NUAC Programme
Definition Phase Final Report

Appendix 1
Business Case

FEBRUARY 2007

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1 Introduction

This Appendix comprises a detailed description of the Business Case used in the NUAC Programme. The assumptions, methods and model used as a basis for the Business Case are presented.

1.1 Background

With background in the Single European Sky legislation, the national strategic directions as outlined in Denmark and Sweden respectively and stated in government publications “Dansk Luftfart 2015 – muligheder og udfordringer” and “Den svenska transportpolitiska propositionen” and the increased demand for effectiveness from the customers (airline operators) the NUAC Programme was tasked with the assignment of investigating the possibilities of ensuring a higher degree of cost effectiveness for Air Navigation Services in Denmark and Sweden whilst maintaining today’s high level of flight safety.

During the NUAC Definition phase three different scenarios have been analyzed in order to describe the effect of three different future scenarios for a formal cooperation between LFV/ANS and Naviair.

The three scenarios examined are:[1]

- **Merger** – a merger of relevant parts of the two organisations LFV/ANS and Naviair into one organisation with responsibility for the carrying out the Air Traffic Service provision within Danish and Swedish airspace and working in a Functional Airspace Block with possibility of one en-route charging zone and a common unit rate
- **NUAC/SKAANE** – implementation of the original NUAC and SKAANE concepts as was laid down by the original projects. This with LFV/ANS and Naviair as co-owners of a NUAC company carrying out the Air Traffic 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 LFV/ANS and Naviair will remain as independent organisations.
- **Alliance** – 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. This with only minor changes to the operational parts of the two organisations working in a Functional Airspace Block with possibility of one en-route charging zone and a common unit rate.

1.2 Purpose and subject of the Business Case

The primary purpose of the Business Case is to assess the financial and non-financial and qualitative benefits of a more formalized cooperation between Naviair and LFV/ANS. The scope in NUAC Definition Phase is a scientific analysis of the potential in the three scenarios. The actual outcome of NUAC might result in further benefits or costs, but these will depend on further detailed analysis, negotiations with employees and stakeholders etc. It is therefore mentioned that the solutions identified are all possible with the current knowledge, but the actual financial results are considered with some uncertainty.

[1] See respective main sections for further description and assumptions related to the three scenarios.

The subject of the Business Case is an analysis of the financial effects – i.e. the costs and cost savings – and non-financial and non-quantifiable benefits related to the implementation of the three scenarios during the fiscal years 2006 through 2020. Non-financial and non-quantifiable benefits related to each scenario have been assessed, in order to capture qualitative effects that are part of the strategic rationale for NUAC.

2 Methods and Assumptions

The methods and assumptions used in the Business Case are described in the following sections, along with the scope, cost model, cost structure, data sources, assumptions and financial metrics.

2.1 General Approach

The Business Case consists of two areas of benefits – i.e. internal versus external benefits and costs of NUAC, and two ways of measure – i.e. financial versus non-financial and qualitative benefits and costs. As illustrated in Figure 1, the primary focus of the Business Case is the internal financial and non-financial and qualitative benefits and costs related to the three scenarios. External benefits and costs are to some extent assessed in the analysis of the strategic rationales.

Figure 1 Focus of the Business Case

	Internal benefits/costs	External benefits/costs
Financial	• E.g. reduced operational costs	• Flying time • Environment • Operational costs for airlines
Non-financial and Qualitative	• E.g. improved customer orientation	• Compliance with SES • Compliance with Swedish and Danish aviation policy • Military issues • Regional Development

2.1.1 Initiatives

Seventeen concrete benefit realisation initiatives have been established, derived from the strategic rationales covering the benefit potential by formalized cooperation in the different functional areas of the two organisations. The initiatives[2] are described in Table 1. As a consequence of the initiatives being driven by the establishment of a formalized cooperation, they cannot in general be implemented as individual cost reduction projects, although three

[2] See “Appendix 2: Business Case – Initiatives” for a detailed description of the individual initiatives in each of the three scenarios.

initiatives[3] have been identified as possible initiatives for implementation in the current situation, with a limited financial impact.

Table 1: The initiatives

No.	Name of Initiative	Description
1	Optimization of management functions	Due to the new organisational design established in the business model, there will be a need for a re-arrangement of senior management and management staff in order to fill positions in the NUAC company as well as in Naviair and LFV/ANS.
2	Optimization of general administrative functions	In order to optimize the current administrative staff functions, new administrative staff functions and related processes etc. have been designed in the business model. The new administrative staff functions are designed in according to "best practice" - hence all processes, procedures, activities etc. within the respective functional areas have been harmonized and aligned to the new organisational design.
3	Optimization of systems development functions	After implementation of DATMAS and EUROCAT all development activities related to ATM-systems will be handled in COOPANS. As a consequence of this, the number of system development staff can be kept at a minimum, since primary tasks are requirements for COOPANS. As a result systems development staff functions can be optimized considerably.
4	Optimization of systems maintenance functions	Based on the assumptions that a future NUAC will be based on a harmonized and consolidated ATM and CNS systems infrastructure, significant potential savings related to systems maintenance and supervision exists. Outsourcing of systems maintenance and supervision (e.g. as partially done currently in LFV/ANS by ELTEL) is assumed to realize a savings potential. Besides scale economies, synergy potentials will arise due to the fact that current ATM-systems will be harmonized and consolidated through COOPANS - hence reducing workload related to systems maintenance.
5	Optimization of procedures functions	Optimization of operational procedures functions through centralization and alignment of current processes, procedures and activities, and associated reduction in duplicate activities and positions. Also, benefit potentials will arise due to common development.
6	Optimization of general operational support functions	In order to optimize the administrative functions related to general operational support functions (i.e. roster planning functions etc.), new functions and related processes have been designed in the business model. The new administrative operational support and duty roster planning functions are designed such that all processes, procedures, activities etc. within the areas have been harmonized and aligned to the new organisational design, leading to a reduction in activities and positions.
7	Optimization of briefing officer functions	Optimization of Briefing Officer-functions through cross boarder alignment of current processes, procedures and associated reduction in activities and resource requirements. Furthermore, potential savings can be realized through centralized governance and optimization and harmonization of current Briefing Officer-activities.
8	Closure of two control centers in night hours	Optimization of Air Traffic Controllers (ATCO's) in night hours with low traffic volumes. With the current traffic volumes in Copenhagen, Stockholm and Malmö in night hours between 24:00 to 06:00, it is estimated that one control center can manage airspace for the three control centers – with a slight increase in ATCO's on the night shift at the chosen control center – resulting in a reduction in necessary ATCO's overall.
9	Optimization of control positions	Optimize current utilization of operators through consolidation of positions in Copenhagen, Stockholm and Malmö. Local approach positions are not included in the initiative (e.g. approach centers in Norrköping, Göteborg, Billund). The required amount of positions in the three scenarios is estimated in "NUAC Airspace Design Team Report". Current baseline of positions is estimated to a total of 114 positions
10	Common administrative IT platform and applications	Administrative IT systems and applications (MS Office applications etc.) and IT infrastructure will be sourced jointly and key systems and applications platforms will be standardized in order to achieve lower license and procurement costs as well as an overall reduction in the maintenance, support and implementation related costs (non FTE). Administrative IT is defined as all non-operational (CNS, ATM) related hardware and software.
11	Sourcing of tele/data communication services	Common sourcing/procurement of telephony/data communication incl. hardware, and subscriber services (handsets, switches etc.). It is assumed that a potential cost reduction can be achieved through realizing better sourcing and subscriber contracts through greater volume discounts. In addition it is estimated that there is potential for realizing further cost reductions by pan-Nordic agreements with the Scandinavian telecom providers.
12	Purchasing and operation of "other ATM systems"	Common future purchasing and operation of standard "other ATM systems" (i.e. systems are replaced at the end of their life cycle) will result in cost savings. The category 'other ATM systems' covers all relevant ATM systems except CNS systems, tower systems and systems covered by the COOPANS cooperation.
13	Common use of existing surveillance infrastructure	Common use of existing surveillance infrastructure in Denmark and Sweden will reduce the total need for surveillance infrastructure in Denmark and Sweden, and thereby reduce the operating and investment related costs.
14	Purchasing and operation of standard CNS-systems	Common future purchasing and operation of standard CNS systems and infrastructure (i.e. Infrastructure/systems will be replaced when the life cycle is completed) will reduce the operating and investment related costs.

[3] The initiatives are: Initiative 12: "Common future purchasing and operation of standard "other ATM systems""; initiative 13: "Common use of existing surveillance infrastructure in Denmark and Sweden", and initiative 14 "Common future purchasing and operation of standard CNS systems and infrastructure". See "Appendix 2: Business Case – Initiatives" for details.

15	Optimal use of existing basic and unit training simulators	Joint use of existing basic and unit training simulators in Denmark and Sweden will realize savings through closure of the basic training simulator in Copenhagen (the CATCAS simulator) since basic training can be carried out at Entry Point North (EPN). Furthermore savings will occur through Integration of basic and unit training in one simulator at EPN, by closing down the existing Smart simulator and by expanding the capacity of existing EUROCAT simulator in Malmö to cover both basic and unit training and simultaneously move this simulator to EPN.
16	Reduction in General Overhead Costs	Cost saving not directly related to payrolls or operation costs, but highly dependant on the number of staff. As an effect of the FTE reductions, general overhead costs will be reduced. General overhead costs include recruitment and training, administrative IT costs etc.
17	Project implementation	This initiative assesses the implementation costs related to implementation of the initiatives defining the scenarios in the NUAC Programme.

The three Scenarios are defined – based on their definition and related Business Model – by the initiatives. As mentioned in the description of the Business Model, the Scenarios differentiate on how the organisations should cooperate and which functional areas should be included in the cooperation. In other terms, the Scenarios differentiate on which initiatives to include and how the initiatives are included.

In addition to the above 17 initiatives, four initiatives[4] were investigated during the NUAC Programme - Definition Phase. Due to uncertainty related to implementation of these initiatives, further investigation of the initiatives will be performed in the future Programme work.

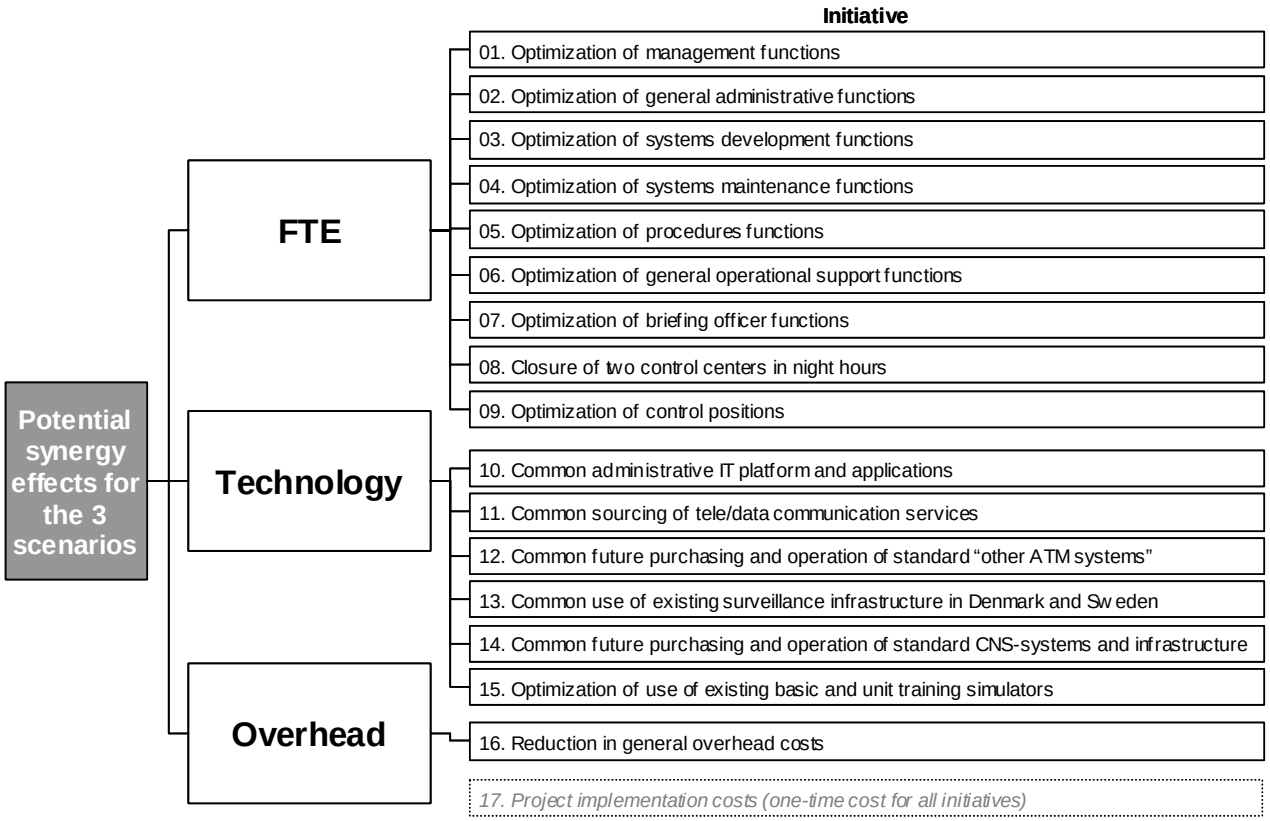
2.1.2 Categories of Initiatives

Based on the general cost structure in the Air Navigation Service industry, the initiatives are grouped into the following main categories, as indicated in Figure 2 below:

- Optimization of staff functions (“FTE”)
- Cost savings related to systems and technology (“Technology”)
- Reduction of general overhead costs (“Overhead”).

[4] The four initiatives relate to: optimization of Airspace Management Cells (AMC), optimization of Air Traffic Flow Management (ATFM) Supervisor functions, Alignment of Flight Information Service (FIS), and finally reduction of rental costs of buildings and establishment of one corporate headquarter.

Figure 2: Grouping of Initiatives



2.1.3 "Business as usual" and Baseline

The Business Case is based on the above stated initiatives and their financial effect in the three scenarios – Merger, NUAC/SKAANE and Alliance.

In order to recognize the impact of the initiatives a "business as usual" situation is needed for comparison. The "business as usual" is the situation where Naviair and LFV/ANS carry on as planned, in according to their current strategies and plans. As a consequence, current procedures, practices, systems etc. remain in place in Naviair and LFV/ANS respectively during the analysis period. As COOPANS is part of the current strategies and plans for both Naviair and LFV/ANS, the implementation costs of COOPANS are included in the "business as usual". The savings related to the COOPANS project are not included in the Business Case for NUAC, merely the savings obtained from a more formal cooperation in the coordination of the COOPANS project is included, since this can be handled more efficiently from one unit as compared to two units in the Retained Organisations.

The budget for "business as usual" is established by consolidating current 2006 budgets of Naviair and LFV/ANS (referred to as "baseline").[5] The 2006 budgets of Naviair and LFV/ANS have been projected to 2020 in order to cover the analysis period.[6, 7]

[5] All tower and Local Approach unit/ATS related costs and revenues are excluded in the Business Case, since these areas are out of scope for the NUAC Programme.

[6] Respective Finance Departments of Naviair and LFV/ANS have provided the baseline figures from 2006 to 2020.

The consolidated total operating costs in the analysis period are shown in Table 2, in million euros:

Table 2: Total Operational Costs 2006 – 2020

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Naviair	58,4	60,2	64,6	66,5	68,5	70,5	72,6	74,8	77,1	79,4	81,9	84,4	87	89,8	92,6
LFV/ANS	101,9	104,6	107,5	110,4	113,4	116,5	119,7	123,1	126,5	130	133,7	137,4	141,3	145,3	149,5
Total	**160,3**	**164,8**	**172,1**	**176,9**	**181,9**	**187**	**192,3**	**197,9**	**203,6**	**209,4**	**215,6**	**221,8**	**228,3**	**235,1**	**242,1**

In order to estimate the sensitivity related to the financial impact of the three scenarios, risks related to implementation in the initiatives have been analyzed. Furthermore the variance related to the estimated financial impact has been included in the sensitivity calculations.[8]

The Business Case follows EUROCONTROL's standards for Cost Benefit Analysis as stated in "Guidelines for the economic appraisal of EATMP projects – the effective use of cost-benefit studies" and "Standard Inputs for EUROCONTROL Cost Benefit Analysis".

2.2 Business Case – Scope and Boundaries

2.2.1 The Analysis Period

The Business Case analysis covers a 15-year period, beginning in 2006, and extending through 2020. Generally costs and benefits have been established for this period.

2.2.2 Geography or Location

The scope for NUAC Programme is an organisation able to provide Air Navigation Services in the airspace above Sweden and Denmark respectively, except for Tower and Aerodrome Control Services.

2.2.3 Organisations

The organisations of Naviair and LFV/ANS are within scope of the Business Case. Level 1 processes and organisational diagrams for the future NUAC have been designed for the three scenarios in the Business Model.[9]

2.2.4 Functional areas

All functional areas in Naviair and LFV/ANS are within scope, except for areas related to Tower (TWR), Aerodrome Tower (ATWR), and Local Approach units/ATS in both Denmark and Sweden.

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[7] For further details and assumptions related to baseline, see Appendix 3: Business Case – Documentation, Baseline – Naviair and LFV/ANS.

[8] See section 7, for further details related to the sensitivity analysis.

[9] See Appendix 4 – Business Model for description of level 1 processes and organizational diagrams.

2.2.5 Technology and infrastructure

The scope of the Business Case includes all systems, technologies and infrastructure related to Air Traffic Management (ATM) activity, i.e. ATM systems, Communications, Navigations, and Surveillance Systems, other ATM related systems and general administrative IT systems etc.

2.3 The Cost Model

The Cost Model in the Business Case describes the financial impact of the initiatives as incremental value costs or cost savings, compared to the “baseline”. This means that only additional costs or cost savings related to implementation of the initiatives are considered.

The reason for choosing the incremental value approach is to compare the differences between the benefits obtained by implementing the three scenarios, hereby obtaining the required transparency when comparing the scenarios.

The cost items analyzed in the Business Case are grouped into the following main cost categories (i.e. the Cost Model):

- Payroll costs related to Full Time Equivalents (FTE)
- Costs related to systems and technology, i.e. ATM systems, Communications, Navigations and Surveillance systems and related infrastructure, Administrative IT etc.
- General overhead costs, i.e. recruitment and training costs, administrative IT and other office costs etc.
- Project implementation costs, i.e. costs related to internal staffing, upgrade and integration of IT systems etc.

The Business Case does **not** include a valuation of Naviair and LFV/ANS. The reason for not including a valuation is that the purpose of the Business Case is to demonstrate the differences between the costs and benefits obtained by implementing the three scenarios.

2.4 Data Sources and Assumptions

The financial figures used in the calculations in the Business Case have been obtained by consolidating existing strategies, budgets and investment plans from LFV/ANS and Naviair. Additional information on the companies has been collected through interviews with key personnel in the two organisations.

- All financial data and figures are based on 2006 budgets and investment plans for Naviair and LFV/ANS
- All quantified costs and benefits are estimated in constant 2006 EURO prices
- Price inflation and exchange rate movements are inverse operations and therefore ignored, since it is assumed that these will counterbalance each other. Thus follows that discount rates used to compute the present values of future costs and benefits are stated in real terms, i.e. as if constant prices prevail
- The potential cost savings related to optimization of staff functions (“FTE initiatives”) are subject to some uncertainty due to the fact that detailed process, activity analysis etc. are out of scope for this phase of the NUAC Programme

- Current amount of employees in Naviair and LFV/ANS are based on Full Time Equivalents (rounded off) per 1 April 2006. Stated amounts of FTEs are estimated by considering the primary area of responsibility and daily-related activities – **not** the norm figures for the current number of employees in each area. The allocation of employees to primary area of responsibility is determined through interviews with experts and managers from the respective organisations[10]
- Calculations of average payroll costs, analyzed in the individual initiatives are based on current average payroll costs in the present companies (Naviair and LFV/ANS) as of 1 April 2006. Averages payroll costs are calculated regardless of number of FTE's in Naviair and LFV/ANS respectively (non-weighted average). Cost savings per FTE are based on the total average payroll costs displayed in Table 3
- Average payroll costs per employee group (average salary incl. pension, bonus, social security etc. rounded to nearest thousand):[11]

Table 3: Average Payroll Costs

	Naviair	LFV/ANS	Average
Management and general administrative staff			
Senior Management	€ 111.000	€ 138.000	€ 124.500
Management	€ 96.000	€ 117.000	€ 106.500
Junior Management (supervisor)	€ 82.000	€ 96.000	€ 89.000
Administrative staff	€ 60.000	€ 75.000	€ 67.500
Secretary staff	€ 48.000	€ 57.000	€ 52.500
Operational Staff			
Watch Supervisor	€ 100.000	€ 106.000	€ 103.000
ATCO's	€ 89.000	€ 85.000	€ 87.000
FDO	€ 59.000	€ 53.000	€ 56.000
Operational Support Staff			
Duty roster planning staff	€ 51.000	€ 64.000	€ 57.500
Other operational support staff (excl. ATCOs)	€ 59.000	€ 59.000	€ 59.000
Technical Staff			
Development staff	€ 74.000	€ 85.000	€ 79.500
Administrative development support staff	€ 55.000	€ 75.000	€ 65.000
Maintenance staff	€ 63.000	€ 75.000	€ 69.000
Technical Supervisor	€ 58.000	N/A	€ 58.000

- Costs related to retention and transfer of employees (e.g. compensation etc.), are not assessed in the individual initiatives, since these are highly dependent on the geographic placement of the future NUAC corporate headquarter

[10] See Appendix 3: Business Case – Documentation, Allocation of Staff to Functional Groups.

[11] Source: HR department in Naviair and LFV/ANS.

- Severance costs etc. related to redundant staff are estimated for senior management and management level employees only, since it is assumed that remaining employees retain their position until date of leave
- The future staffing requirement for each functional area in the Merger and Alliance scenario are based on the processes and organisational design as described in the Business Model,[12] combined with best practice principles for design of the individual functional areas (HR, Finance etc.). Best practice within administrative functional areas means that the estimates describe the optimal solution regarding number of support staff compared to number of core personnel, and that minimum estimates and most likely estimates are calculated from these. Best practice within operational support staff is estimated through interviews with experts and by comparing the two organisations
- A main purpose of the new NUAC organisation is – regardless of scenario – to provide Air Navigation Services at lowest costs and with focus on flight safety. This can be achieved through scale economies in some form of scale merger by enforcing an extensive integration of the functional areas in the current companies. As a result of this all functional areas are fully integrated in the Merger scenario, whereas e.g. only areas not depending on certification, designation etc. are integrated in the Alliance scenario. In the NUAC/SKAANE scenario only areas considered in the original Nordic UAC and SKAANE-projects are included
- The primary sources for potential cost savings through reduction of resources are assumed to be realized through focusing on the following aspects:
  - *Elimination of duplicate functions:* Based on the fact that a high level of duplicate positions (management, specialists, international representatives etc.) will occur as a result of full integration of the functional areas in the two organisations
  - *Increased effectiveness:* Optimization of current processes through harmonization and standardization of current administrative and operational processes, hereby reducing current workload. Furthermore, centralization of personnel to one location will increase staff utilization, due to a more flexible use of available resources, knowledge sharing etc.
  - *Sourcing solutions for non-core processes:* In order to focus on core business processes and maximize cost-effectiveness, all non-core processes are sourced from third party if this is considered possible and financially beneficial
  - *Optimal size of organisation:* Future resource requirements related to some administrative support functions (e.g. administrative IT, Human Resource etc.) are reduced, due to the fact that the merged organisation will employ fewer personnel.
- Redundant personnel identified in the initiatives are considered as a source for staff reduction. If possible, the reduction of staff is accommodated through natural attrition and general staff turnover[13].
- An FTE is defined as employment of 1749 hours/year in Sweden and 1865 hours/year in Denmark

[12] See Appendix 4 – Business Model for description of level 1 processes and organizational diagrams.

[13] Lists describing the distribution by age of current staff and general turnover in Naviair and LFV/ANS are shown in section 7.2

- Employment of new operational air traffic controllers (ATCO) and thereby booking of education through Entry Point North is handled on a short time basis of 1 to 1,5 years. Therefore, if NUAC sees a need for adjustment of the total number of ATCOs, then the number of employment of new personnel can be put on hold from primo 2008. In Naviair there is an obligation to employ the students currently undertaking the education at Entry Point North, since students are hired in Naviair while studying at Entry Point North, this obligation does not exist in LFV/ANS
- All tower related costs and revenues are excluded in the Business Case, since Tower is out of scope of the NUAC Programme. In order to distinguish the number of air traffic controllers (ATCO) which work on both areas related to Approach and Tower in Naviair a ratio of 60% for Approach and 40% for TWR, has been applied, cf. interview with Staff Planning, OSS
- Service charges to Naviair and LFV/ANS for use of infrastructure are assumed to be cost neutral, due to the fact that ownership of infrastructure resides within Naviair and LFV/ANS respectively
- Exchange rates: € 1: 7,46 DKK; € 1: 9,3 SEK.

2.4.1 Specific Assumptions

- Implementation of COOPANS will be carried out regardless of scenario, therefore the savings related to the COOPANS project are not included in the Business Case for NUAC, merely the savings obtained from a more formal cooperation in the coordination of the COOPANS project is included, since this can be handled more efficiently from one unit as compared to two units in the Retained Organisations.
- DATMAS system is assumed implemented as scheduled in ultimo 2007 and EUROCAT system in primo 2011, hence the DATMAS platform will be fully harmonized primo 2011. As a results, can reductions in amount of FTE's related to ATM systems development etc. can be expected primo 2011
- Based on the "NUAC Programme Airspace Design Report"-document[14] current numbers of positions are estimated to a 114
- Local Approach units/ATS in both Denmark and Sweden are not included in the calculations of positions as these are treated separately in the "NUAC Programme Airspace Design Report".

2.5 Financial Metrics

Cash flow estimates in Euro (€) for the individual initiatives are developed for each of the 15 years in the analysis period (years 2006 to 2020). Expected cash flow results are summarized in a standard format. Moreover cash flow estimates form the basis for several metrics, described in the following sections.

2.5.1 Net Cash Flow

Net Cash Flow represents the combined result of all estimated inflows and outflows. Net cash flows is presented in € for the 15-year period 2006 to 2020. The total net cash flow for each year of the analysis period is presented in the respective Cash Flow Summary sections.

[14] See Appendix 7 – NUAC Programme Airspace Design Report.

2.5.2 Net Present Value

Costs and benefits are included in the analysis as cost savings in the year they are assumed to incur. These values are discounted to present day value and accumulated to describe the Net Present Value (NPV) in year *n*. The NPV is defined as the net cost savings the initiative invokes on the NUAC Programme as a whole. As a result, the net balance of Naviair and LFV/ANS is not specifically described.

The values of cash flows are discounted at a rate of 5% p.a., based on recommendations from the Danish Ministry of Finance and Swedish Ministry of Finance. Discounted Cash Flow (DCF) and Net Present Value (NPV) in € are presented in the respective cash flow summary sections.

In order to estimate the sensitivity and, thus, the risk to the economic viability, the discount rate is investigated in the interval 4% to 6%. In Sweden an average of 4% p.a. are used, while the Danish Ministry of Finance uses a discount rate of 6% p.a.

2.5.3 Internal Rate of Return

Internal Rate of Return (IRR) is a financial metric that reflects the time value of money (like NPV). The IRR for an investment is the discount rate for which the total present value of future cash flows equals the cost of the investment. It is the interest rate, that produces a 0 NPV i.e. the IRR describes the maximum rate that would results in the investment being defined as beneficial.

3 Business Case – Merger

This section contains the Business Case for the Merger Scenario, i.e. the financial and non-financial costs and benefits related to implementation of the Scenario.

3.1 Assumptions

- With constant focus on safety and the core processes related to Air Navigation Services the merged organisation is fully driven by cost-effectiveness
- NUAC handles area control and approach activities in Denmark and Sweden, including related support functions as defined in the Business Model [15]
- Only the merged NUAC organisation needs to be certified and designated for area control services in Denmark and Sweden
- Tower services and infrastructure ownership remain in LFV/ANS and Naviair
- Based on the "NUAC Programme Airspace Design Report" document regarding consolidation of positions, it is estimated that the required amount of ATCO and ATCO support positions in the Merger Scenario equals 107 working positions[16].

3.2 Financial Impact

The net present value (NPV) related to implementation of the Merger Scenario in the period 2006-2020 is estimated to a total of approx. €153,9 million. Payback period for the Merger Scenario is projected as approx. 5 years, and internal rate of return (IRR) at 51%.

Figure 3 Financial results for Merger Scenario

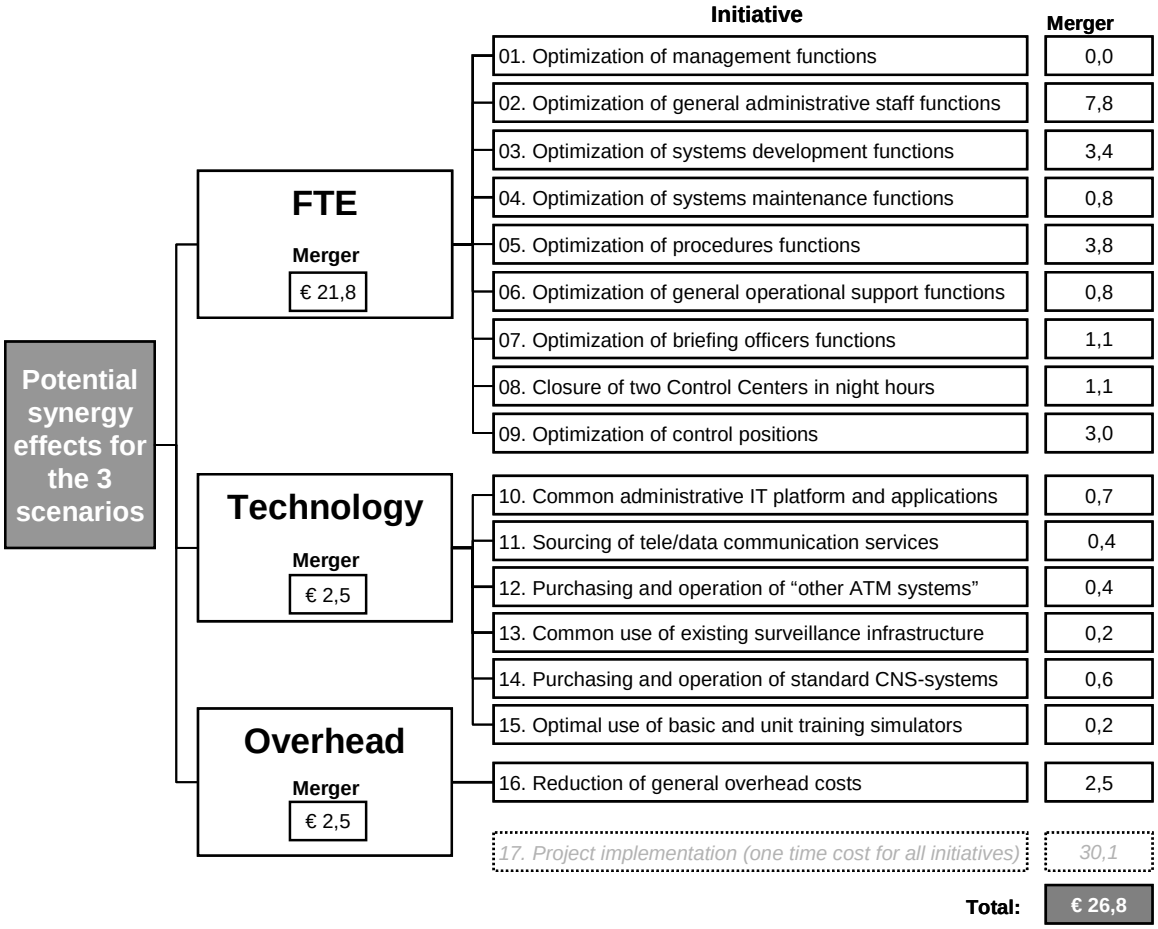
	NPV	IRR	Payback time
MERGER	€153,9 million	51%	2011 – 5 years

An estimation of the annual saving potentials in the Merger Scenario in 2020 reveals that annual savings of €26,8 million are mainly derived from Optimisation of staff functions ("FTE") with a total annual cost saving of approx. €21,8 million, corresponding to 82% of the total cost savings in 2020, and annual cost savings related to systems and technology equals approx. €2,5 million, whereas reductions in general overhead costs are estimated to approx. €2,5 million as shown in Figure 4.

[15] See " Appendix 4: Business Model" for further details.

[16] See " Appendix 7: Airspace Design" for further details.

Figure 4 Estimated annual savings in 2020 (million Euros) in Merger Scenario



As shown in Figure 4, the largest projected benefit in the Merger Scenario derives from the "FTE"-category. As described in the respective "FTE"-initiatives[17], the potential savings are primarily realized through:

- *Elimination of duplicate functions:* Based on the fact that a high level of duplicate positions (management, specialists, international representatives etc.) will occur as a result of full integration of the functional areas in a merged organisation

- *Increased effectiveness:* Optimization of current processes through harmonization and standardization of current administrative and operational processes, hereby reducing current workload. Furthermore, centralization of personnel to one location will increase staff utilization, due to a more flexible use of available resources, knowledge sharing etc.
- *Sourcing solutions for non-core processes:* In order to focus on core business processes and maximize cost-effectiveness, all non-core processes are sourced from third party if this is considered possible and financially beneficial

[17] For a detailed description of the initiatives, see "Appendix 2: Business Case – Initiatives".

- *Optimal size of organisation:* Future resource requirements related to some administrative support functions (e.g. administrative IT, Human Resource etc.) are reduced, due to the fact that synergies will mean that the merged organisation will employ fewer personnel, than LFV/ANS and Naviair together before the merger.

The second largest projected benefit area in the Merger Scenario derives from "Technology" related initiatives. The total annual benefit potential related to these initiatives is approx. €2,5 million. Cost savings related to these initiatives are mainly realized through standardization, harmonization and consolidation of existing system platforms. Of these costs savings, approx. €1,0 million is realized through common future purchasing, due to improved bargaining power, reduced adjustment and implementation costs (external consulting services) etc.

Finally, the annual cost savings related to "Overhead" amounts to a total of approx. €2,5 million. The cost savings related to general overhead is a direct effect of the reduction in required personnel of 204 FTE.

3.2.1 Effects related to Realization of FTE Initiatives

Realization of the cost savings in the "FTE" initiatives implies a reduction of current staff in the Merger Scenario with 377 FTE, including 173 FTE who are proposed to be sourced from third parties. As indicated in Figure 5, the total reduction of 204 FTE are all expected reduced through natural attrition and general staff turnover of 5%, due to the fact that 253 FTE are expected to resign in the period 2008 to 2011[18, 19].

Figure 5 Total FTE reductions and natural attrition and staff turnover in Merger

	Baseline		Total	Implication				Staff turnover and
	Naviair	LFV/ANS		NUAC Company	Outsourcing	Remaining	Reduction	Natural attrition
Initiative 1	5	7	12	9		3		
Initiative 2	97	95	192	99	29	20	44	
Initiative 3	57	22	79	35			44	
Initiative 4	85	75	160	3	144	17	-4	
Initiative 5	21	77	98	40		17	41	
Initiative 6	13	15	28	15			13	
Initiative 7	12	31	43	25			18	
Initiative 8	9	19	28	15			13	
Initiative 9	193	380	573	538		0	35	
	492	**721**	**1213**	779	173	57	204	253

Outsourcing of systems maintenance and supervision (i.e. as currently done in LFV/ANS by ELTEL) is assumed to realize a total savings potential. This rationale is based on:

- Achievement of lower service costs through increased competition
- An external (or internal) providers ability to achieving greater economies of scale than may be achieved without sourcing
- Harmonization and consolidated of current systems e.g. through COOPANS – hence realizing a reduction of workload related to systems maintenance. The savings related to the COOPANS project are not included in the Business Case for NUAC, merely the savings obtained from a more formal cooperation in the coordination of the

[18] See section 7.2, for details related to assumptions for distribution of age and staff turnover.

[19] As previously stated, 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 level need to be conducted, i.e. specific staff groups must be investigated in the next phase of the project in order to determine the functions and exact number of reductions.

COOPANS project is included, since this can be handled more efficiently from one unit as compared to two units in the Retained Organisations.

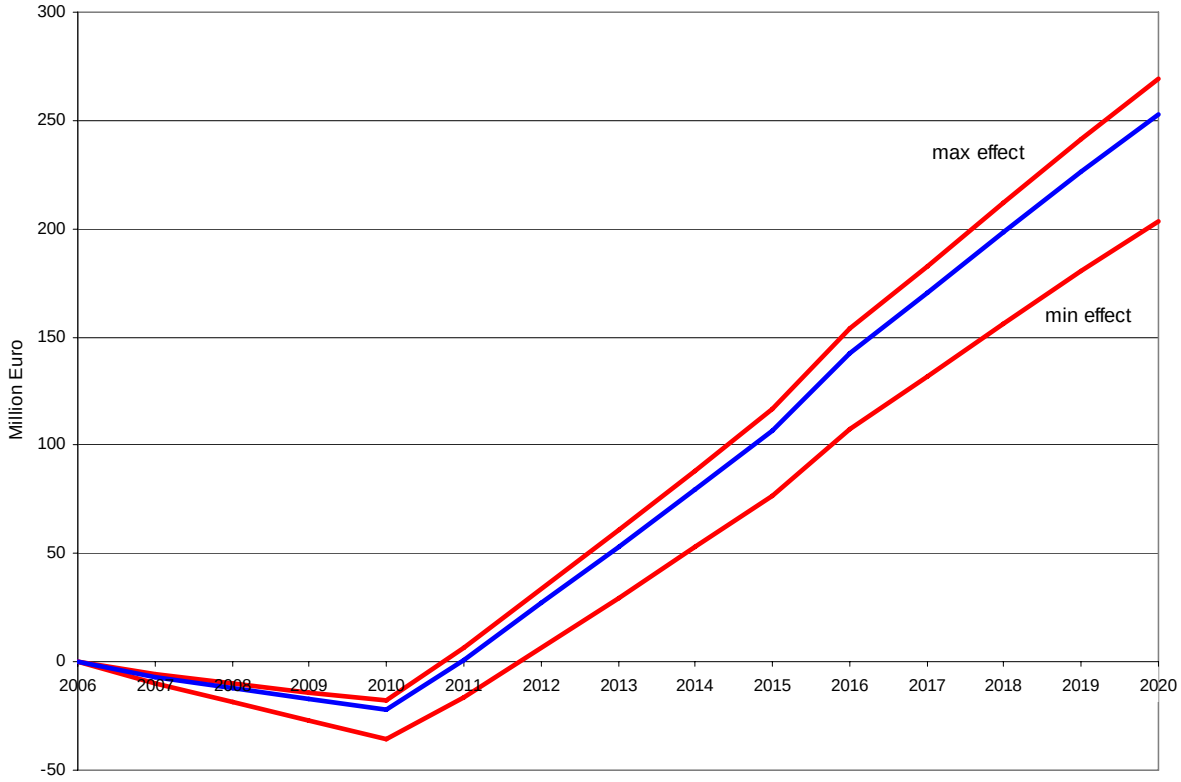
- Additional potential savings related to the infrastructure servicing of current infrastructure e.g. in Jutland may be realized through outsourcing.

Merely the savings from synergy effects in sourcing are included in the Business Case i.e. financial benefits from sourcing are obtained from the synergy effects in the integration of two units within one common third party unit.

3.3 Cash Flow Summary

As illustrated in Figure 6, the Merger Scenario reveals a break-even in 2011. This is based on the fact that costs related to project implementation will occur from 2007 to 2011, and cost savings related to Optimization of staff functions ("FTE") occurring from 2011, outweighing the severance costs and implementation costs.

Figure 6 Cumulative Cash Flow for Merger Scenario (million Euros)

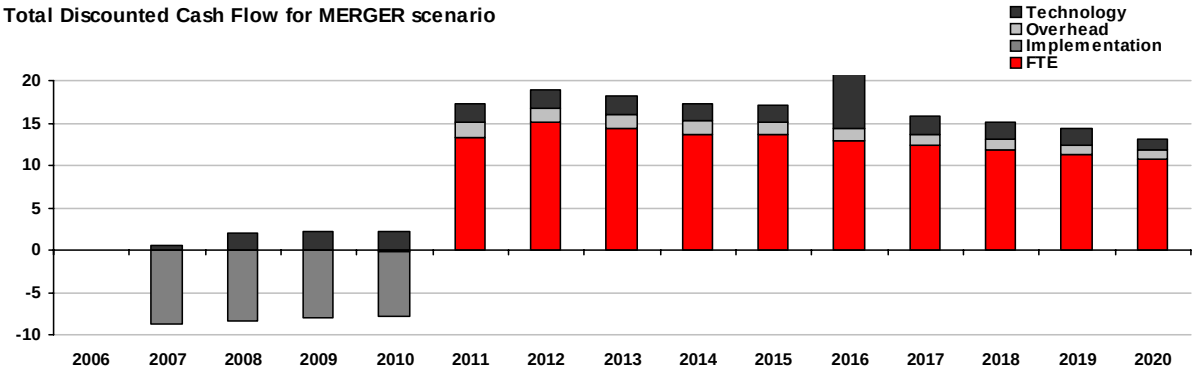


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Maximum effect	0,0	-5,9	-10,1	-13,9	-18,0	6,6	33,8	61,0	88,4	116,9	153,7	182,8	212,0	241,2	269,1
Likely effect	0,0	-6,9	-12,2	-17,2	-22,4	0,9	27,1	53,3	79,6	107,0	142,3	170,2	198,2	226,3	253,1
Minimum effect	0,0	-10,0	-18,6	-26,9	-35,5	-16,2	6,8	29,7	52,8	76,6	107,3	131,6	155,9	180,4	203,6

The span of cumulative cash flow between the maximum effect and minimum effect indicates some degree of risk[20] in the Merger Scenario, combined with a variance in the estimated cost savings.

As indicated in Figure 7, an increase in cost savings related to systems and technology ("Technology") occurs in 2016. These additional cost savings relate to avoidable investment costs related to 'other ATM systems'[21].

Figure 7 Total discounted cash flow for Merger Scenario



Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
€ Mil.	0,0	-6,6	-4,8	-4,3	-4,3	18,2	19,5	18,6	17,8	17,7	21,6	16,3	15,6	14,9	13,5

3.4 Non-Financial Benefits

Previous sections have mainly focused on financial benefits, but implementation of the Merger Scenario will also result in a number of significant non-financial and qualitative benefits. A number of non-financial and qualitative benefits related to flight safety, flight efficiency etc. influence the political Air Traffic Management (ATM) environment and should therefore be taken into consideration.

This section describes some of the non-financial and qualitative benefits, which are expected as a result of the implementation of the merged Scenario. The non-financial and qualitative benefits are divided into internal and external benefits for the Merger Scenario.

3.4.1 Internal Non-Financial and Qualitative Benefits

Operational flexibility

- A common and flexible resource pool entails the merged organisation to optimise the delivery and sharing of resources and knowledge. Combined with a common set of uniform processes and procedures, this entails the organisation to respond to changes in a future strategic environment.

[20] For a detailed description of integration risk related to the initiatives, see "Appendix 2: Business Case – Initiatives".

[21] For a detailed description, see initiative 12A in "Appendix 2: Business Case – Initiatives".

Alignment of Business Model

- The Business Model of the merged organisation is designed around the strategic drivers. This ensures the required alignment and coherence between the Business Model and strategic drivers and enables the realisation of the strategy. In addition, the high level of operational flexibility in the Business Model entails the merged organisation with the required level of agility.

Strategic readiness

- The Business Model designed in the merged organisation entails a clear focus on a coherent value chain consisting of: research & development – technique – airports, Air Traffic Management – airlines – passengers. The high degree of operational flexibility and alignment in the Business Model ensures the required level of agility and readiness to adapt opportunities in the ATM industry – i.e. new services, acquisitions etc.

Attraction and bargaining power

- Common processes supports scalability – i.e. entrance of new partners – due to easier integration on e.g. a common platform of standard operating procedures
- The size and strategic importance (of airspace) of the merger offer a high degree of commercial bargaining power in relation to customers, suppliers as well as alliance partners.
- In some instances, the merged organisation might offer cost savings to some of the adjacent area control centres (ACC), as the interface to NUAC and the local centres will be simplified through the larger technical harmonisation resulting from the merger
- A merged organisation entails an attractive Nordic working environment developing employees through an increased number of working tasks and job flexibility.

3.4.2 External Non-Financial and Qualitative Benefits

Flight Safety

- Improved safety through common uniform operational rules and procedures due to a common operational understanding of the regulatory environment
- Less operational conflict intervention with reduced complexity in one single airspace with common airspace management
- Integration of CNS and other ATM systems will enhance quality and improve exchange of data at technical level as a consequence of improved interoperability between technical systems
- A common technical knowledge base for the systems in the entire area will consolidate a flexible and safe technical infrastructure.

Flight Efficiency

- Optimisation of routing through the use of a larger and more flexible airspace will reduce distance and time and thus make for more efficient flight profiles
- More efficient and economic profiles for entering and leaving airspace due to the coordinated and systematic approach to adjacent areas

- Development of procedures and tools, which support en-route to en-route processes due to common and flexible solutions for regulating airport flow in the area, minimising the delay in terminal areas and on the ground
- More flexible route structuring with direct entry/exit point flights in the area
- Improved possibility of establishing civilian and military cross-border areas due to the factual abolishment of adherence to national boundaries between the countries involved
- Quicker release and hand-over of military/civilian airspace provided by interoperable systems and common rules and procedures
- The availability of more area control centres will reduce the risk of total airspace closure and loss of capacity in case of a system breakdown in one area control centre due to the possibility of providing service for the area from the other centre(s). This will improve regularity, efficiency and contingency.

Capacity Improvement

- Optimised use of airspace structures and less operational conflicts to free operational resources provide for capacity increase due to more efficient and flexible use of the entire airspace
- Consistent and optimised route network will align traffic flows in the area, which will hold more traffic as the alignment of the traffic flows will reduce coordination and the necessity for rerouting, which is cause of delay in the air and on the ground
- Improved operational cooperation due to the abovementioned consistency and common understanding.

Customer Orientation

- A merged organisation will – from a customer point of view – reduce interaction to only one common access point, hereby increasing the perceived service level. The perceived customer level is enforced by a more uniform customer experience at operational and administrative level, provided by enhanced customer-facing business processes and systems
- Customer value and attractiveness will increase due to cost reductions realised through economies of scale and optimised business processes and systems.

Socio-Economics

- One common organisational unit will create substantial political bargaining and negotiating power (one common voice) in relation to the EU and other significant political stakeholders
- More direct flight paths given shorter flying times and thus lower fuel consumption
- Possibilities for a lower unit rate

Environment

- Optimised profiles for entering and leaving airspace result in improved environment through more direct flights, less fuel consumption and thus less emission of CO2, SO2 and NOX
- Outside economics and emissions the total amount of noise imposed upon society by aircrafts will be reduced through shorter flight time/distance.

4 Business Case – NUAC/SKAANE

This section contains the Business Case for the NUAC/SKAANE Scenario, hence the financial and non-financial benefits related to implementation of the Scenario.

As previously stated, the NUAC/SKAANE Scenario is fully based on implementation of the two original projects – Nordic UAC and SKAANE project[22]. The initiatives analyzed in this Scenario therefore only take into account the financial and non-financial costs and benefits stated in the original projects.

4.1 Assumptions

- The NUAC/SKAANE Scenario is based fully on implementation of the two original projects – Nordic UAC and SKAANE project
- Original cost and benefit estimates from the Nordic UAC project and the SKAANE project have been projected to 2006 present value with an annual inflation rate of 2%
- Similarly, the time periods for which costs and benefits have been established are 2001 to 2020 (Nordic UAC) and 2003 to 2025 (SKAANE) in the original projects, but have been adjusted to 2006 to 2020 in this content
- NUAC will handle area control services above flight level 28.500 ft for both Danish and Swedish airspace in Malmö, and Naviair will handle approach and low area control services for the SKAANE area in Copenhagen
- The original Nordic UAC and SKAANE project did not include staffing, systems etc. related to the Stockholm central and local control centrals in Sweden, and as a result, these are assumed to remain unchanged in the NUAC/SKAANE Scenario
- Tower services and infrastructure ownership remain as currently within LFV/ANS and Naviair
- To a large extent, support and administrative functions will remain in LFV/ANS and Naviair
- LFV/ANS and Naviair will remain designated, and as a consequence Naviair, LFV/ANS and NUAC will be certified
- Results from the original Nordic UAC and SKAANE project are used to calculate the number of FTE savings for the initiatives (specifically the number of reductions in the number of air traffic controllers (ATCO) is based on the original SKAANE project and results in a saving of 20 FTE).

4.2 Financial Impact

The net present value of the initiatives in the NUAC/SKAANE Scenario in the period 2006 through 2020 is €–18,9 million, hence the Scenario shows a negative result, due to the fact that additional administrative and management staff is needed in the NUAC/SKAANE

[22] See reports from the original projects: NUAC Project Phase 1 Report, and SKAANE Project Feasibility Phase Final Report January 2004.

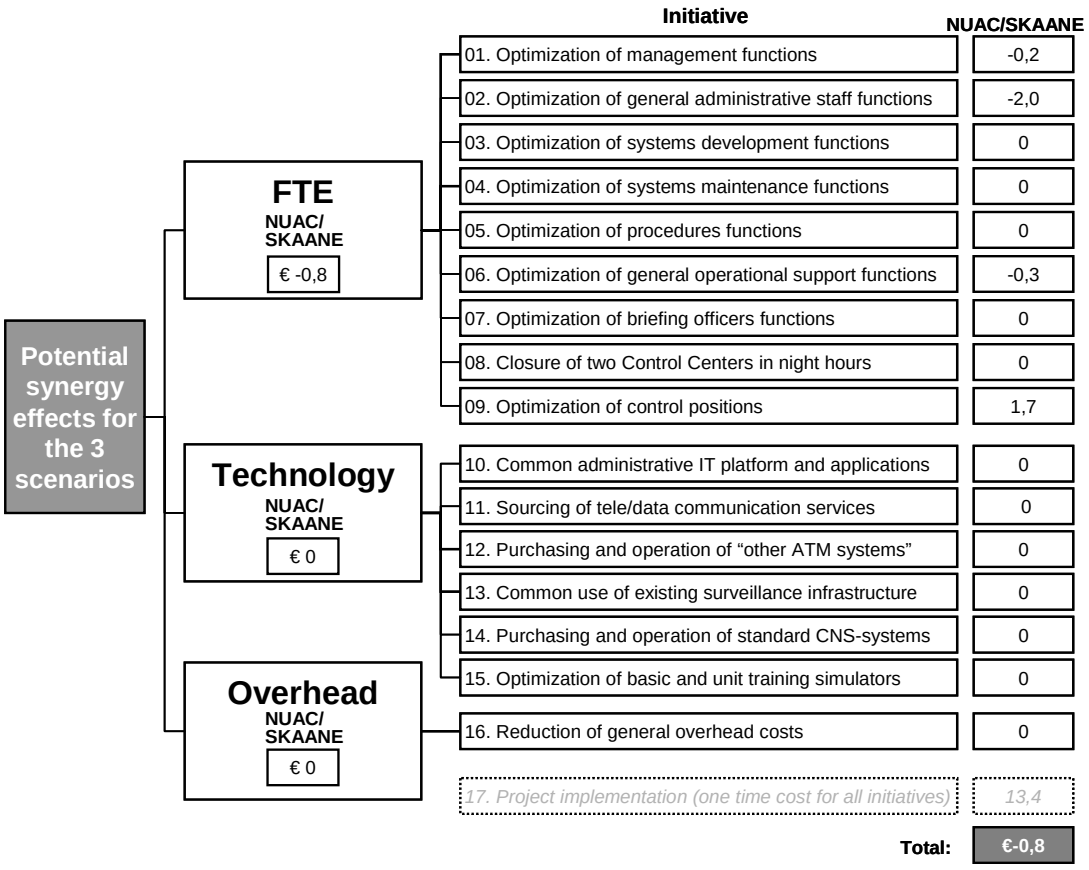
Scenario compared to the current state. This result derives from the fact that no changes are made in the assumptions for the original scenarios[23].

Figure 8 Financial results for NUAC/SKAANE Scenario

	NPV	IRR	Payback time
NUAC/SKAANE	€–18,9 million	–	–

An estimation of the annual saving potentials in the NUAC/SKAANE Scenario in 2020 reveals that Optimization of staff functions ("FTE") will have a negative impact of €–0,8 million. No costs or cost savings related to systems and technology ("Technology") as defined by the initiatives identified in this project are considered in the original projects. Finally, no reduction of general overhead costs ("Overhead") was estimated in the original Nordic UAC and SKAANE projects[24], as shown in Figure 9.

Figure 9 Estimated annual savings in 2020 (million Euros) in NUAC/SKAANE Scenario



[23] If assuming that the initiatives which can be applied in the baseline were added to the NUAC/SKAANE scenario with the same effect as in the Alliance Scenario, which includes an additional yearly saving of approx. € 700.000, it would improve the financial result and could allow for a positive NPV.

[24] Based on the original projects: NUAC Project Phase 1 Report, and SKAANE Project Feasibility Phase Final Report January 2004.

All financial cost savings in the NUAC/SKAANE Scenario are derived from reductions in air traffic control personnel (ATCO). The total cost savings related to reduction of ATCOs are approx. €1,7 million annually. On the contrary, the annual payroll costs related to the additional management and administrative staff are approx. €–2,5 million, as shown in Figure 9.

Implementation costs related to the NUAC/SKAANE Scenario are estimated to €4,5 million annually for the years 2007-2009.

Altogether, the annual costs are estimated to €–0,8 million, not including one-time costs and savings. These results rest solely on the results identified in the original Nordic UAC and SKAANE projects.

4.2.1 Effects related to Realization of FTE Initiatives

Realization of the cost savings in the FTE initiatives implies a reduction of current operational staff in NUAC/SKAANE Scenario with 20 FTE, whereas an additional staff of management and administration of 39 FTE is required.[25, 26]

Figure 10 Total FTE reductions and natural attrition and staff turnover in NUAC/SKAANE

	Baseline		Total	Implication				Staff turnover and
	Naviair	LFV/ANS		NUAC Company	Outsourcing	Remaining	Reduction	Natural attrition
Initiative 1	5	7	12	2			-2	
Initiative 2	97	95	192	31			-31	
Initiative 3	57	22	79					
Initiative 4	85	75	160					
Initiative 5	21	77	98					
Initiative 6	13	15	28	6			-6	
Initiative 7	12	31	43					
Initiative 8	9	19	28					
Initiative 9	193	380	573				20	
	492	**721**	**1213**	39			-19	253

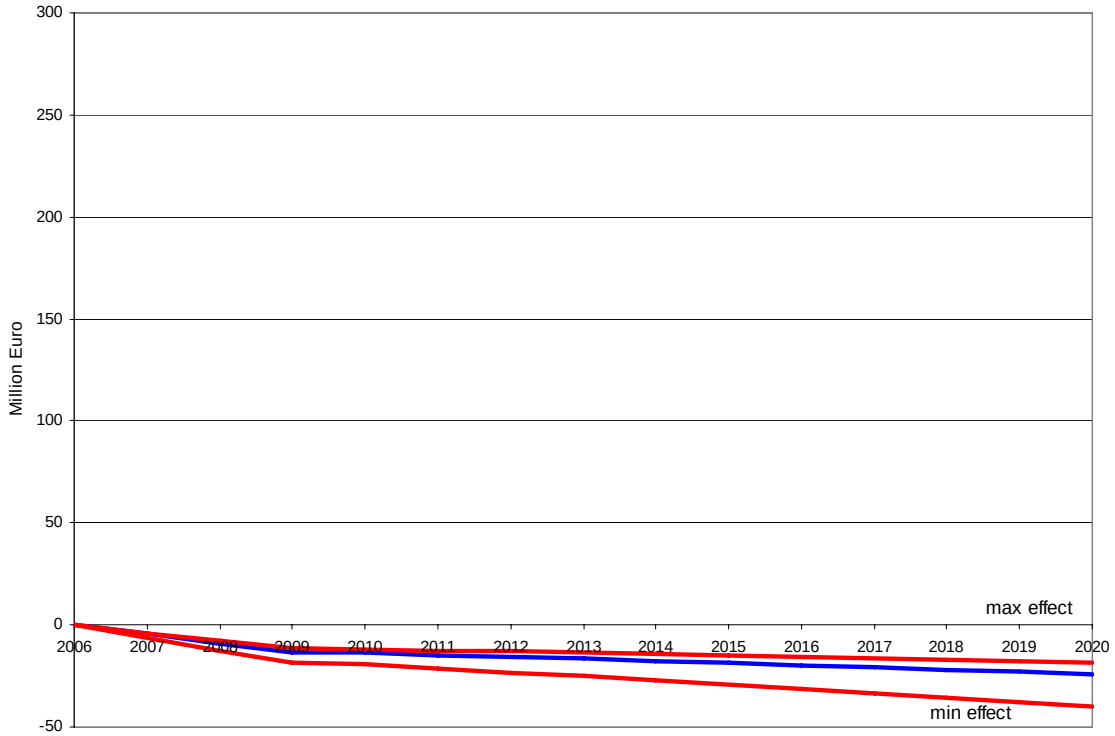
[25] See section 7.2 for details related to assumptions for distribution of age and staff turnover.

[26] As previously stated, 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 level need to be conducted, i.e. specific staff groups must be investigated in the next phase of the project in order to determine the functions and exact number of reductions.

4.3 Cash Flow Summary

The analysis of the NUAC/SKAANE Scenario does not reveal a break-even, as shown in Figure 11, since the Scenario shows a negative result. This is based on the fact that implementation costs and additional payroll costs outweigh the savings in payroll costs occurring from 2011, as described in the previous section.

Figure 11 Cumulative cash flow for NUAC/SKAANE (million Euro)



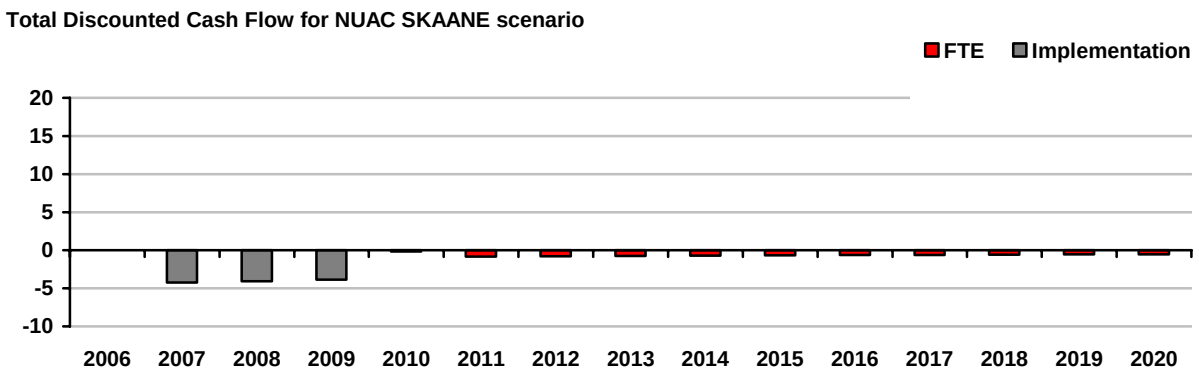
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Max effect	0,0	-3,9	-7,7	-11,6	-11,8	-12,4	-13,1	-13,8	-14,5	-15,2	-15,9	-16,6	-17,3	-17,9	-18,6
Likely effect	0,0	-4,5	-8,9	-13,4	-13,6	-14,6	-15,6	-16,7	-17,7	-18,7	-19,8	-20,8	-21,8	-22,9	-23,9
Min effect	0,0	-6,2	-12,5	-18,7	-19,0	-21,1	-23,2	-25,3	-27,4	-29,4	-31,5	-33,6	-35,7	-37,8	-39,9

The cash flow is negative due to the high implementation costs (from the original SKAANE project), and the fact that savings in FTE related to ATCO personnel occurring in 2011 are outweighed by the payroll costs for the additional required administrative staff in NUAC (the staff requirement for NUAC have been adjusted to reflect the fact that Norway and Finland, which were included in the original Nordic UAC-project, is out of scope in this project).

In addition, no savings related to investments and operating costs of systems have been identified.

As indicated in Figure 12, the annually discounted cash flow remains negative throughout the analysis period from 2006 to 2020.

Figure 12 Discounted cash flow for NUAC/SKAANE Scenario (million Euros)



Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
€ Mil.	0,0	-4,3	-4,0	-3,9	-0,1	-0,8	-0,8	-0,7	-0,7	-0,7	-0,6	-0,6	-0,6	-0,5	-0,5

4.4 Non-Financial Benefits

Previous sections have mainly focused on financial benefits, but implementation of the NUAC/SKAANE Scenario will also result in a number of significant non-financial and qualitative benefits. A number of non-financial and qualitative benefits related to e.g. flight safety, flight efficiency etc. influence the political Air Traffic Management (ATM) environment etc. and should therefore be taken into consideration.

This section describes some of the non-financial and qualitative benefits, which are expected as a result of the implementation of the NUAC/SKAANE Scenario. The non-financial and qualitative benefits are divided into internal and external benefits for the NUAC/SKAANE Scenario[27].

4.4.1 Internal Non-Financial and Qualitative Benefits

LFV/ANS and Naviair's Operational Flexibility

- The NUAC/SKAANE Scenario will only increase the operational flexibility in the functional areas that are handled centrally in the NUAC Company.

Alignment of Business Model

- The Business Model established for NUAC/SKAANE ensures a medium degree of alignment and coherence between the Business Model and the strategic drivers.

Strategic Readiness

- The lack of a common support organisation, combined with a moderate level of operational flexibility and alignment of Business Model, leads to a low level of

[27] Source: Appendix 11 Nordic UAC Input to NUAC Business Case ver. 01.00.pdf, and SKAANE Project Feasibility Phase Final Report January 2004.

strategic readiness in the NUAC/SKAANE Scenario compared to the Merger and Alliance Scenarios.

Attraction and Bargaining Power

- The size of the airspace in the NUAC/SKAANE Scenario offers commercial bargaining power in relation to customers, suppliers as well as alliance partners, but is limited due to the new NUAC Company being established.

4.4.2 External Non-Financial and Qualitative Benefits

Flight Safety

- Some improvements in safety through the harmonisation of rules, procedures and commonly used practices
- Less operational conflicts due to less complexity in a common airspace with procedures adapted to the traffic flow
- A common set of rules and procedures handling all traffic will reduce the number of handovers between controllers in different centres
- One common approach unit in the Oresund region with a common set of rules and procedures handling all traffic for Sturup, Roskilde and Kastrup will result in a higher degree of standardisation and harmonisation and reduce the number of handovers between controllers in different centres.

Flight Efficiency

- High level of optimised flight efficiency due to optimum airspace configuration with regards to time and distance, hence optimal departure and arrival profiles and use of direct routing
- By enabling better predictability in airline operation
- By enabling a more flexible use/better knowledge of segregated airspace
- Arrivals and departure routes in SKAANE area will be improved.

Capacity Improvement

- Through promoting optimisation of airspace structures at a regional level
- By creating a basis for a more coherent and optimised route network
- Through the improved operational environment for coordination
- Quicker release and hand-over of military/civilian airspace provided by interoperable systems and common rules and procedures.

Customer Orientation

- A NUAC/SKAANE Scenario can reduce required customer interaction due to establishment of a common area control service flight level above 28.500 ft, combined with one approach and low area control service for the SKAANE area in Copenhagen.

Socio-Economics

- The establishment of a single cross-border multinational provider of Air Navigation Services in the upper airspace is in line with the political desire to establish a more

suitable air transport system as stated in the Danish and Swedish vision – i.e. “Dansk Luftfart 2015 – muligheder og udfordringer” and “Moderna transporter - transportpolitisk proposition 2006”
- A single cross-border provider is in accordance with the Single European Sky legislation, which aims towards establishing a common airspace
- More direct flight paths given shorter flying times and thus lower fuel consumption.

Environment

- Optimised profiles for entering and leaving airspace result in improved environment through more direct flights, less fuel consumption and thus less emission of CO2, SO2 and NOX
- Outside economics and emissions the total amount of noise imposed upon society by aircrafts will be reduced through shorter flight time/distance.

5 Business Case – Alliance

This section contains the Business Case for the Alliance Scenario, hence the financial and non-financial benefits related to implementation of the Scenario.

5.1 Assumptions

- The Alliance Scenario is designed to form a strong alliance, considering no transfer of employees directly related to the carrying out of Air Traffic Services to the NUAC Alliance Company
- General assumptions and principles used in the Merger Scenario, including assumptions regarding resignation of administrative and technical support staff and redundancies, are used in the Alliance Scenario
- LFV/ANS and Naviair remain in their current positions
- A NUAC Alliance Company is established to support increased cooperation as well as to undertake selected shared service activities where possible and financially beneficial
- The NUAC Alliance Company will only include shared services, which are not necessary internally within LFV/ANS and Naviair in order to maintain individual certification and designation for carrying out Air Traffic Services
- Tower services and infrastructure ownership will remain as currently within LFV/ANS and Naviair
- Ownership of the NUAC Alliance Company will be split evenly between LFV/ANS and Naviair (50/50 initially)
- Certification and designation remain within LFV/ANS and Naviair. No certification and designation of the NUAC Alliance Company is possible unless a joint agreement and concession from and between the National Supervisory Authorities under the provision of the EU Common Requirements
- Effects from initiatives in the Alliance Scenario are based on the premise that the NUAC Alliance Company cannot retain tasks that depend on certification and designation
- Implementation of terminal radar approach control (TRACON)[28] in the SKAANE cross-border area will require an organisation that can manage this cross-border. This is not deemed possible under the organisational assumptions laid out in the Alliance Scenario
- The maintained division of the operational organisations means that both supervisor positions and flow positions must be maintained in both organisations
- Based on the above assumptions and on the “NUAC Programme Airspace Design Report” regarding consolidation of positions, it is estimated that the required amount

[28] Terminal Radar Approach CONtrol, utilizing both radar approach control functions, feeder/stacker positions and even, in case of preference, some en-route sectors.

of ATCO and ATCO support positions in the Alliance Scenario equals 109 working positions[29].

5.2 Financial Impact

The net present value (NPV) related to the implementation of the Alliance Scenario from 2006-2020 is a total of approx. €68,8 million. Payback period for the Alliance Scenario is projected as approx. 5,5 years, and internal rate of return (IRR) at 40%.

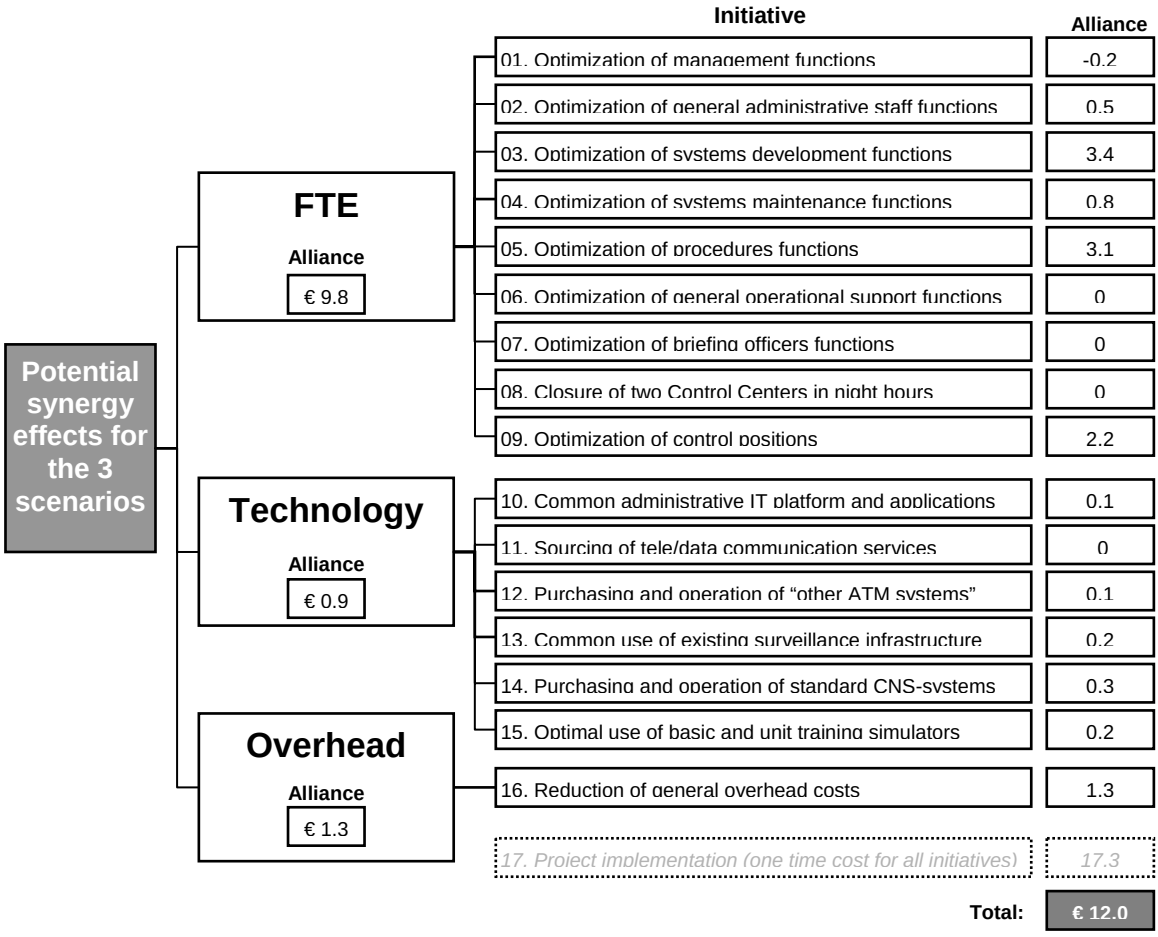
Figure 13 Financial results for Alliance Scenario

	NPV	IRR	Payback time
Alliance	€68,8 million	40%	2011 – 5,5 years

An estimation of the annual saving potentials in the Alliance Scenario in 2020 reveals that annual savings are derived primarily from Optimization of staff functions “FTE” with total annual cost savings of approx. €9,8 million, corresponding to 82% of the total cost savings in 2020, and cost savings related to “Technology” equals approx. €1,0 million, corresponding to 8% of the total cost savings in 2020, whereas reduction of general overhead costs “Overhead” are estimated at approx. €1,3 million, as shown in Figure 14 below, corresponding to 10% of the total cost savings in 2020.

[29] Note that there is a possibility for improvements in the airspace for the Alliance Scenario, but this must be further investigated in the next phase (e.g. establishment of TRACON Stockholm).

Figure 14 Estimated annual savings in 2020 (million Euros) in Alliance Scenario



The savings potential in the Alliance scenario is a result of the fact that LFV/ANS and Naviair will remain as two separate companies – hence both companies will have to obtain certification and designation, and also maintain the necessary administrative staff functions within the respective companies.

As shown in Figure 14, the largest projected benefit derives from initiatives related to Optimization of staff functions ("FTE"). As described in the respective "FTE"-initiatives[30], the primary sources for potential savings are:

- *Elimination of duplicate functions*: Based on the fact that some duplicate positions (management etc.) will occur as in the functional areas included in the Alliance
- *Increased effectiveness*: Optimization of current processes through harmonization and standardization of the processes included in the alliance, hereby reducing current workload.
- *Sourcing solutions for non-core processes*: All non-core processes are sourced from third party if this is considered possible and financially beneficial.

The second largest projected benefit in the Alliance Scenario derives from "Technology"-related initiatives. The total annual benefit potential related to the "Technology"-initiatives is approx. € 0,9 million. Cost savings related to these initiatives are realized through common

[30] For a detailed description of the initiatives, see "Appendix 2: Business Case – Initiatives".

future purchasing, due to improved bargaining power, reduced adjustment costs and implementation costs (external consulting services) etc. The estimated savings potential related to the technology initiatives are lower than the Merger Scenario due to a lower degree of standardization and consolidation. This is primarily due to the fact that LFV/ANS and Naviair are assumed to remain as separate companies – hence both companies will have to obtain certification and designation for en-route and terminal services.

Finally, the annual cost savings related to "Overhead" costs amounts to a total of approx. €1,3 million. The cost savings related to general overhead is a direct effect of the reduction in required personnel of 104 FTE.

5.2.1 Effects related to Realization of FTE Initiatives

Realization of the cost savings in the "FTE"-initiatives implies a reduction of current staff in the Alliance Scenario with 104 FTE, exclusive 144 FTE who are proposed to be sourced from third parties. As indicated in Figure 69, the total reduction of 104 FTE are all expected reduced through natural attrition and general staff turnover, due to the fact that 253 FTE are expected to resign in the period 2008 to 2011[31, 32].

Figure 15 Total FTE reductions and natural attrition and staff turnover in Alliance

	Baseline		Total	Implication				Staff turnover and
	Naviair	LFV/ANS		Alliance	Outsourcing	Remaining	Reduction	Natural attrition
Initiative 1	5	7	12	2		12	-2	
Initiative 2	97	95	192	3		182	7	
Initiative 3	57	22	79	35			44	
Initiative 4	85	75	160	3	144	17	-4	
Initiative 5	21	77	98	47		17	34	
Initiative 6	13	15	28			28		
Initiative 7	12	31	43			43		
Initiative 8	9	19	28			28		
Initiative 9	193	380	573			548	25	
	492	**721**	**1213**	90	144	875	104	253

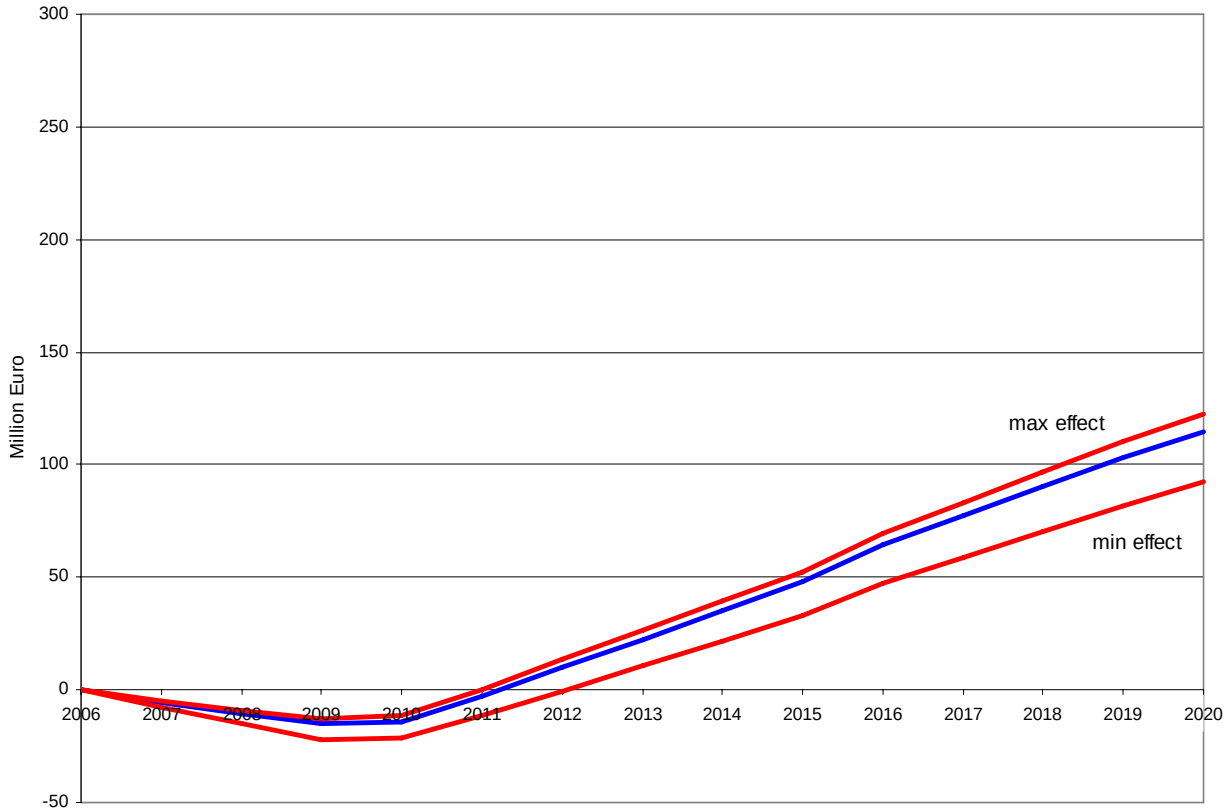
5.3 Cash Flow Summary

As illustrated in Figure 16, the Alliance Scenario reveals a break-even in 2011. This fact has to do with implementation costs, which occur from year 2006 to 2008, and the savings in payroll costs occurring from 2011, outweighing the severance costs and implementation costs. The break-even point is considered with some uncertainty due to the variance in the effects of the individual initiatives.

[31] See section 7.2 for details related to assumptions for distribution of age and staff turnover.

[32] As previously stated, 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 level need to be conducted, i.e. specific staff groups must be investigated in the next phase of the project in order to determine the functions and exact number of reductions.

Figure 16 Cumulative cash flow for Alliance Scenario (Million Euros)

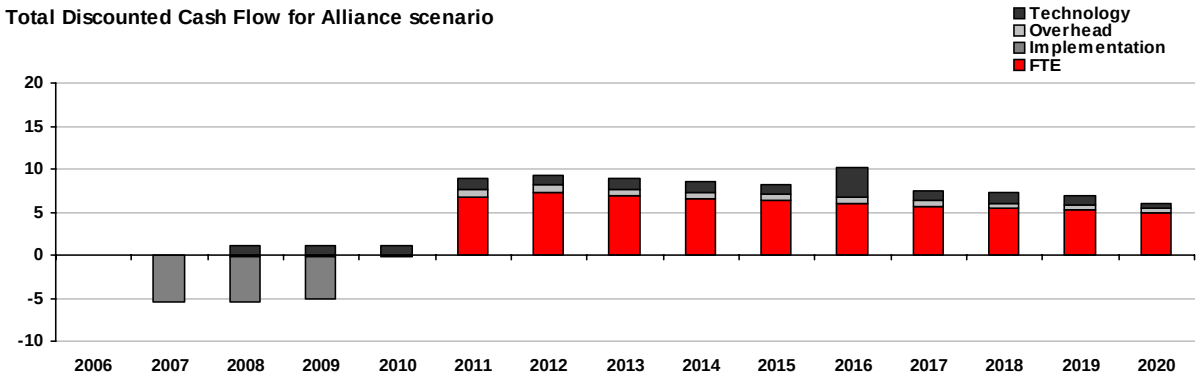


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Maximum effect	0,0	-4,9	-8,9	-12,7	-11,4	0,4	13,4	26,5	39,5	52,7	69,8	83,2	96,6	110,0	122,3
Likely effect	0,0	-5,7	-10,4	-15,1	-13,9	-2,6	10,0	22,5	35,1	47,8	64,3	77,2	90,1	103,1	115,0
Minimum effect	0,0	-8,0	-15,2	-22,4	-21,4	-11,7	-0,6	10,6	21,7	32,9	47,6	59,0	70,5	81,9	92,5

As indicated in Figure 16, an increase in cost savings related to systems and technology ("Technology") occurs in 2016. The cost savings relate to avoidable investment costs related to 'other ATM systems'.[33]

[33] For a detailed description, see initiative 12C in "Appendix 2: Business Case – Initiatives".

Figure 17 Total discounted cash flow for Alliance Scenario (Millions Euros)



Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
€ Mil.	0,0	-5,4	-4,3	-4,0	1,0	8,9	9,3	8,9	8,5	8,2	10,1	7,5	7,2	6,9	6,0

5.4 Non-Financial and Qualitative Benefits

Previous sections have mainly focused on financial benefits but implementation of the Alliance Scenario will also result in a number of significant non-financial and qualitative benefits. A number of non-financial and qualitative benefits related to e.g. safety, flight efficiency etc. influence the political Air Traffic Management (ATM) environment etc. and should therefore be taken into consideration.

As previously stated, it is assumed that current operational air navigation in the Alliance Scenario remains largely intact within LFV/ANS and Naviair, due to the fact that the implementation of terminal radar approach control (TRACON)[34] in the SKAANE cross-border area covers the two major airports Sturup and Kastrup. This TRACON will cover airports in Sweden and Denmark and will require an organisation that can manage this cross-border.

The assumption implies that if the pre-conditions for the Alliance Scenario are changed then improvements in the current flight efficiency, capacity improvement and environmental impact can be achieved.

This section describes some of the non-financial and qualitative benefits, which are expected as a result of the implementation of the Alliance Scenario. The non-financial and qualitative benefits are divided into internal and external benefits for the Alliance Scenario:

[34] Terminal radar approach control, utilizing both radar approach control functions, feeder/stacker positions and even, in case of preference, some en-route sectors.

5.4.1 Internal Non-Financial and Qualitative Benefits

Operational Flexibility

- Some increase in flexibility, since a common and flexible resource pool is established for support functions. This allows the organisation to respond to changes in a future strategic environment.

Alignment of Business Model

- The Business Model of the Alliance organisation is designed to form the strongest possible alliance. This ensures the best possible alignment and coherence between the Business Model and strategic drivers considering that no transfer of employees directly related to air traffic control to the NUAC Alliance Company will take place.

Strategic Readiness

- Some improvements in strategic readiness due to the common support organisation. The degree of operational flexibility and alignment in the Business Model might improve the level of agility and readiness to adapt opportunities in the ATM industry – i.e. new services, acquisitions etc.

Attraction and Bargaining Power

- The size and strategic importance (of airspace) of the Alliance offer a high degree of commercial bargaining power in relation to customers, suppliers as well as alliance partners.

5.4.2 External Non-Financial and Qualitative Benefits

Flight Safety

- Improved safety through some common uniform operational rules and procedures due to a common operational understanding of the regulatory environment
- Less operational conflict intervention with reduced complexity in one single airspace with some degree of common airspace management.

Flight Efficiency

- Optimization of routing through the use of a larger and more flexible airspace will reduce distance and time and thus enable more efficient flight profiles
- More efficient and economic profiles for entering and leaving airspace due to the coordinated and systematic approach to adjacent areas
- Development of procedures and tools, which support en-route to en-route processes due to common and flexible solutions for regulating airport flow in the area, minimising the delay in terminal areas and on the ground
- More flexible route structuring with direct entry/exit point flights in the area

- Improved possibility of establishing civilian and military cross-border areas due to the factual abolishment of adherence to national boundaries between the countries involved
- Quicker release and hand-over of military/civilian airspace provided by interoperable systems and common rules and procedures

Capacity Improvement

- Optimized use of airspace structures might result in capacity increase due to more efficient and flexible use of the entire airspace
- Consistent and optimized route network will align traffic flows in the area, which will hold more traffic as the alignment of the traffic flows will reduce coordination and the necessity for rerouting, which is cause of delay in the air and on the ground
- Improved operational cooperation due to the abovementioned consistency and common understanding.

Customer Orientation

- No direct benefits in customer orientation, since the Alliance solution focuses on improvements in the support functions that are not dependant on designation and certification, except for a possible benefit in having a common procedures entity.

Socio-Economics

- Establishment of an alliance is somewhat in line with the political desire to establish a more suitable air transport system as stated in the Danish and Swedish vision.

Environment

- Optimized profiles for entering and leaving airspace result in improved environment through more direct flights, less fuel consumption and thus less emission of CO2, SO2 and NOX
- Outside economics and emissions the total amount of noise imposed upon society by aircrafts will be reduced through shorter flight time/distance.

6 Conclusion

This section provides an assessment of the financial and non-financial and qualitative benefits of a more formalized cooperation between LFV/ANS and Naviair for the three Scenarios.

6.1 Financial Impact

A comparison of the three Scenarios reveals that the Merger Scenario realizes a positive net present value (NPV[35]) of €153,9 million, the Alliance Scenario a positive NPV of €68,8 million, whereas the NUAC/SKAANE Scenario results in a negative NPV of €–18,9 million, in the fiscal years 2006 through 2020, with a discount rate of 5%.

The Merger Scenario shows an internal rate of return (IRR[36]) of 51%, and the Alliance Scenario an IRR of 40% (IRR is not defined for the NUAC/SKAANE Scenario since the result is negative).

Figure 18 Financial results of the 3 Scenarios

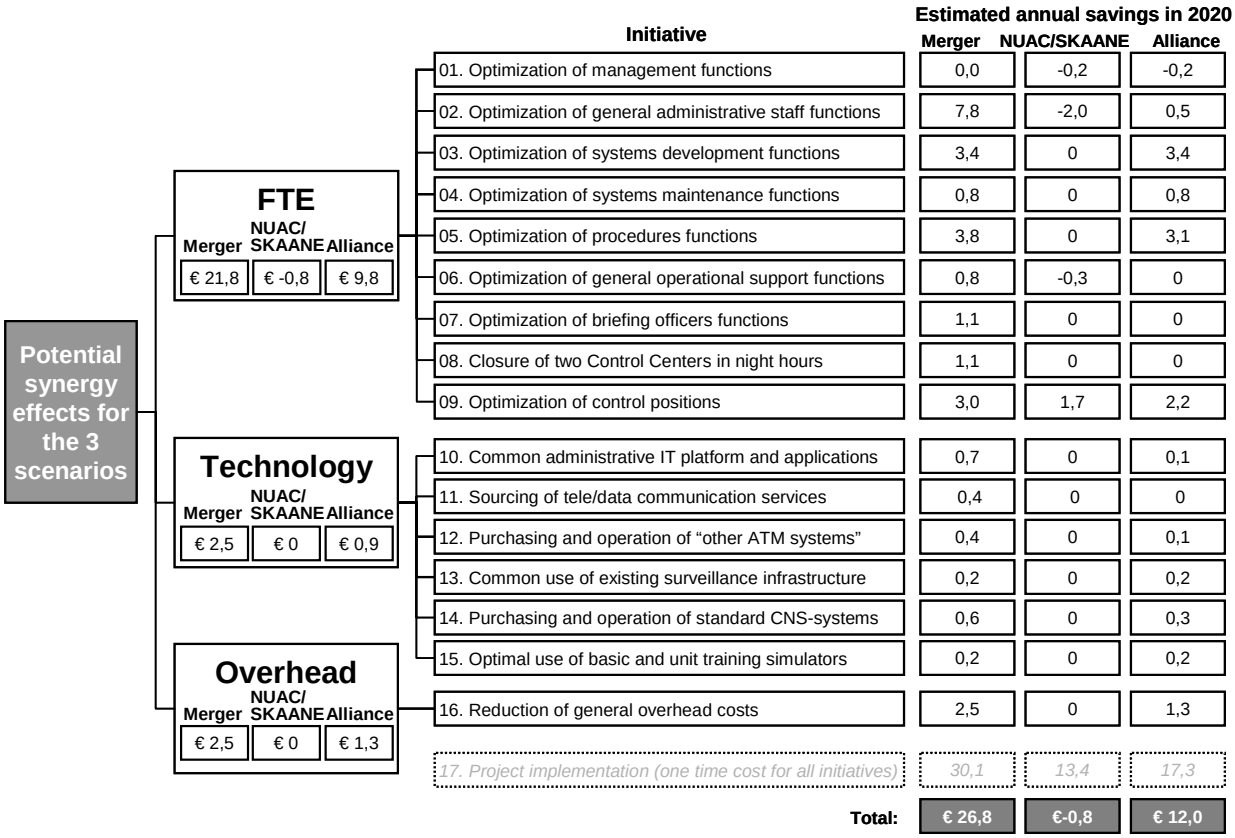
	NPV	IRR	Payback time
Merger	€153,9 million	51%	2011 – 5 years
NUAC/SKAANE	€–18,9 million	–	–
Alliance	€68,8 million	40%	2011 – 5,5 years

An estimation of the annual saving potentials in 2020 reveals that annual savings in the Merger Scenario are more than three times the annual savings in the Alliance Scenario, as illustrated in Figure 19 below.

[35] NPV represents total cash flow across the analysis period, adjusted to reflect the time value of money. Other things being equal, the action or investment with the larger NPV is the better option.

[36] Internal Rate of Return (IRR) is a financial metric that reflects the time value of money (like NPV). The IRR for an investment is the discount rate for which the total present value of future cash flows equals the cost of the investment. It is the interest rate, that produces a 0 NPV i.e. the IRR describes the maximum rate that would result in the investment being defined as beneficial.

Figure 19 Estimated annual savings in 2020 (million Euros)



As illustrated in Figure 19 the total savings in the respective Scenarios are: €26,8 million in the Merger Scenario, €–0,8 million in NUAC/SKAANE and €12,0 million in the Alliance Scenario.

In the Merger Scenario €21,8 million in annual cost savings are derived from "FTE"-initiatives (FTE – Full Time Equivalents), corresponding to 82% of total cost savings in 2020, whereas the savings potential in the Alliance Scenario from "FTE"-initiatives constitute €9,8 million, corresponding to 82% of the total cost savings in 2020. Savings related to payroll costs are primarily realized through harmonization and standardization of current processes, 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 will remain as two separate companies in the Alliance Scenario – hence both companies will have to obtain certification and designation for en-route and terminal services, and also maintain the necessary administrative staff functions within the respective companies. In addition, potential savings are reduced due to the assumption that the Alliance Company will not include any operational activities related to core business - Air Navigation Services.

"Technology"-related initiatives constitute annual cost savings of €2,5 million, corresponding to 9% of the cost savings in the Merger Scenario. In comparison, annual cost savings within "Technology" in the Alliance Scenario constitute a total of € 0,9 million, corresponding to 8% of the cost savings in the Alliance Scenario. Cost savings related to technology initiatives are mainly realized through standardization, harmonization 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 standardization and consolidation of systems and infrastructure. This is primarily due to the fact that LFV/ANS and Naviair are assumed to remain as separate companies – hence both companies will have to obtain certification and designation for en-route and terminal services.

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 €2,5 million, due to a reduction of 204 FTE, compared to €1,3 million in the Alliance Scenario, with a reduction of 104 FTE.

6.1.1 Effects related to Realization of FTE Initiatives

Realization of the cost savings in the "FTE"-initiatives implies a reduction of current staff in the Merger Scenario with 377 FTE. Of these 377 FTE, 204 FTE are reduced, while 173 FTE are proposed to be sourced from third parties. As indicated in Figure 20, the total reduction of 204 FTE is expected reduced through natural attrition and general staff turnover[37]. In comparison, the NUAC/SKAANE and Alliance Scenario result in a reduction of 20 FTE (and an additional hiring of administration and management staff of 39 FTE) and 104 FTE respectively, all expected to be reduced through natural attrition and general staff turnover.

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 must be investigated in the next phase of the project in order to determine the functions and exact number of reductions.

Figure 20 Staff reductions and natural attrition and staff turnover for the 3 Scenarios

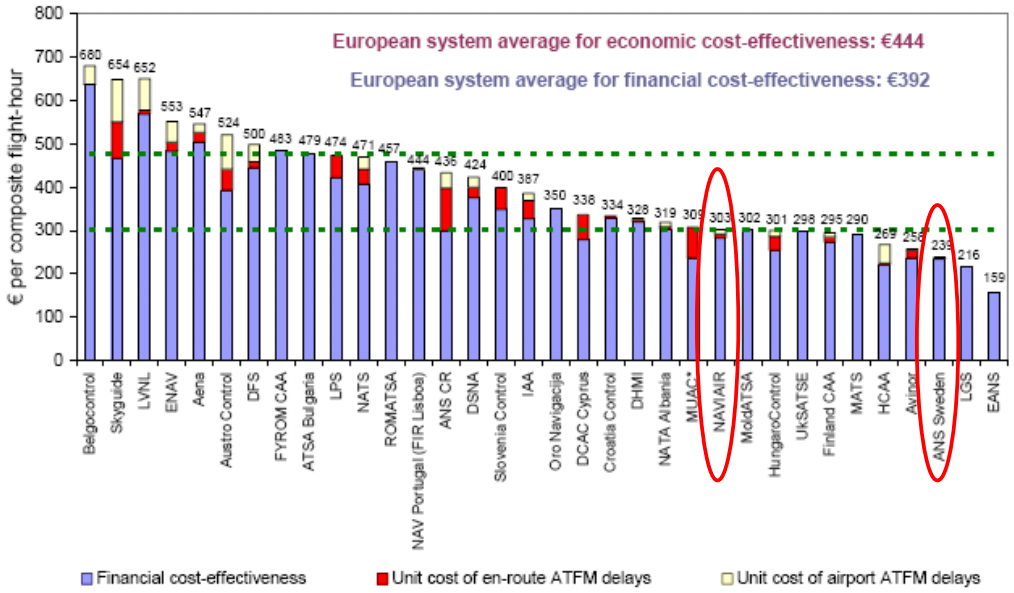
	Baseline			Merger		NUAC/SKAANE		Alliance		Staff turnover and
	Naviair	LFV/ANS	Total	Outsourcing	Reduction	Outsourcing	Reduction	Outsourcing	Reduction	Natural attrition
Initiative 1	5	7	12	0	0		-2	0	-2	
Initiative 2	97	95	192	29	44		-31	0	7	
Initiative 3	57	22	79	0	44		0	0	44	
Initiative 4	85	75	160	144	-4		0	144	-4	
Initiative 5	21	77	98		41		0	0	34	
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**	**204**	**0**	**-19**	**144**	**104**	**253**

[37] See section 7.2 for details related to assumptions for distribution of age and staff turnover.

6.1.2 Comparison with other Air Navigation Service Providers

When comparing economic cost-effectiveness and financial cost-effectiveness[38], both LFV/ANS and Naviair belong to the lowest third of the European Air Navigation Service providers, as illustrated in Figure 21. Considering the high cost-effectiveness in LFV/ANS and Naviair the potential cost savings identified in the Business Case are significant.

Figure 21 Economic cost-effectiveness among European Air Navigation Service Providers



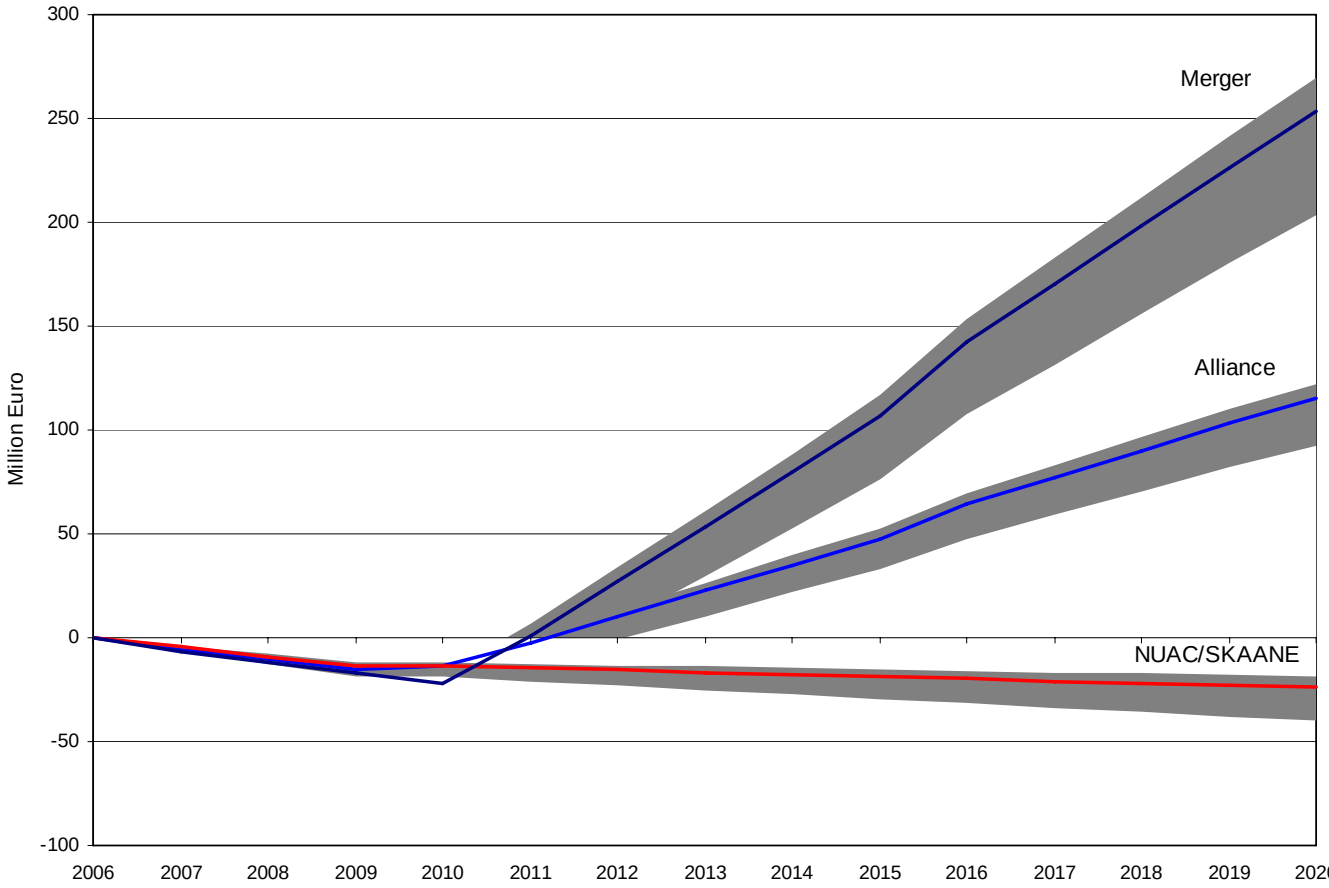
Financial cost-effectiveness is defined as a measure of the service provision costs per unit output. It does not capture the additional costs borne by airspace users that are linked to ANSP service quality. Economic cost-effectiveness includes those costs, which arise from ATFM ground delays, but not those that arise from other aspects of service quality, such as lack of flight efficiency and airborne delays. Both key performance indicators are widely accepted as the most accurate comparison of cost-effectiveness performance between service providers. Thus it is important to recognize that the savings outlined in the Business Case Scenarios in the NUAC programme are identified on the basis of two of the current service providers with the highest cost-effectiveness in EUROCONTROL measures.

6.1.2.1 Cash Flow Summary

As illustrated in Figure 22 the Merger Scenario reaches break-even in 2011, based on the fact that the majority of the initiatives will have financial effect from primo 2011, giving a break-even point after 5 years. The Alliance Scenario also has its break-even point in 2011, but has relatively higher implementation costs compared to the benefits realized in the initiatives. The implementation costs related to the Merger Scenario are approx. €30,1 million, distributed over the first four years of implementation – i.e. 2007 to 2011. In comparison, the costs related to implementation of the Alliance Scenario are approx. €17,3 million, due to a relatively smaller scope of integration of systems, process designs etc. As previously stated, the relatively high project implementation costs related to the Merger Scenario are more than outweighed by the high cost savings in the Scenario, giving a break even point after four years.

[38] Source: ”ATM Cost Effectiveness (ACE) 2004 Benchmarking Report”, EUROCONTROL, 2006.

Figure 22 Most likely cumulative cash flows and sensitivity per Scenario (million Euros)



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Merger	0,0	-6,9	-12,2	-17,2	-22,4	0,9	27,1	53,3	79,6	107,0	142,3	170,2	198,2	226,3	253,1
NUAC/ SKAANE	0,0	-4,5	-8,9	-13,4	-13,6	-14,6	-15,6	-16,7	-17,7	-18,7	-19,8	-20,8	-21,8	-22,9	-23,9
Alliance	0,0	-5,7	-10,4	-15,1	-13,9	-2,6	10,0	22,5	35,1	47,8	64,3	77,2	90,1	103,1	115,0

As indicated by the span of cumulative cash flow per Scenario in Figure 22, the sensitivity related to the Merger Scenario is higher than in the Alliance Scenario. This is based on the fact that the implementation risks combined with the variance related to the estimated potential benefits are relatively higher than in the Alliance Scenario[39].

[39]Sensitivity is defined by the risks related to implementation of the Scenarios and the variance related to the estimated benefit potentials. See Appendix 1 – Business Case - section 7.1 for further details on sensitivity analysis. Due to the fact that the risks identified in the various initiatives in the three Scenarios relates to different aspects, combined with fact that the risk assessment covers a different amount of risks, it is not possible to make a direct comparative evaluation of the sensitivity in the three Scenarios.

6.2 Non-Financial and Qualitative Effects

An assessment of the internal and external non-financial and qualitative effects – reflected by the strategic rationales in Figure 23 – reveals that the Merger Scenario has the relatively highest score among the three Scenarios, Alliance Scenario second highest, and NUAC/SKAANE the lowest score.

Figure 23 Non-financial and qualitative effects

Strategic Rationale		Merger	NUAC/ SKAANE	Alliance
INTERNAL	Cost effectiveness	High	Low	Low/Medium
	Operational flexibility	High	Low/Medium	Medium
	Alignment of business model	High	Medium	Medium/High
	Strategic readiness	High	Low/Medium	Medium
	Attraction and bargaining power	High	Low/Medium	Medium
EXTERNAL	Safety	High	Medium/High	High
	Flight Efficiency	High	Medium/High	High
	Customer orientation	High	Medium	Medium
	Political and social effects	High	Medium	Medium
	Environment	Medium/High	Medium/High	Medium/High

6.2.1 Internal Non-Financial and Qualitative Effects

As indicated in Figure 23, the Merger Scenario achieves the highest relative score among the three Scenarios within all the internal strategic drivers – i.e. operational flexibility, alignment of Business Model, strategic readiness etc.

A common flexible resource pool within selected support functions combined with a high degree of alignment between the Business Model and strategic drivers in the Alliance Scenario entail a higher score on the internal perspective than within the NUAC/SKAANE Scenario.

6.2.2 External Non-Financial and Qualitative Effects

In relation to the external strategic drivers – i.e. safety, flight efficiency etc. – the Merger Scenario achieves the highest relative score among the three Scenarios. The high score in the Merger Scenario is based on an optimized use of airspace, combined with common uniform operational rules and procedures etc.

7 Appendices

7.1 Sensitivity Analysis

The purpose of the sensitivity analysis is to evaluate the sensitivity of the financial results of the Business Case according to the initiative risks identified in the risk assessment. Another purpose is to display the effects on the Business case of the combined risks for all initiatives for the 3 scenarios.

In order to estimate the sensitivity and, thus, the risk to the economic viability, all input values defined as uncertain are included both in the common analysis represented by their most likely value and separately in the sensitivity calculations. These input values are estimated with a minimum and a maximum value to give an impression of the uncertainty span. Furthermore, these values are defined on a probability distribution. For this specific simulation it was assumed that all risk parameters were best described with a skewed triangular distribution. This means that one estimate is accepted as the most likely outcome, a minimum and a maximum estimate is accepted as the marginal value to give an impression of the uncertainty span in the financial results.

The triangular distribution is the most appropriate choice whenever the relationship between minimum and maximum estimates is difficult to determine. The skewed triangular distribution describes the situation where the probability of getting a result lower than the best estimate is greater than getting better results e.g. it might be natural to assume that there is a higher probability that a project will be more expensive than expected, compared to probability of being less expensive.

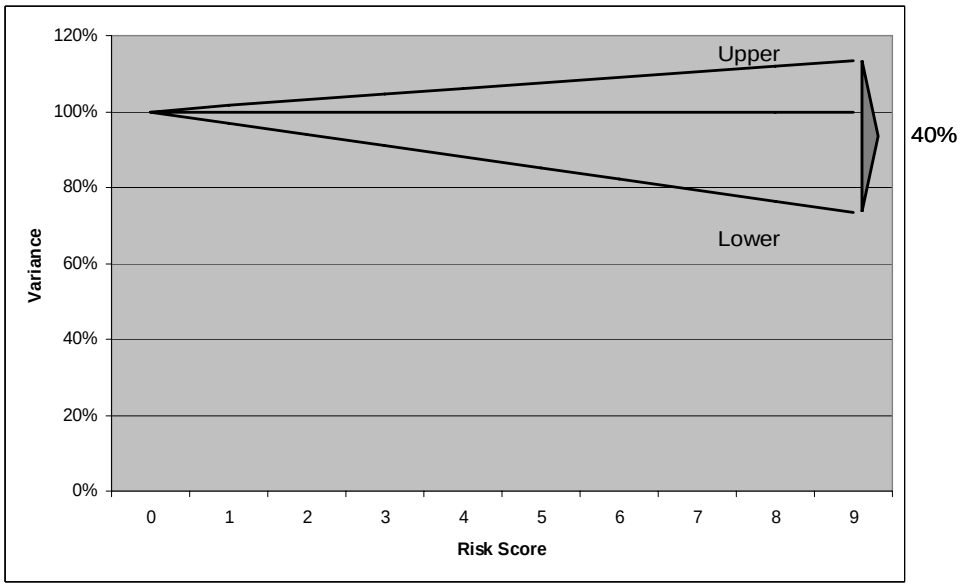
Variance on the effects of the initiatives is defined by the impact and probability for risks related to realization of benefits in the implementation of the respective initiatives in each scenario, determined in the risk analysis[40]. A risk score is derived from probability and impact for each risk in the initiative in each scenario e.g. the risk for an initiative is “Increased staff turnover” which is estimated to have medium probability and high impact i.e. probability 2 and impact 3 which gives total risk score of 6 (Low score is 1, Medium score is 2 and High score is 3). These are used to calculate a total risk score for each initiative.

Furthermore the variance depends on the uncertainty in the data used as a base for the calculations of the individual cost and benefits i.e. effects are adapted to reflect the confidence in the estimates for the results for the initiatives. Therefore if a high risk is assumed for the initiative in each scenario, a corresponding high variance is used in the sensitivity analysis. Similarly a medium variance is used if the risk is determined to be medium, and a low variance for effects from initiatives with low risk.

A 30% probability of giving a result worse than the best estimate compared to 10% probability a results better than the best estimate has been identified as a best judgment for the skewed triangular distribution in order to investigate a worst case situation.

[40] See “Appendix 2: Business Case – Initiatives” for further details on risk analysis.

Figure 24: Correspondence between risk score and variance

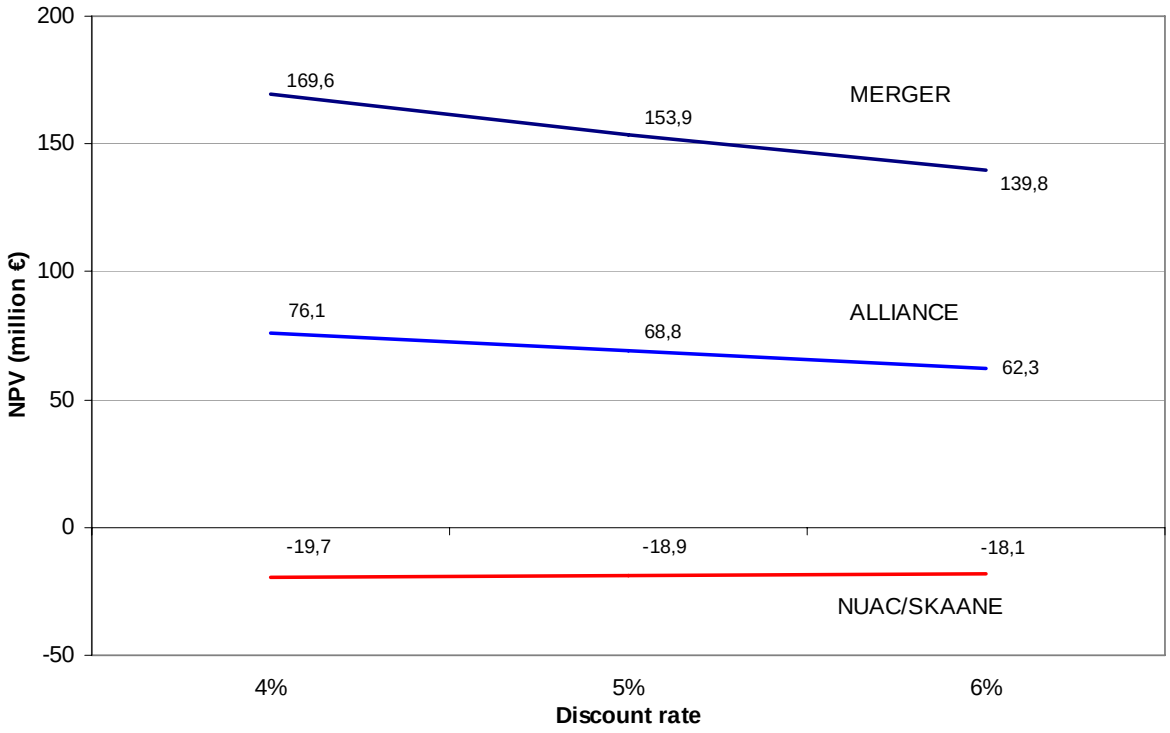


The simulations are performed 1000 times, drawing random values from the triangular distribution and calculating the combined effects on the Business Case results (1000 times are considered statistically sufficient to ensure that the simulated result reflect the expected average and sensitivity and minimize effects from unusual results).

The results of the sensitivity analysis are presented as an average of the simulations as well as a worst case and best case result (also known as Monte Carlo simulation).

In order to estimate the sensitivity and, thus, the risk to the economic viability, the discount rate is investigated in the interval 4% to 6%. The result is shown in Figure 25 below. Since the results for the Merger scenario reveals the highest NPV result is also the most sensitive to changes in the discount rate.

Figure 25: Sensitivity analysis for discount rate and NPV



In general, sensitivity analysis may also include variance on the timing of both costs and benefits and when these will occur. The reason for not implementing uncertainty on the timing of the benefits in this phase of the project is that processes are described on level 0 and 1 only, and the implementation of the initiatives is not planned in detail. Furthermore a significant amount of variance exists in the estimation of the effects, which makes it difficult to assess the consequences of uncertainty on the timing of the benefits. Therefore it is considered sufficient to define uncertainty on the effects of the initiatives and not the timing of the effects.

Dependencies between initiatives are not included in the sensitivity analysis, since most initiatives will have impact beginning at the implementation of NUAC, and since there is defined no variance on the timing, there will be no impact on dependencies to other initiatives.

7.2 Distribution of Age in Naviair and LFV/ANS

This section describes the reduction of personnel through natural attrition and staff turnover. Redundant personnel identified in the initiatives are considered as a source for staff reduction. If possible, the reduction of staff is accommodated through natural attrition. It is noted that the numbers used define the year-by-year age distributions of the personnel if no activities are performed in order to adapt to future manning needs, assuming that employees will retire at the age of 60, and not including staff turnover. In 2006 a total of 63 employees are older than the age of 60[41].

[41] Source: “Appendix 3: Allocation of staff to functional groups” calculated as part of the initiative calculations in the Business Case, together with dates of birth for employees in Naviair and LFV/ANS.

If assuming an additional staff turnover of approx. 5% in general[42], the number of leaving staff will increase significantly. Based on the above stated assumptions and total number of reductions it seems possible to accommodate the reduction in operational manning needs through natural attrition.

Furthermore it is also assumed possible to reduced support personnel and technical personnel entirely through natural attrition and staff turnover. Total number of reduction in Management/Administration personnel, together with reductions in Technical personnel and Operational support for the 3 scenarios are given in Table 4 below. A total of 173 and 144 FTE are sourced from third party in the Merger and Alliance scenarios respectively[43]. These are not accounted for in the number of reductions.

[42] LFV/ANS currently has a staff turnover of approx. 5%, Naviair has a staff turnover of approx. 9%, determined through interviews with experts from the current organizations.

[43] See Description of the Initiatives for the scenarios in appendix 2, specifically initiative 4: Optimization and re-design of technical staff functions - Systems Maintenance and Supervision.

Table 4 Total number of reductions in scenarios

Merger

	Baseline		Total	Implication				Staff turnover and
	Naviair	LFV/ANS		NUAC Company	Outsourcing	Remaining	Reduction	Natural attrition
Initiative 1	5	7	12	9		3		
Initiative 2	97	95	192	99	29	20	44	
Initiative 3	57	22	79	35			44	
Initiative 4	85	75	160	3	144	17	-4	
Initiative 5	21	77	98	40		17	41	
Initiative 6	13	15	28	15			13	
Initiative 7	12	31	43	25			18	
Initiative 8	9	19	28	15			13	
Initiative 9	193	380	573	538		0	35	
	492	**721**	**1213**	779	173	57	204	253

NUAC/SKAANE

	Baseline		Total	Implication				Staff turnover and
	Naviair	LFV/ANS		NUAC Company	Outsourcing	Remaining	Reduction	Natural attrition
Initiative 1	5	7	12	2			-2	
Initiative 2	97	95	192	31			-31	
Initiative 3	57	22	79					
Initiative 4	85	75	160					
Initiative 5	21	77	98					
Initiative 6	13	15	28	6			-6	
Initiative 7	12	31	43					
Initiative 8	9	19	28					
Initiative 9	193	380	573				20	
	492	**721**	**1213**	39			-19	253

Alliance

	Baseline		Total	Implication				Staff turnover and
	Naviair	LFV/ANS		Alliance	Outsourcing	Remaining	Reduction	Natural attrition
Initiative 1	5	7	12	2		12	-2	
Initiative 2	97	95	192	3		182	7	
Initiative 3	57	22	79	35			44	
Initiative 4	85	75	160	3	144	17	-4	
Initiative 5	21	77	98	47		17	34	
Initiative 6	13	15	28			28		
Initiative 7	12	31	43			43		
Initiative 8	9	19	28			28		
Initiative 9	193	380	573			548	25	
	492	**721**	**1213**	90	144	875	104	253

Table 5 FTEs retiring and reduced through natural attrition assuming 5% staff turnover in Naviair and LFV/ANS

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	**0**	**88**	**88**	**82**	**83**	**89**	**71**	**83**	**91**	**76**	**72**	**86**	**69**	**63**	**72**