/ANS and Naviair and their employees.

To achieve this, the NUAC Programme Definition Phase aims at enabling the decision-making regarding the strategic direction for a closer cooperation between LFV/ANS and Naviair. The aim is to conclude the work in the definition phase by 2006 and as an outcome of the definition phase have a solid platform for decision-making regarding future development of the NUAC Programme.

1.1 Scope for the NUAC Programme – Definition Phase

The main objective for the "NUAC Programme - Definition Phase" was to develop a robust platform for decision-making consisting of a consolidated Case for Change including Mission, Vision & Strategic Rationale, Business Case, Integration Strategy, Stakeholder Care Programme, HR and Risk Management Plan.

The Terms of Reference describe the responsibilities, mandates and deliverables for the NUAC Programme Management Team during the Definition Phase and ensure the description of the necessary work to be done in order to ensure the robust platform regarding the development of the NUAC programme.

During the NUAC Definition Phase, three strategic scenarios for cooperation between LFV/ANS and Naviair have been evaluated. The scenarios have been defined by the NUAC Programme in collaboration with labour unions and the management of Naviair and LFV/ANS. The scenarios differentiate on *how* the organisations should cooperate, and *which* functional areas and business processes should be included in the cooperation. The scope of the NUAC Programme includes all Danish and Swedish airspace, except for the Aerodrome Control Services and coherent specific military services.

The three scenarios – which are defined in figure 1 – are:

- **Merger Scenario**
- **NUAC/SKAANE scenario**[4]
- **Alliance scenario**[5]

[4] The NUAC/SKAANE Scenario with the original prerequisites is both analysed and used as a form of reference scenario

[5] "The Alliance Scenario" is in some appendices to the main report referred to as "The Virtual Scenario"

The evaluation contains four different key areas, which together establish a balanced, unbiased evaluation and understanding of the scenarios.

- **Business Case** – an assessment of the financial and non-financial costs and benefits related to the cooperation described in the three Scenarios
- **Business Model** – an analysis of how the cooperation will function. More specifically the product & services, processes, sourcing, organisation, ownership and legal entity
- **Integration Strategy** – an analysis of what, when and how to integrate the cooperation described in the Scenario
- **HR Aspects and Social Dialogue** – which key employee implications and potential risks are associated with implementing the Scenario.

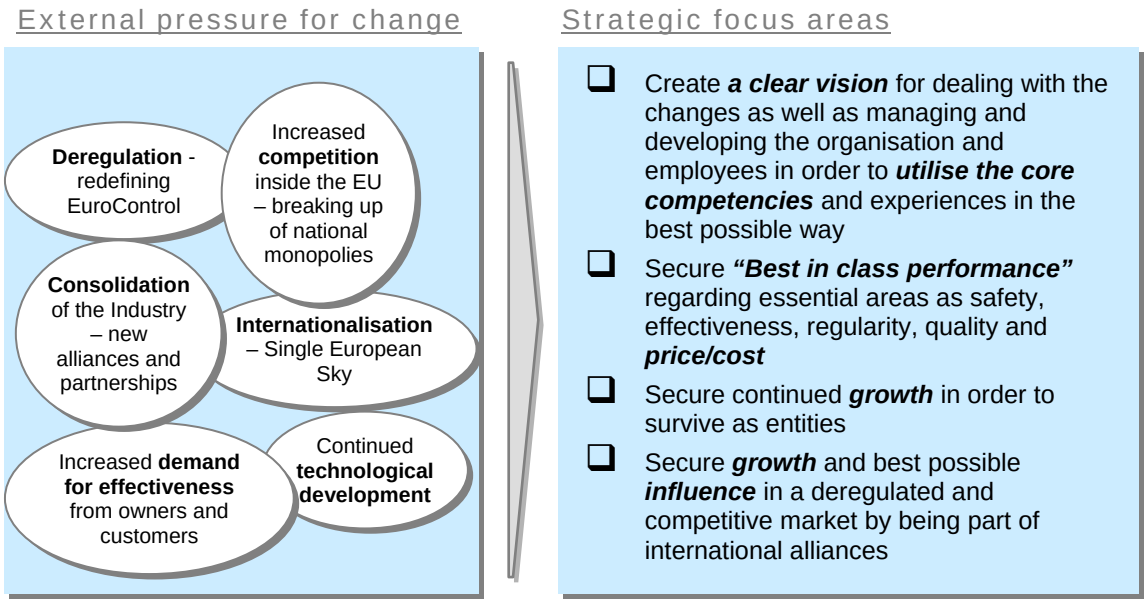
Figure 1 Definition Phase Scenarios

	Merger	NUAC/SKAANE	Alliance
Descripion	Merger of the two organizations LFV/ANS and Naviair (except for aerodrome control service and the ownership of infrastructure) into one organization with responsibility for the provision of Air Traffic Service within Danish and Swedish airspace in a total integrated environment.	Implementation of the original NUAC & SKAANE concepts as laid down by the original projects with LFV/ANS and Naviair as co-owners of a NUAC company carrying out the service provision in a common Functional Airspace Block above FL 285, and responsibility for provision of ATS in the SKAANE region delegated to Naviair but otherwise remaining as independent organizations.	As independent organisations in a closer corporation LFV/ANS and Naviair are establishing a co-owned Alliance Company for the carrying out of certain support functions.
Rationales	• To investigate the feasibility and effects of the most comprehensive Scenario for cooperation in order to ensure highest possible degree of cost-effectiveness/cost reduction and strategic alignment with Single European Sky regulations as well as the national strategic direction outlined in Denmark and Sweden respectively as stated in government publications “Dansk Luftfart 2015 – muligheder og udfordringer” and “Moderna transporter - transportpolitisk proposition 2006” • To show clear and formalised lines of command in a merged company and entail management of all core processes and related support processes • To give the answer regarding to what extent the Strategic Rationales for the NUAC Programme could be met.	• To investigate more thoroughly the effects and possibilities regarding an implementation of the original NUAC and SKAANE projects in the light of the development in the European ATM community including the Single European Sky regulations and the respective national strategies regarding Air Navigation Services • To get the answer whether the Business Case is good enough to meet the demands for cost-effectiveness/cost reduction • To give the answer regarding to what extent the Strategic Rationales for the NUAC Programme could be met.	• To investigate the feasibility and effects of a less comprehensive but still beneficial Scenario. The Scenario should to the largest extent possible be in alignment with Single European Sky regulations and the national strategic directions outlined in Denmark and Sweden respectively as stated in government publications “Dansk Luftfart 2015 – muligheder og udfordringer” and “Moderna transporter - transportpolitisk proposition 2006” • To find out to what extent the cost-effectiveness/cost reductions could be reached without influencing the core business (the actual provision of Air Navigation Services) within LFV/ANS and Naviair and without merging the two companies • To give the answer regarding to what extent the Strategic Rationales for the NUAC Programme could be met.

2 Strategic framework

As outlined in this paragraph there are significant incentives for LFV/ANS and Naviair to pursue an increased cooperation in perspective of the profound changes to the organisation of the European airspace and to the organisation of European Air Navigation Service.

Figure 2 Strategic focus areas



LFV/ANS and Naviair have deemed it necessary to meet these challenges and opportunities proactively and have decided to show due diligence by creating a clear vision for the future.

Thus the NUAC Programme was tasked with establishing a robust platform for decision making showing both the potential for lowering costs for the provision of Air Navigation Services in Danish and Swedish airspace and the possibilities for future development of the programme, all in order to meet the increased demand for cost effectiveness and to ensure the alignment with and fulfilment of:

- The Single European Sky legislation
- The national strategic directions outlined in Denmark and Sweden respectively as stated in the government publications "Dansk Luftfart 2015 – muligheder og udfordringer" and "Moderna transporter - Transportpolitisk proposition 2006".
- The best utilisation of Danish and Swedish airspace regardless of national boundaries. Thus also ensuring a minimum of emissions.

But also to:

- Secure both survival and future influence by growth
- Prepare for the increased liberalisation and/or competition within the European Air Traffic Management industry
- Ensure the possibilities of being part of the future European Air Traffic Management scene as Air Navigation Service Providers.

As a part of the task the NUAC Programme formulated a draft Mission and Vision with supporting Strategic Rationales as the LFV/ANS and Naviair answer to the challenges and opportunities.

The mission and vision have been presented to and discussed with the key stakeholders, who have been given the opportunity to comment on the proposal. The mission and vision together with the drivers to achieve the vision are the result of this process.

Figure 3 Mission and Vision for the future cooperation between LFV/ANS and Naviair in the NUAC framework

Mission:

In close dialogue with our customers and through dedicated and competent employees, "NUAC" delivers and develops safe, cost effective and flexible Air Navigation Services

Vision:

By 2015 the best service provider based on our commitment to serving our customers' needs

We will achieve our vision by:

- Being recognised by our customers for our dedication to safety, quality, cost effectiveness and a true sense of pride for our business and services
- Being established as the most attractive partner to service providers in the European airspace
- Being an attractive workplace with a constant focus on developing our employees, their skills and competences
- Continuously strengthening our competitiveness by a constant focus on improvement and by developing our performance trough harmonisation and standardisation

2.1 The strategic rationales

In order to fulfil the task for the Programme and to support the Mission and Vision, a number of key strategic rationales and objectives for the NUAC cooperation have been established as described in Figure 4.

The strategic rationales are the arguments for establishing a closer cooperation between LFV/ANS and Naviair and have been identified as the key areas where the Programme should provide additional value in comparison with the current situation.

Figure 4. Focus areas for the strategic rationales for NUAC[6]

Strategic Rationale		Description
INTERNAL	**Cost effectiveness**	Cost efficiency refers to the balance of effectively delivering high quality Air Navigation Services at the lowest possible costs without compromising flight safety.
	Operational flexibility	Operational flexibility entails the ability of the Air Navigation Service provider to respond to changes in the strategic environment of the service provider. This includes the ability to be able to leverage and share resources in the most optimum way across business processes and respond to changes in services and demand in the most efficient manner.
	Alignment of business model	Alignment of Business Model is the ability to achieve a strong link between the actual Business Model and the Strategy chosen to respond to the changes in the ATM industry as such. Currently, the majority of Air Navigation Service providers rely on a Business Model that is centered on air traffic control. However, in order to effectively meet the strategic challenges outlined, the Business Model needs to reflect these as well as serve as a sustainable path to implementing the chosen strategy.
	Strategic readiness	Strategic readiness entails the ability of an organisation to adapt and respond to changes in the overall value chain on which revenue is made or derived. It entails being able to act swiftly and adapt the overall strategy correspondingly.
	Attraction and bargaining power	Attractiveness and bargaining power imply how attractive the established entity or cooperation will be towards new partners as well as towards customers and to what extent this will lead to increased bargaining power.
EXTERNAL	**Flight safety**	Flight safety is the overarching measure within Air Traffic Control and aviation in general. It is paramount as a strategic rationale for the NUAC Programme that flight safety must not be compromised, and that the aim for any cooperation efforts should be to maintain or increase today's high level of flight safety by closer cooperation even with higher numbers of operations.
	Flight Efficiency	Flight efficiency has significant impact for both airline carriers as well as broader socio-economic and environmental effects. Closer cooperation in airspace design as well as in route planning has the potential of reducing the cost for fuel and the en-route charges for carriers as well as reducing emissions and thus environmental impact.
	Customer orientation	The majority of a service provider's revenue depends on the ability to deliver Air Navigation Services and interacting effectively with the key customers. As customers become increasingly focused on the service vs. cost equation, the ability to focus services, customer-facing business processes and systems towards the customers is becoming increasingly important.
	Political and social effects	Changes in airspace design and route planning along with closer cooperation on administrative functions within the Air Navigation Service providers may potentially have a significant impact on the overall societal benefits as such. This includes: Macro-economic benefits, environmental-economic benefits and political and infrastructure/transportation related benefits.
	Environment	Reducing emissions from aviation through better route planning and direct flights as well as Optimising take-off and landing profiles.

[6] Refer to main report for the detailed rationales

2.2 The initiatives

The potential cost savings in the Business Case derives from 17 initiatives[7].These initiatives are then again derived from the strategic rationales and are divided into three main areas:

1. Optimisation of the utilisation of employees, i.e. Full Time Equivalents (FTE) through elimination of duplicate functions, harmonisation and standardisation of processes and functions
2. Optimisation of procurement and utilisation of systems through standardisation and consolidation of systems and increased bargaining power
3. Overhead reductions, as a consequence of strong focus on the core business – which is provision of Air Navigation Services – thus decreasing the need for future staffing.

[7] Refer to main report and/or “Appendix 2: Business Case – Initiatives” for a detailed description of the individual initiatives in each of the three scenarios.

3 The Business Case

The total lasting annual savings in the scenarios from year 2020 and onwards are:

- € 23,1 mill. in the Merger Scenario
- € -0,9 mill. in the NUAC/SKAANE Scenario
- € 9,2 mill. in the Alliance Scenario.

Figure 5. Conclusions from the Business Case

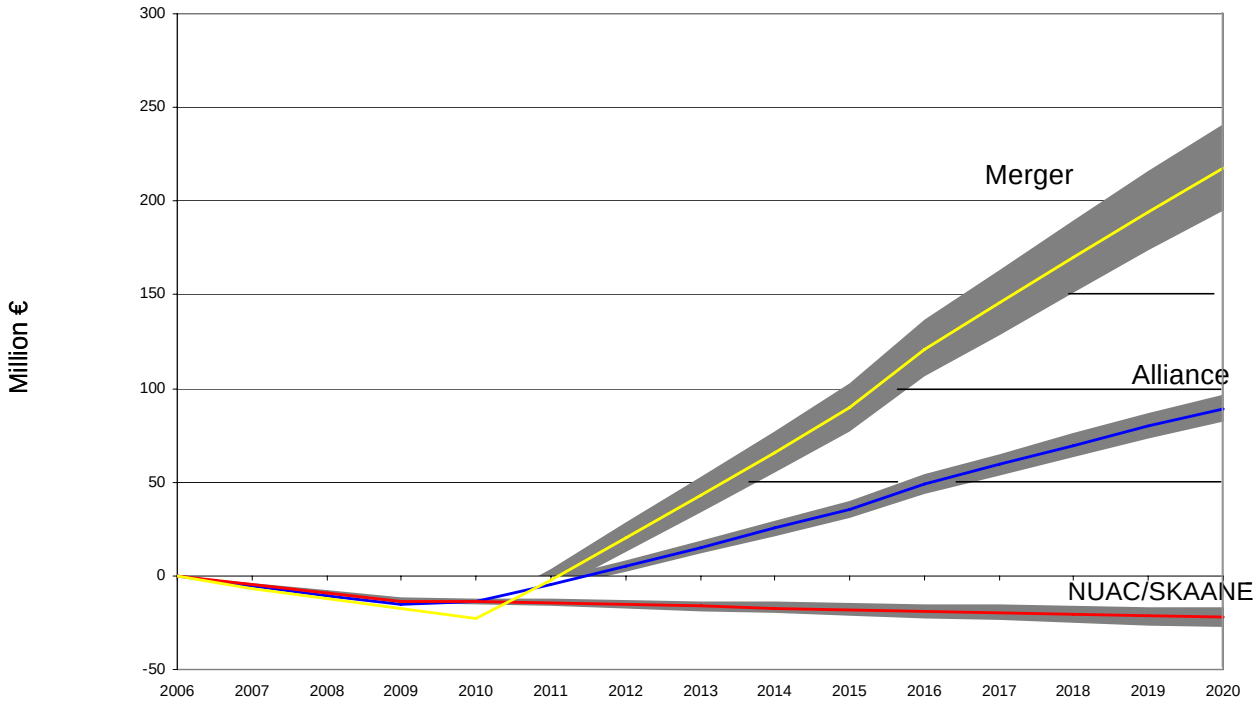
	Merger	NUAC/SKAANE	Alliance
Annual savings (million)	€ 23,1	-	€ 9,2
NPV (million)	€ 131,7	-	€ 52,7
Payback	4 years	-	4,5 years
Staff reductions	Natural attrition, staff turn over, and outsourcing	Natural attrition	Natural attrition, staff turn over, and outsourcing
Integration costs (million)	€ 30-35	€ 13 - 16	€ 17 - 20
Strategic rationales	High compliance	Medium compliance	Medium compliance
Complexity	High	Medium	Medium/High
Implementation timeframes	4 years	3 years	2,5 years

As illustrated in Figure 5, the annual savings potential of the Merger Scenario is substantially higher than in the Alliance Scenario, while there i no annual savings potential in the NUAC/SKAANE Scenario.

As shown in Figure 6, over the time period 2008 – 2020

- the Merger scenario shows an accumulated cash flow saving of € 217,4 million
- the Alliance scenario accumulates cash flow savings of € 89,4 million
- the NUAC/SKÅNE accumulates a negative cash flow of € 22,4 million.

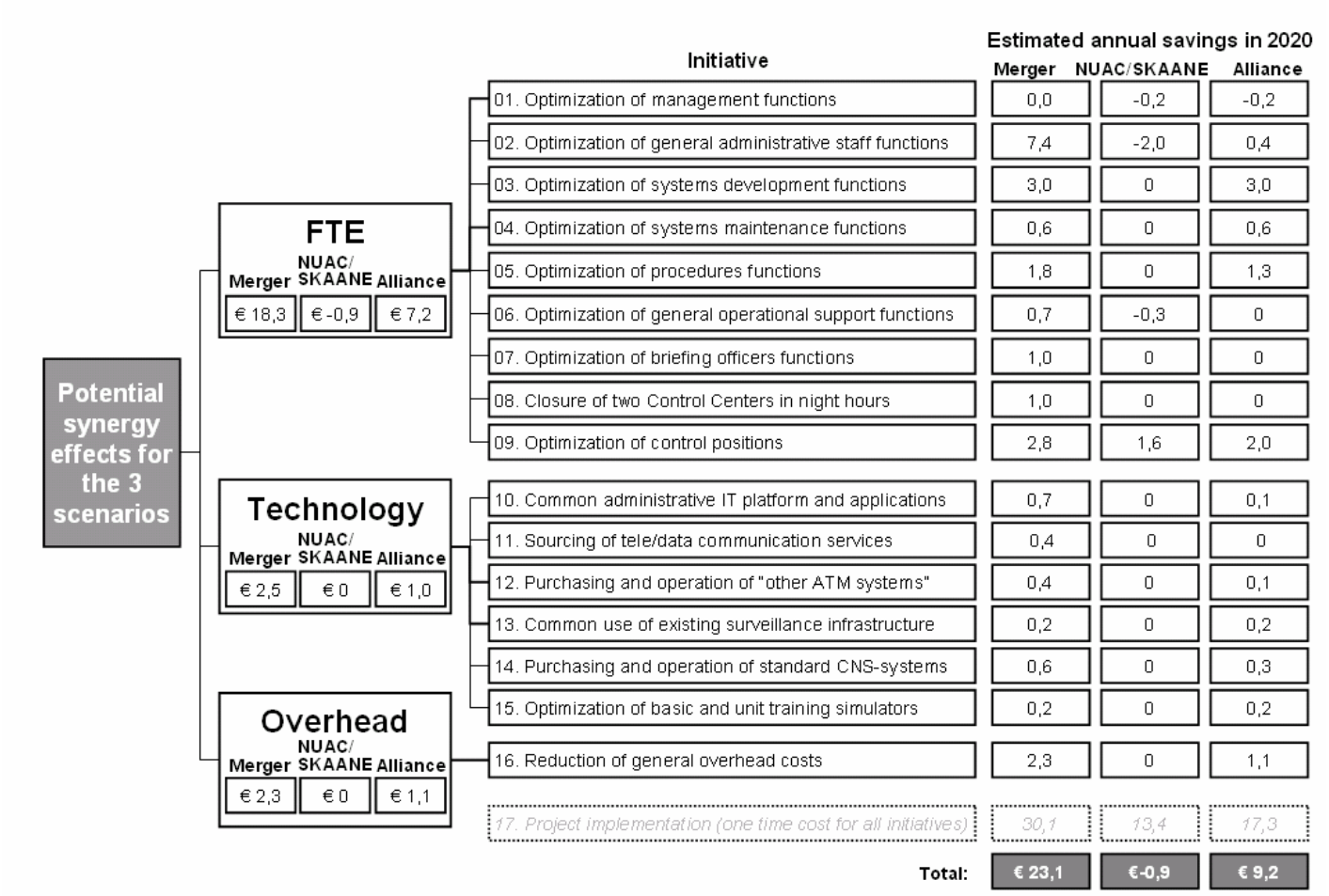
Figure 6 Cumulative cash flow and sensitivity per scenario



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Merger	0,0	-7,0	-12,5	-17,8	-23,0	-2,3	20,3	43,0	65,8	89,6	121,1	145,5	169,9	194,3	217,4
NUAC/ SKAANE	0,0	-4,5	-9,0	-13,4	-13,6	-14,5	-15,4	-16,3	-17,2	-18,0	-18,9	-19,8	-20,7	-21,5	-22,4
Alliance	0,0	-5,7	-10,5	-15,1	-13,9	-4,5	5,4	15,4	25,4	35,4	49,3	59,5	69,8	80,1	89,4

As indicated in Figure 7, the annual cost savings in the Merger Scenario are € 18,3 million derived from ”FTE- initiatives” corresponding to 79% of total cost savings in 2020. These savings are a consequence of the reduction in the need for resources in total 359 FTE of which 186 are deemed redundant and 173 derive from the outsourcing of functions.

Figure 7 Estimated Annual Savings in 2020 (million Euro)



Initiative	Estimated annual savings in 2020 Merger	NUAC/SKAANE	Alliance
01. Optimization of management functions	0,0	-0,2	-0,2
02. Optimization of general administrative staff functions	7,4	-2,0	0,4
03. Optimization of systems development functions	3,0	0	3,0
04. Optimization of systems maintenance functions	0,6	0	0,6
05. Optimization of procedures functions	1,8	0	1,3
06. Optimization of general operational support functions	0,7	-0,3	0
07. Optimization of briefing officers functions	1,0	0	0
08. Closure of two Control Centers in night hours	1,0	0	0
09. Optimization of control positions	2,8	1,6	2,0
10. Common administrative IT platform and applications	0,7	0	0,1
11. Sourcing of tele/data communication services	0,4	0	0
12. Purchasing and operation of "other ATM systems"	0,4	0	0,1
13. Common use of existing surveillance infrastructure	0,2	0	0,2
14. Purchasing and operation of standard CNS-systems	0,6	0	0,3
15. Optimization of basic and unit training simulators	0,2	0	0,2
16. Reduction of general overhead costs	2,3	0	1,1
17. Project implementation (one time cost for all initiatives)	*30,1*	*13,4*	*17,3*
Total:	**€ 23,1**	**€-0,9**	**€ 9,2**

The savings potential in the Alliance Scenario is derived from “FTE-initiatives” (€ 7,2 million) corresponding to 78% of the total cost savings in 2020. These savings are, as in the Merger scenario, a consequence of the reduction in the need for resources in total 230 FTE of which 86 are deemed redundant and 144 derive from the outsourcing of functions.

Savings related to payroll costs are primarily realised through harmonisation and standardisation of current processes and exclusion of duplicate functions etc.

The difference in potential savings related to the “FTE”-initiatives between the Merger and Alliance Scenario is primarily based on the fact that LFV/ANS and Naviair in the Alliance Scenario will remain as two separate organisations – hence both organisations will have

to obtain certification and designation, and also maintain the necessary administrative staff functions within the respective organisations.

In addition, the potential savings in the Alliance Scenario are reduced due to the assumption that the Alliance Company will not include the actual carrying out of Air Navigation Services as these functions will remain as part of the retained organisations LFV/ANS and Naviair.

“Technology”-related initiatives constitute annual cost savings of € 2,5 million, corresponding to 11% of the cost savings in the Merger Scenario. In comparison, annual cost savings within “Technology” in the Alliance Scenario constitute a total of €1,0 million, corresponding to 11% of the cost savings in the Alliance Scenario.

Cost savings related to technology initiatives are mainly realised through standardisation, harmonisation and consolidation of existing system platforms etc., combined with reductions in procurement costs, due to increased bargaining power, reduced adjustment and implementation costs etc.

The estimated savings related to the technology initiatives are lower in the Alliance Scenario – compared to the Merger Scenario – due to a lower degree of standardisation and consolidation of systems and infrastructure. This is primarily due to the fact that LFV/ANS and Naviair are assumed to remain as separate organisations – hence both organisations will have to obtain certification and designation.

In addition, overhead costs are reduced due to a decrease in the future staffing requirement. In the Merger Scenario, overhead costs are reduced by a total of € 2,3 million, due to a reduction of 186 and outsourcing of 173 FTE, compared to € 1,1 million in the Alliance Scenario, with a reduction of 86 and outsourcing of 144 FTE.

The Merger Scenario reaches break-even in 2011, based on the fact that the majority of the initiatives have financial effect starting from 2010, while the Alliance Scenario also has a break-even point in 2011, but has relatively lower implementation costs compared to the benefits realised in the initiatives.

The natural attrition and staff turnover are in pure numbers covering the calculated FTE reductions in all three scenarios. However, the level of which the total FTE reductions may be reduced through natural attrition and general staff turnover is subject to some uncertainty due to the fact that detailed analyses on individual FTE levels need to be conducted, i.e. specific staff groups and competencies must be investigated in the next phase of the programme in order to determine the exact number and organisational placement of the reductions.

Figure 8 The reductions can be absorbed through natural attrition and staff turnover in all scenarios

	Baseline			Merger		NUAC/SKAANE		Alliance		Staff turnover and Natural attrition
	Naviair	LFV/ANS	Total	Outsourcing	Reduction	Outsourcing	Reduction	Outsourcing	Reduction	
Initiative 1	5	7	12	0	0		-2	0	-2	
Initiative 2	97	95	192	29	44		-31	0	7	
Initiative 3	57	22	79	0	44		0	0	44	
Initiative 4	85	75	160	144	-4		0	144	-4	
Initiative 5	21	77	98		23		0	0	16	
Initiative 6	13	15	28	0	13		-6	0	0	
Initiative 7	12	31	43	0	18		0	0	0	
Initiative 8	9	19	28	0	13		0	0	0	
Initiative 9	193	380	573	0	35		20	0	25	
	492	**721**	**1213**	**173**	**186**	**0**	**-19**	**144**	**86**	**253**

3.1 Integration costs

The integration costs cover all internal and external costs associated with the implementation of the respective scenarios. Compensation to discharged Senior Management and Management staff are not included in the implementation cost, as these costs are covered in the respective initiatives as negative benefits.

The integration costs of the three scenarios are:

- Merger: € 30 - 35 million in a four years implementation period
- NUAC/SKAANE[8]: € 13 - 16 million in a three years implementation period
- Alliance: € 17 - 20 million in a 2½ years implementation period.

The differences in the integration cost and time reflects the different scope of the three scenarios.

3.2 Non-financial and qualitative effects

An assessment of the internal and external non-financial and qualitative effects – reflected by the strategic rationales in Figure 4 – reveals that the Merger Scenario has the relatively highest score of the three scenarios, Alliance Scenario second highest, and NUAC/SKAANE the lowest score.

[8] NUAC/SKAANE Integration costs described in the Feasibility Phase Final Report from January 2004 are estimated to 12.870.743 mill. Euro, which today equal 13.391.000 (3.528.000 + 9.863.000) mill. Euro using an annual inflation rate of 2%

As indicated in Figure 9, the Merger Scenario achieves the highest relative score among the three scenarios within all the internal strategic drivers.

Figure 9 Non-financial and qualitative effects

Strategic Rationale		Merger	NUAC/ SKAANE	Virtual
Internal drivers	Cost effectiveness	High	Low	Medium
	Operational flexibility	High	Low	Medium
	Alignment of business model	High	Medium	Medium
	Strategic readiness	High	Low	Low
	Attraction and bargaining power	High	Low	Medium
External drivers	Potential safety improvement	High	High	High
	Flight efficiency	High	High	High
	Customer orientation	High	Medium	Medium
	Political and social effects	High	Medium	Medium
	Environment*	Medium/High	Medium/High	Medium/High

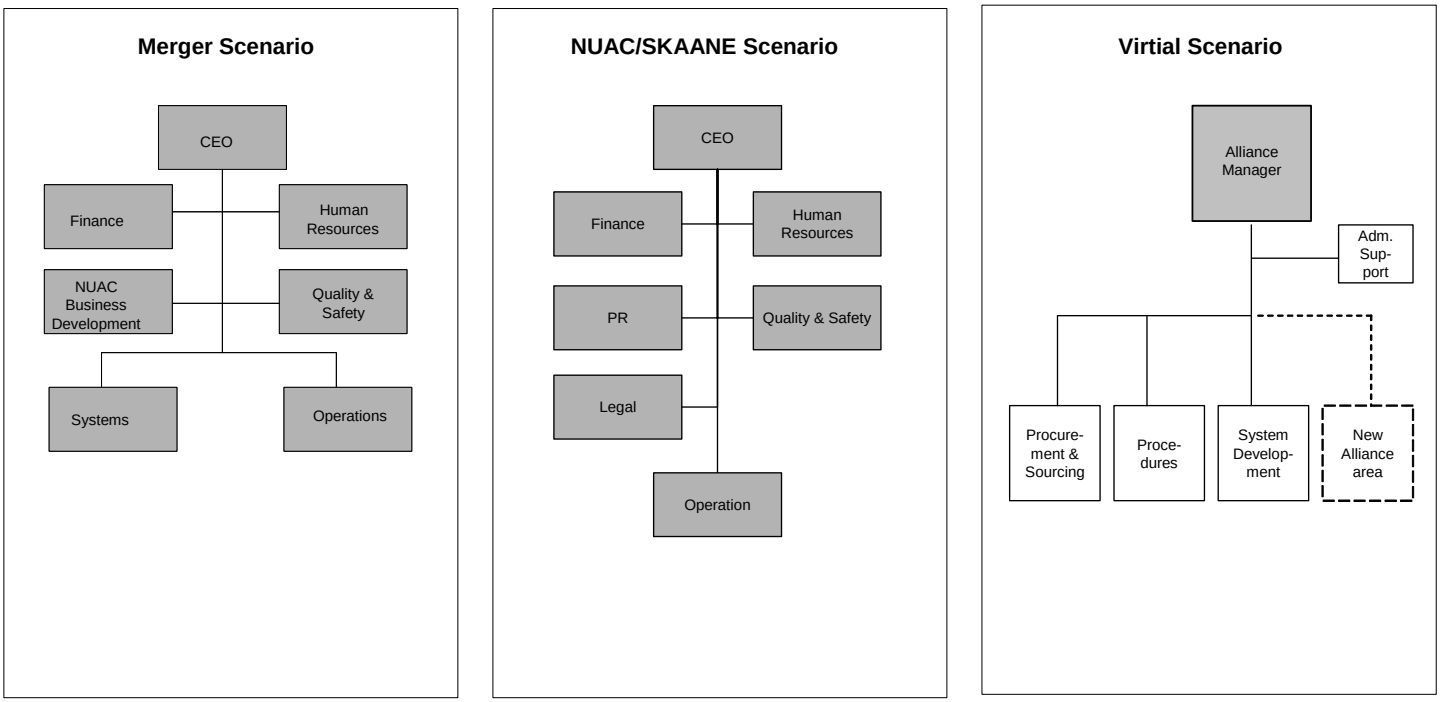
*** Due to the fact that the socio-economics analyses is on-going this compliance is based only on preliminary findings from the fast time simulation**

With regard to the Alliance Scenario, it should be noted that the Alliance Company will not encompass the actual carrying out of Air Navigation Services as these functions will remain largely intact within LFV/ANS and Naviair.

4 Business Models

The business models defined for the three scenarios generate the simplified high level pictures of the company structures shown below:

Figure 10 Company structure for each scenario



Merger Scenario
A merger of all LFV/ANS and Naviair activities (except for Aerodrome Control Services and management on national ownership of the infrastructure) into a joint company focussing on the core business - the provision of Air Navigation Services - and with extensive outsourcing of support functions. The major outcomes are:

- A new aggregated process map has been developed, including core, support and management processes
- A number of processes have been targeted for outsourcing
- A new organisation has been developed to manage a cross-border service provision. The organisation is split into one strategic level, focusing on developing, controlling and managing the service provision, and one operative level, focusing on delivering the products and services provided by the NUAC company
- A legal structure has been developed where Naviair and LFV own 50% each of the NUAC company
- A business and operating model that is designed to accommodate and facilitate easy inclusion of potential new partners in the NUAC company.

NUAC/SKAANE Scenario
Retaining the LFV/ANS and Naviair organisations and establishing a joint venture company for the provision of Air Navigation Services of the upper airspace in Sweden and Denmark and the management of approach and enroute services in lower parts of southern Sweden by Naviair (The original NUAC and SKAANE projects). The major outcomes are:

- A new legal entity is established for the provision of Area Control Services above 28.500 ft
- Some of the current processes in LFV/ANS and Naviair are utilised in the new company
- The new company will utilise administrative and operational support from LFV/ANS and Naviair to a large extent
- A legal structure has been developed where Naviair and LFV owns 50% each of the NUAC company. The legal entity will be a Swedish limited company.

Alliance Scenario
An alliance where certain non operational support functions are outsourced to a shared service centre in the form of a joint Alliance Company. The major outcomes are:

- LFV/ANS and Naviair will establish an alliance support/control function within each organisation for managing the alliance work
- A governance framework is established in order to manage possible new entrants and establishing and conducting new projects
- LFV/ANS and Naviair will transfer support activities, development and procurement and suitable projects into the alliance
- The carrying out of Air Navigation Services will not be transferred into the alliance.

The Merger Scenario implies significant changes compared to the current business and operating models of LFV/ANS and Naviair. This includes the need for designation and certification of NUAC as well as significant changes in the operations, which in the model are based on lean operating principals centred around the core business, the carrying out of Air Navigation Services.

From an ownership and establishment perspective the most apparent solution is likely to be a limited company in the form of a Danish A/S, a Swedish AB or a European SE-company (Societas European) with LFV/ANS and Naviair having equal ownership of the company.

From a governance and management perspective the key advantages of the business model in the Merger Scenario are clear and formalised lines of command as well as clear and coherent management of all core processes and related support processes. This entails consistency between strategy, operations and the management of NUAC.

The NUAC/SKAANE Scenario will have some impact on the actual business model of Naviair and LFV/ANS since it is based on moving the delivery of core processes between Area Control Centres. The Area Control above 28,500 feet will be operated from one single centre (Malmö) in a limited company registered in Sweden. The air traffic below 28.500 ft will be handled by Copenhagen and Stockholm.

The governance and management of the NUAC/SKAANE Scenario will be complex as the Area Control services in the airspace above 28,500 feet will be run by one company, owned mutually by LFV/ANS and Naviair, but with a separate management. The business will not insource administrative and IS/IT services from LFV/ANS and Naviair.

The Alliance Scenario is assumed to have minor effect on the current business model of LFV/ANS and Naviair, since it is based on the establishment of a more formalised cooperation around shared services with minor changes to the operations of the current services.

In terms of liability the Alliance Company will have to be further analysed. This as a consequence of the Alliance Company not entailing the actual carrying out of Air Navigation Services.

The governance and management of the Alliance Company will introduce additional complexity as this is likely to introduce a new layer of management in addition to the management of LFV/ANS and Naviair as of today. Particularly since the processes that will be transferred to the alliance/shared service company will only include parts of some of the current processes.

4.1 Retained organisations

As the Aerodrome Control Services are out of scope for the NUAC Programme, and as the ownership of the infrastructure will be retained by LFV/ANS and Naviair respectively, there will be a need for a retained organisation in both Sweden and Denmark. A full analysis of the organisation of the retained business is not provided by the NUAC Programme, but an indication of needed size and areas of responsibilities is provided in the report and summed up below:

- **Merger Scenario:** The retained organisations in Naviair and LFV/ANS respectively will initially be structured into two areas and a management team. The management team will consist of a CEO and a Quality & Safety manager. The two business units are Aerodrome Control Service management and infrastructure management.

- **NUAC/SKAANE Scenario:** The effects on the retained organisations will be minor in the NUAC/SKAANE Scenario. In essence, Naviair will have a number of Swedish ATCOs working in Copenhagen, and LFV/ANS will have a number of Danish ATCOs working in Malmoe. This in accordance with the prerequisites for the original projects.

- **Alliance Scenario:** The effects on the retained organisations are initially minor but will increase over time as more areas of cooperation are initiated within the alliance.

4.2 Ownership, legal entity & Value-added tax (VAT)

The ownership of any legal entity with regard to all three scenarios is proposed to be an equal ownership by LFV and Naviair where each part has a 50 % share.

In order to examine the appropriate legal entity for the Merger and Alliance Scenarios a brief investigation has been conducted[9].

The main findings from the report are that the most appropriate legal entity for the Merger and Alliance Scenarios could be a limited company in the form of a Danish A/S, a Swedish AB or a European SE-company (Societas Europea). For the original NUAC/SKAANE scenario a limited company in the form of a Swedish AB was chosen for the NUAC Company.

With regard to company form the differences vary only in a minor degree. Thus there are no major advantages or disadvantages by choosing any of the three mentioned forms.

A European SE-company could have an advantage with regard to new entrants as it may be easier to attract new entrants to a European limited company compared to a Danish or Swedish limited company.

With regard to VAT, value-added taxes, the situation will not in any major way be affected by what kind of limited company (A/S, AB or European SE-company) that is finally chosen, nor will the location in Denmark or Sweden have any major effect for taxes as such.

[9] See Appendix 5 to Final Report: Consideration regarding company form and Value-Added Tax

5 HR Aspects

In analysing the HR aspects regarding the three scenarios, a bottom-up approach has been conducted, meaning that the labour unions and employee representatives from the HR functions in LFV/ANS and Naviair have been involved in the analysis and risk evaluation of HR aspects during the whole definition phase.

The employees are not obliged to accept essential changes in their working conditions. The interpretation of whether a change is essential depends on the specific change that will take place in each specific case. It is, however, stated that moving workplace from one country to another is an essential change. The working environment may be affected in all three scenarios.

Differences between the three scenarios are mainly a consequence of different employee groups being part of the change process. In the Merger Scenario, this may be relevant for all employee groups. In the NUAC/SKAANE Scenario, it is primarily the operational staff and direct support staff in the operational core business.

In the Alliance Scenario, the changes are not relevant for the employees carrying out the Air Navigation Services, i.e. operational Air Traffic Controllers and some direct support staff in the existing organisations. The changes could however be relevant for all other employee groups.

The results of the analysis of HR aspects indicate the necessity to continue the Social Dialogue with the relevant parts and early in the Development and Integration Phase to continue the close involvement of the trade unions and HR function from the Definition Phase. In addition to decide early on key issues (such as geographical positions of a future company Head Quarters, support staff, operational staff etc).

The analysis carried out indicates that the Merger Scenario and the Alliance Scenario is somewhat more complex than the NUAC/SKAANE Scenario with regard to future employment.

NUAC will in any form be dependent on professional and skilled staff at all levels to fulfil the vision to become and remain the best service provider. The NUAC vision to be an attractive workplace must be supported by a solid system for development of the employee's skills and competences in addition to the basic competencies needed for the daily business as:

- NUACs ambition to be the most attractive partner to ATM service providers in Europe generates an expectation that staff representing NUAC is well suited to meet and cooperate with professionalism and with good knowledge of other service providers at both management and expert level also giving a potential for offering consultancy services to external parties.

- NUAC will operate in an international environment and, besides good language skills, knowledge of the basic international conditions for Air Traffic Management and Aviation Industry, it will be necessary for staff members to participate in various international cooperation activities.

- NUAC must be attractive for people from other ATM service providers and Aviation organisations implying a potential for added competence and knowledge from other areas.

- NUAC must provide good and attractive job conditions for the employees.

6 Integration Strategy

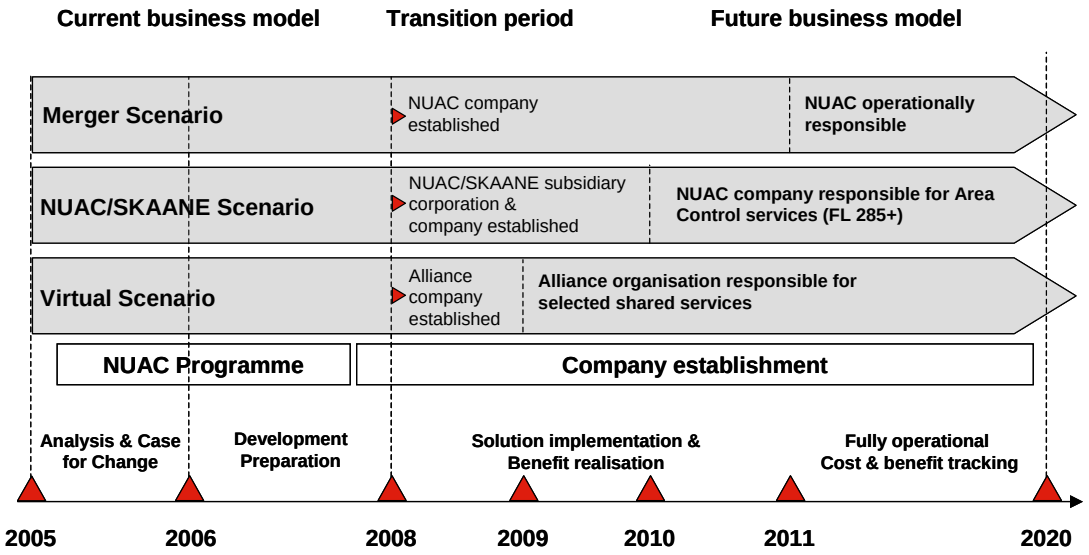
Under all analysed scenarios a relatively rapid integration process has been determined as the most efficient approach towards mitigating potential risks involved in a change from the current situation.

The general principle behind the integration is a strong focus on designing the actual integration process around the benefit areas rather than developing more generic functional teams. This approach ensures a strong focus on ensuring that the actual benefits can be realised and that the potential outlined in the business case is constantly tracked and followed up upon.

In addition the approach entails a strong focus on HR related aspects and focus on the staff within LFV/ANS and Naviair that will be involved in the process. This includes having key staff within the two organisations involved in the process rather than strong reliance on third party assistance.

All of the analysed scenarios comprise significant opportunities for current and future employees to develop, strengthen and to some extent broaden their competencies. However the effect in the NUAC/SKAANE Scenario and the Alliance Scenario is more limited whereas the Merger Scenario will provide opportunities for all employees to develop competences and skills that will enable greater individual flexibility and opportunities. This is well in line with the current policies of the Swedish and Danish public administration of a more flexible and well educated work force.

Figure 11 Integration plans for the three scenarios from 2006 to 2011



Below is presented the key risk complexities associated with implementation of the three scenarios:

Key integration risks and complexities in the **Merger Scenario** are:

- Temporary decrease in motivation and productivity among involved personnel, until their personal situations are communicated in terms of new tasks and responsibilities, physical belonging, and other key working conditions
- Of the three scenarios, the merger integration time span is the longest. The Merger Scenario also holds the most comprehensive integration and initiative scope, and thus most people and functions will be part of the process of increased cooperation
- In conclusion, the overall benefit and implementation complexity assessment of the Merger Scenario implementation is higher than the complexity of the NUAC/SKAANE and the Alliance Scenarios.

Key integration risks and complexities in the **NUAC/SKAANE Scenario** are:

- Temporary decrease in motivation and productivity among involved personnel, until their personal situations are communicated in terms of new tasks and responsibilities, physical belonging, and other key working conditions
- The integration time span is the second longest after the Merger Scenario implementation. However, only the operational functions are directly part of the process of increased cooperation, thus limiting the company risks. The NUAC/SKAANE Scenario recommends that approximately 80 ATCOs are transferred between the three legal entities
- In conclusion, the overall benefit and implementation complexity assessment of the NUAC/SKAANE Scenario implementation is moderate complexity.

Key integration risks and complexities in the **Alliance Scenario are**:

- Temporary decrease in motivation and productivity among involved personnel, until their personal situations are communicated in terms of new tasks and responsibilities, physical belonging, and other key working conditions
- The integration time span is shorter, and the operational ATCO staff will be indirectly part of the process of increased cooperation in the Alliance Scenario, due to the changed airspace design.
- However, instead a substantial support staff number will be part of the process of increased cooperation. The Alliance Scenario initiatives are directed at shared services, rather than core ATM areas, which stay in retained organisations.
- In conclusion, the overall benefit and implementation complexity assessment of the Alliance Scenario implementation is low to moderate complexity.

The estimated integration plans for the three scenarios assumes a preparation/ development phase until 2008, where the respective new organisations are established in order to drive the transition phase until the new organisations take full responsibility for the new business.

As illustrated in Figure 11 above, the transition phases vary in length based on the scope and complexity of the integration. Consequently the Merger Scenario operates with a four years transition period to 2011, NUAC/SKAANE Scenario with three years to 2010 and the Alliance Scenario operates with two and a half years to 2009/2010.

7 Socio-economics

As major changes in airspace structure and/or the actual provision of Air Navigation Services potentially can have an effect on both the level for flight safety and the socio-economics in the region where the changes are implemented, the NUAC Programme have conducted Fast Time Simulations on the airspace suggested for the 3 scenarios in the airspace design report (appendix 7).

The airspace illustrated in the report is a high level description of a possible future airspace design for the 3 investigated scenarios – enabling the composition of the Business Case. The analysis of the simulation (appendix 8) gives clear indications that the designed airspace is a viable solution in terms of creating a Functional Airspace Block with potential positive effects, also in a socio-economical perspective, without jeopardising the level of flight safety.

The preliminary analysis indicates that there could be reductions in flying time, flown distances and thus also in fuel consumptions and emissions of carbon dioxide and other greenhouse gases within Danish and Swedish airspace. This having positive effects on our customers, the airliners, and society in general.

The fuel savings related to the above should also be seen as a further enhancement for our customers as the cost of fuel is steadily becoming a higher part of the cost per passenger with rising fuel prices as the major cost for airlines today.

The NUAC Programme has, on the basis of the simulation[10], analysed the effects of the changes in airspace structure. The preliminary conclusion indicates positive effects regarding flying time, flown distances, fuel consumptions, and emissions of carbon dioxide and other greenhouse gases.

Outside economics and emissions the total amount of noise imposed upon society by aircraft will be reduced by shorter flight time/distance.

Establishment of a common enterprise/company for the provision of Air Navigation Services in Danish and Swedish airspace, as outlined in the investigated scenarios, is deemed as having potential positive socio-economic effect. This in both saving and ensuring the development of highly specialised working positions in the region and with Danish and Swedish influence on the future development of European Air Traffic Management enabling the common enterprise/company to react promptly to costumer needs and society's demands and thereby giving more value to society in general.

[10] For details and figures refer to the main report chapter 7

8 Key recommendations for the way ahead

On the basis of the findings and the work done during the Definition Phase, the NUAC Programme Management recommends to the Steering Committee that the following decisions are taken for the way ahead with the development of the NUAC Programme and thus for the continued work of the Programme Management Team during the autumn 2006:

1. To narrow the scope for the development of the NUAC Programme by *abandoning the NUAC/SKAANE projects'* further development.
2. To *establish a detailed Socio-Economic Analysis* in order to consolidate the indicative findings from the Programme work.
3. To task the NUAC Programme Management Team with the assignment of *continuing the work* in accordance with the agreed process and road map, and *to start preparation and planning of the next phases of the NUAC Programme*.

These recommendations have all been accepted by the NUAC Programme Steering Committee and as a consequence the Socio-Economic Analysis and the planning for the continued work in the programme is now ongoing.