NUAC Programme
Definition Phase Final Report

Appendix 2
Business Case Initiatives

FEBRUARY 2007

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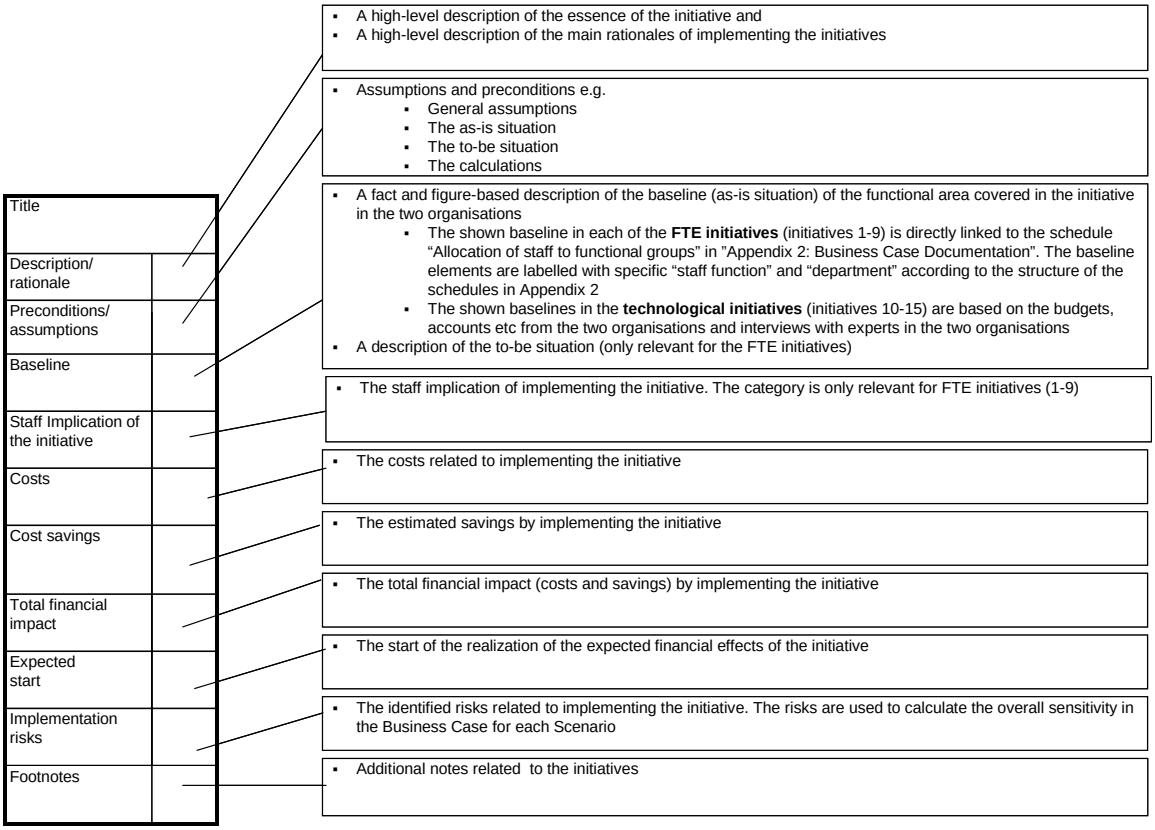
1 Introduction and reader's guideline

This appendix contains a detailed description of each initiative evaluated in the Business Case for each of the three Scenarios. The appendix is structured into three chapters containing each Scenario and its initiatives. All initiatives are described on the basis of an identical template (see Figure 1) containing: a high-level description, rationale, potential benefits and costs related to implementation of the initiatives. Additional information e.g. assumptions, baseline etc. are included in order to estimate the financial implication of the initiatives.

Figure 1 The structure and content of each initiative description



In order to establish a valid and fact-based Business Case, data collection and validation have been highly prioritised. The initiatives are based on two different types of data:

- data related to the establishment of a valid *baseline situation*, which describes the as-is situation in the specific functional areas of the two organisations, and
- data related to the estimation of the *financial impacts* of the initiatives, which states the benefits and costs related to the implementation of the initiative.

The Business Case is based on various sources of data aiming to build a valid and unbiased understanding, including:

- **Existing organizational and financial data** of the two organizations, e.g. organization charts, age distributions, payroll costs, complete staff lists including distribution of functional areas, budgets etc.
- **Interviews with key experts and employees** from the two organizations
- **Existing analyses and studies** regarding the ATM industry and ANSP providers e.g. "The Fragmentation Study"

- **Existing analyses, studies and best practice** from comparable industries in terms of mergers and acquisitions.

The Business Case is a clinical study of initiatives based on explicit assumptions and should be viewed as a definition study based on the preliminary analysis. A detailed analysis of the functional areas covered in the initiatives, e.g. the employees' responsibility, daily-related activities as well as a detailed process design, were not in scope for this phase of the NUAC Programme.

The reader must have in mind that:

- The data collection process ended in April 2006, e.g. changes and transformations within the organisations after this deadline have not been included
- The stated number of FTE within the respective functional areas (relevant for initiatives 1-9) is not based on the employees' current functional area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities is based on interviews with key personnel in LFV/ANS and Naviair
- It is not possible – on the basis of the initiatives – to identify future *individual* staff implications
- The identified implications in terms of benefits and costs are subject to some uncertainty due to the fact that detailed process and activity analyses have not been performed.
- A full analysis of the organisation of the retained business has not been provided by the NUAC Programme, but an indication of the areas of responsibility and needed size has been provided. Business Model section of the Definition Phase Final Report
- The NUAC/SKAANE initiatives have not been updated since June 2006 due to a decision made by the Steering Committee.

2 Initiatives in the merger Scenario

1A) Optimization and re-design of senior management positions	
Description/ rationale	The new centralized business design of the NUAC Company will eliminate duplicate management functions[1,2] and thereby the required number of management functions. The new NUAC Company will have a requirement of 1 CEO, 1 COO and 3 ATCC Managers for three air traffic control centers
Preconditions/ assumptions	Current staff • Current amount of staff related to senior management and management positions in LFV/ANS and Naviair[1,2]: Senior Management: 4 FTE; Management: 3 FTE; Secretary: 5 FTE Business design • 1 CEO (and 1 associated secretary) and 1 COO will be appointed for the new NUAC Company on 1 January 2008 • 3 ATCC Managers will be appointed for the new NUAC Company on 1 September 2010. These positions are recruited internally among current senior management staff in Naviair and LFV/ANS • The current Directors General/Directors (and associated secretaries) in Naviair and LFV/ANS are assumed to continue in the remaining organizations • The remaining Head of Operations/ATC/AER will continue in the current organizations until 1 September 2010, when remaining operational staff will be transferred Implication • Additional hiring of 1 CEO and 1 COO position[2] • Reduction of 2 Senior Manager (Head of Operations/OCH/ATC/AER positions) Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies are assumed – if possible – to be handled through normal attrition • Calculations of average payroll costs for each individual functional division analyzed in the individual initiatives are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average payroll costs for each functional division. Payroll costs estimated for the new CEO position are based on current payroll costs for the current Director General/Director

<table>
<tr><td>Baseline[3]</td><td>2006 a total of:

Naviair:
• 1 Senior Manager (Director General), DG and 1 Secretary, DG
• 1 Senior Manager, O (Head of Operations) and 1 Secretary, O
• 1 Manager, OCH (Head of ATC CPH)

LFV/ANS:
• 1 Senior Manager (Director), EMS and 1 Secretary, EMS
• 1 Senior Manager, AER – NKP (Head of AER)
• 1 Manager, AER – STO (Head of ATC STO) and 1 Secretary, AER – STO
• 1 Manager, AER – MM (Head of ATC MM) and 1 Secretary, AER – MM</td></tr>
<tr><td>Implication</td><td>
<table>
<tr><th></th><th>Current staff</th><th>NUAC Company (staff requirement)</th><th>Remaining organizations (staff requirement)</th><th>Sourcing</th><th>Reduction</th></tr>
<tr><td>Senior Manager (Director/ General Director)</td><td>2</td><td>1</td><td>2</td><td>-</td><td>-1</td></tr>
<tr><td>Senior Manager</td><td>2</td><td>0</td><td>-</td><td>-</td><td>2</td></tr>
<tr><td>Senior Manager – COO (Additional hiring)</td><td></td><td>1</td><td></td><td></td><td>-1</td></tr>
<tr><td>Manager</td><td>3</td><td>3</td><td>-</td><td>-</td><td>0</td></tr>
<tr><td>Secretary</td><td>5</td><td>4</td><td>1</td><td>-</td><td>0</td></tr>
<tr><td>Total</td><td>12</td><td>9</td><td>3</td><td>-</td><td>0</td></tr>
</table>
</td></tr>
<tr><td>Costs</td><td>Severance costs: (one time costs)
• Head of Operations/ATC/AER: 2 Head of Operations/OCH/ATC/AER * 1 Year of payroll costs * €124,500 = € 249,000
• Total severance costs: € 249,000</td></tr>
<tr><td>Cost savings</td><td>Reduced payroll costs/salary: (annual savings)
• CEO: 1 * € 155,000 = € 155,000 (hiring)
• COO: 1* € 124,500 = € 124,500 (hiring)
• Senior Manager (Head of Operations/ATC/AER): 2 * € 124,500 = – € 249,000
• Total payroll costs: (€ 268,500 – € 249,000) = € 30,500</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
• One time costs: € 249,000
• Annual payroll costs: € 30,500</td></tr>
<tr><td>Expected start</td><td>Start date:
• New CEO and COO will take effect as of 1 January 2008
• New ATCC Manager positions will take effect as of 1 September 2010
• Remaining Head of Operations/ATCC/AER (and associated secretaries) will continue in the current organizations until 31 December 2010</td></tr>
</table>

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Unbalance influence	Appointment of new CEO for NUAC versus ATCC managers in CPH, MM and STO could create tension or just unclear accountability	M	H
	Recruitment and staff turn over	Lack of recruitment process clarity leads to increased turn over of key managers	M	M
Footnotes	1) Staffing of functional heads of Finance, HR, Business Development, Quality& Safety, and managers of retained organizations are assessed in Initiative 2A) "Optimization and re-design of administrative staff functions" 2) Staffing of Chief Technical Officer (CTO) are assessed in Initiative 3A 3) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme.			

2A) Optimization and re-design of general administrative functions	
Description/ rationale	In order to optimize the current administrative staff functions, the Business Model in the new NUAC Company has new common centralized administrative staff functions as well as related processes. The new administrative staff functions are designed according to best practice – hence all processes, procedures, activities etc. within the respective functional areas have been harmonized and aligned to the new organizational design. Based on the new organizational design, the current administrative staff in Naviair and LFV/ANS will be reduced. The potential reduction is based on the fact that: • a high level of duplicate positions will occur, and • harmonization and standardization of current processes as well as changes in responsibilities and activities within the respective functional areas will reduce the current workload • future resource requirements related to administrative support functions will be reduced, due to the fact that the new NUAC Company will employ fewer employees than the current two organizations
General Preconditions/ Assumptions	General assumptions regarding Business Design: • Harmonization and alignment of current administrative support processes, procedures and activities in accordance with best practice • The new NUAC Company with a centralized administrative unit will have following impacts (the following exposition of the specific assumptions of this initiative will follow this structure): **A) Establishment of centralized business units in the NUAC Company** – NUAC Business Development – Finance – HR including ATM Training and Communication – Quality and Safety including legal **B) Sourcing of business areas** – Administrative IT is sourced from a third party – Facility Management is sourced from a third party **C) Optimization of management levels in the administrative functions** – Senior Management – Management Establishment of four centralized administrative support units in the new NUAC Company Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division analyzed in the individual initiatives are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division • The stated amount of FTE per staff category/functional area is based on the individual employees' primary area of responsibility and daily activities. A detailed analysis of all employees' area of responsibility and daily activities as well as level 3 to 4 process design and related responsibilities and activities has not been conducted

A) Establishment of new business unit: Business Development	Current staff • Current amount of staff related to Business Development in Naviair and LFV/ANS: 14 FTE Business design • Alignment and re-design of current Business Development functions in accordance with the responsibilities and activities described in the Business Model section of the Definition Phase Final Report • Establishment of one common centralized NUAC Business Development unit – hence reducing duplicate positions in e.g. specialist functions, international representatives etc. • Harmonization and alignment of current business development processes and activities in accordance with best practice, hereby increasing effectiveness in daily operations and reducing workload • Reduced workload due to only one future consolidated service concept/product, one aligned set of business development processes – i.e. strategy development process etc. Implications • Based on the above stated assumptions regarding duplicate positions and increased efficiency, the benefit potential is estimated at a total of approx. 4 FTE
A) Establishment of new business unit: Finance	Current staff • Current amount of staff related to Finance in Naviair and LFV/ANS: 31TE Business Design • Establishment of one centralized Finance unit – hence reducing duplicate positions in e.g. specialist functions, international representatives etc. • Alignment and re-design of current Finance functions in accordance with the responsibilities and activities described in the Business Model for the new Finance unit (see Business Model section of the Definition Phase Final Report) • Harmonization and standardization of current financial model, processes, methods and tools in accordance with best practice, hereby increasing effectiveness in daily operations and reducing workload • Reduced workload due to only one certified organization – hence only one charging scheme, one set of common requirements etc. • Reduced workload due to a reduction of employees according to staff requirement for the new organizational design • The new centralized Finance unit will be responsible for all financial issues Implications • Based on the above stated assumptions regarding duplicate positions and increased efficiency, the benefit potential is estimated at a total of approx. 3 FTE. Due to the fact that current finance-related services provided by LFV Support are assumed to be in-sourced after integration of current ERP systems, the annual service charge of €3,3 m will be saved Calculation • The benefit potential is based on the assumption that integration of current ERP systems/a common ERP system is implemented by 31 December 2010 • In comparison, PA practice and benchmark reports indicate that the percentage of total finance function employees to total employees is approx. 2,3% (for median companies), corresponding to a finance function of 23 FTE within an organization of approx. 1000 employees

A) Establishment of new business unit: Human Resource	Current staff • Current amount of staff related to Human Resource in Naviair and LFV/ANS: 26 FTE Business Design • Establishment of one common centralized Human Resource unit, hence reducing duplicate positions in specialist functions etc. • Alignment and re-design of current Human Resource functions in accordance with the responsibilities and activities described in the Business Model for the new Human Resource unit (see Business Model section of the Definition Phase Final Report) • Harmonization and alignment of current human resource processes and activities in accordance with best practice, hereby establishing a common set of standardized processes, methods and tools related to recruiting, non-operational training and development, HR strategy etc., leading to increased effectiveness in daily operations and reduced workload • Reduced workload due to reduction of employees according to staff requirement for the new organizational design • The wage administration is assumed to be handled centrally in NUAC Implications • Due to the fact that wage administration etc. will be handled centrally in NUAC, hereby saving an annual service charge of approx. € 0,5m to LFV Support[1]. • Based on the above stated assumptions regarding duplicate positions and increased efficiency, the benefit potential is estimated at a total of approx. 4 FTE. Calculation • In comparison, PA practice and benchmark reports indicate that the percentage of total human resource function employees to total employees is approx.: 1,1% (for median companies), corresponding to a human resource function of 11 FTE within an organization of approx. 1000 employees
A) Establishment of new business unit: PR& Communications (HR)	Current staff • Current amount of staff related to PR& Communication in Naviair and LFV/ANS: 3 FTE Business Design • Establishment of one centralized PR& Communication unit, which according to the organizational design in the Business Model (see Business Model section of the Definition Phase Final Report), will be organized within the future HR unit • Harmonization and alignment of current PR& Communications processes, procedures and activities i.e. internal and external communication Implication • Although the above activities are generally considered as generic, the benefit potential is estimated at 0 FTE

A) Establishment of new business unit: ATM Training (HR)	Current staff • Current amount of total staff related to ATM Training in Naviair and LFV/ANS: 30 FTE Business Design • Optimal joint use of existing basic and unit training simulators in Denmark and Sweden (as described in Initiative 15A "Optimal use of existing basic and unit training simulators") • Closure of basic training simulator (RADSIM) in Copenhagen • Integration of basic training and unit training in one simulator at Entry Point North (through shutdown of existing SMART simulator, and expansion of capacity of BEST simulator in Malmö) Implication • A total of approx. 10 FTE are currently assumed to be attached to the RADSIM simulator in Naviair, of which 5 FTE are assumed to be transferred to internal unit training and 5 FTE are therefore expected to be redundant after closure of the simulator. • Similarly, a total of approx. 5 FTE are currently assumed to be attached to the SMART simulator in LFV/ANS, of which 3 FTE are assumed to be transferred to internal unit training, and 2 FTE are therefore expected to be redundant after closure of the SMART simulator • Based on the assumption that extended use of services through Entry Point North will be applied – and that the RADSIM and SMART simulators will be closed – a total staffing requirement of approx. 16 FTE are estimated • Based on the above stated assumptions, the benefit potential is estimated at a total of approx. 14 FTE
A) Establishment of new business unit: Quality and safety	Current staff • Current amount of staff related to Quality & Safety in Naviair and LFV/ANS: 13 FTE Business Design • Establishment of one common centralized Q&S unit – hence reducing duplicate positions in specialist functions, international representatives etc. • Alignment and re-design of current Q&S functions in accordance with the responsibilities and activities described in the Business Model for the new Q&S unit (see Business Model section of the Definition Phase Final Report) • Harmonization and alignment of current Q&S processes and activities in accordance with best practice, hereby increasing effectiveness in daily operations and reducing workload through a common set of standardized quality processes, procedures, methods and tools • Reduced workload due to the development of common European set of regulations Implication • Based on the above stated assumptions regarding duplicate positions and increased efficiency, the estimated staffing requirement in the NUAC Company is a total of 8 FTE. • The benefit potential is estimated at a total of approx. 5 FTE

Establishment of new business unit: Legal Services (Quality and Safety)	Current staff • Current amount of staff related to Legal Services in Naviair and LFV/ANS: 3 FTE Business Design • Establishment of one centralized Legal Services unit, which according to the organizational design in the Business Model, will be organized within the future Q &S unit • The remaining organizations will require 1 FTE in each country Implication • Additional hiring of 1 FTE due to the requirement of 1 FTE in the remaining companies[4]
B) Sourcing of business areas: Administrative IT	Current staff and service charges • Current amount of internal staff working with Administrative IT in Naviair and LFV/ANS: 13 FTE. • Current FTE-related service charges in LFV/ANS regarding administrative IT: € 990,000. Today LFV Data is providing LFV/ANS with administrative IT including FTE related services. The total service charge to LFV Data is approx. € 3,8m[1,3], of which approx. € 990,000 are FTE related costs for administrative IT services e.g. IT help desk, support and maintenance (see Initiative 10 "Common procurement and maintenance of administrative IT and add. Applications") Business Design • Sourcing of administrative IT from a third party is assumed to realize a saving potential of approx. 15% in costs related to administrative IT services. 15% savings should be interpreted as a 15% lower cost base for NUAC compared to the total cost base for these services today. Experience from sourcing of administrative IT in other industries show an expected savings potential of 15-20%. The 15% savings used here is the result of a conservative and realistic approach. • The cost reduction is based on: - Synergy potentials will arise due to the fact that current administrative IT systems and applications will be harmonized and consolidated – hence reducing workload related to IT help desk, support and maintenance. Harmonization and consolidation of current administrative IT systems and applications to one common platform (as described in Initiative 10: "Common procurement and maintenance of administrative IT and add. Applications"), hereby increasing effectiveness in daily operations and reducing workload - achieving lower service costs through increased competition - service providers' ability to achieving greater economies of scale than may be achieved with the current solution Implication: • 15 % saving on costs related to administrative IT (including both payroll costs for current staff in LFV/ANS and Naviair and service charges).

B) Sourcing of business areas: Facility Management	Current staff • Current amount of staff related to Facility Management in LFV/ANS and Naviair: 16 FTE Business Design • Facility Management is assumed sourced from a third party. Sourcing of Facility Management is assumed to realize a total savings potential of approx. 15% in costs related to Facility Management. 15% savings should be interpreted a 15% lower cost base for NUAC compared to the total cost base for these services today. Experience from sourcing of Facility Management in other industries show an expected savings potential of 15-20%. The 15% savings used here is the result of a conservative and realistic approach. • The cost reduction is based on - achieving lower service costs through increased competition - service providers' ability to achieving greater economies of scale than may be achieved in the current solution Implication • 15 % saving on costs related to Facility Management (payroll costs for current staff etc.)

C) Optimizing Management Level	Senior Management[5] • *Current amount of Senior Management* positions in Naviair and LFV/ANS within administrative staff functions: 13 FTE • *Business Design:* Only one Senior Manager will be appointed per the four centralized administrative units (NUAC Business Development, Quality& Safety, Finance, Human Resource), as outlined in the organizational design for the merged organization (see Business Model section of the Definition Phase Final Report) • *Implication:* Due to a high level of duplicate positions, the reduction potential is estimated at a total of approx. 9 FTE (current 13 FTE minus the requirement of 4 FTE) Management: • *Current amount of management* positions in Naviair and LFV/ANS within administrative staff functions: 15 FTE • *Business Design:* Only one Manager will be appointed per the four centralized administrative units (NUAC Business Development, Quality& Safety, Finance, Human Resource), as outlined in the organizational design for the merged organization (see Business Model section of the Definition Phase Final Report) • *Implication:* Due to a high level of duplicate positions, the reduction potential is estimated at a total of approx. 3 FTE, based on a requirement of 10 FTE in NUAC and 2 in remaining organizations Junior Management • *Current amount of junior management* positions in Naviair and LFV/ANS: 4 • *Business Design:* the required amount of junior managers related to administrative functions are estimated to a total of approx. 3 FTE • *Implication:* Due to a high level of duplicate positions, the reduction potential is estimated at a total of approx. 1 FTE Secretary – Assumptions: • *Current staff:* Current amount of secretary positions in Naviair and LFV/ANS within administrative staff functions: 8 FTE • *Business Design:* It is assumed that only appointed Senior Managers are entitled to secretary personnel • *Implication:* The reduction potential is estimated at a total of approx. 4 FTE, given the assumption that only four senior managers will be appointed per the four centralized administrative support units (see Senior Management – Assumptions) Other administrative staff • A staff requirement of 5 administrative staff for the reaming companies are identified

Baseline[2]	***Naviair:*** • 6 Senior Management, 1 Business Development, 1 Communication, 1 Legal, 1 Q & S, 1 Finance, 1 HR • 6 Management, 2 Finance, 4 HR • 1 Junior Manager, HR • 4 Secretary, 1 Communication, 1 Finance, 2 HR • 6 Business Development, Business Development • 2 Communication, PR& Communications • 2 Legal Services, Legal • 3 Quality & Safety, Q & S • 17 Finance, 16 Finance, 1 A • 9 Administrative IT, Finance • 15 HR, HR • 10 Facility Management, HR • 16 ATM Training, HR **LFV/ANS:** • 7 Senior Management, 4 EMS, 1 ASI, 1 ASD, 1 ATA HK • 9 Manager, 1 EMS, 4 ASD, 1 ATA HK, 1 AER NKP, 1 AER STO, 1 AER MM • 3 Junior Manager, ASD • 4 Secretary, 2 ASI, 1 ASD, 1 ATA HK • 8 Business Development, 7 ASD, 1 ATA HK • 1 Communication, EMS • 1 Legal Services, ASD • 10 Quality & Safety, 3 EMS, 5 ASD, 1 ATA HK, 1 AER MM • 14 Finance, 2 EMS, 5 ASD, 1 ASI, 2 ATA HK, 1 ATA LAV, 1 AER NKP, 1 AER STO, 1 AER MM • 4 Administrative IT, ASD • 11 HR, 1 EMS, 5 ASD, 1 ATA HK, 1 AER NKP, 1 AER STO, 2 AER MM • 6 Facility Management, 3 AER STO, 3 AER MM • 14 ATM Training, 12 ASD, 1 AER STO, 1 AER MM • 3 Other Administrative staff, ASD

Implication		Current staff	NUAC Company (staff requirement)	Remaining organizations (staff requirement)	Sourcing	Reduction
	Senior Management	13	4	-	-	9
	Manager	15	10	2	-	3
	Junior Manager	4	-	3	-	1
	Secretary	8	4	-	-	4
	Business dev.	14	10	-	-	4
	PR & Communication	3	3	-	-	-
	Legal services	3	2	2	-	-1
	Quality & Safety	13	5	3	-	5
	Finance	31	25	3	-	3
	Administrative IT	13	-	-	13	-
	HR	26	20	2	-	4
	Facility Management	16	-	-	16	-
	ATM Training	30	16	-	-	14
	Other administrative staff	3	-	5	-	-2
	Total	192	99	20	29	44
Costs	Severance costs: (one time cost) • Senior Management: 9 * 1 year of salary * € 124,500 = € 1,120 ,500 • Management: 3 * 1 years of salary * € 106,000 = €319,500 • Total severance costs: **€ 1,440,000**					
Cost savings	Reduced payroll costs/salary: (annual savings) • Senior Management: 9 * € 124.000 = – € 1,120,500 • Management: 3 * € 106,500 = – € 319,500 • Junior Management: 1* € 89,000 = -€ 89,000 • Secretary staff: 4 * € 52,500 = – €210,000 • Administrative staff: 27 * € 67,500 = – € 1,822,500 • Sourcing of Administrative IT: 0,15 * (13 * € 67,500) = – € 131,625 • Sourcing of Facility Management: 0,15 * (16 * € 67,500) = – € 162,000 • Total payroll costs reduced: **– € 3,855,125** Reduced service charge to LFV Support and LFV Data: (annual savings) • Reduction of current service fee to LFV Support related to Finance related activities: = – € 3,300,000					

	• Reduction of current service fee to LFV Support related to Human Resource related activities: = – € 500,000 • Reduction of current service fee to LFV Data[3] related to Administrative IT related activities (Administrative IT services e.g. IT help desk, support and maintenance etc.) (0,15 * € 990, 000): = – € 148,500 • Total service charges reduced: **– € 3,948,500**
Total financial impact	Total financial impact: • One time cost: **€ 1,440,000** • Net annual savings: (– € 3,855,125 + – € 3,948,500) = **– € 7,803,625**
Expected start	Start date: • Reduction of required staff members will take effect as of 1 January 2011 • Termination of Service Level Agreement with LFV Support regarding Finance, and Human Resource related services as of 1 January 2011

Implementation risks

Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
Staff turn-over and productivity	High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff	M	M
Task complexity and stakeholder care	The establishment of one central administrative function will be one of the biggest and most complex integration tasks – risk is that benefits will not be harvested	M	H
Early process alignment	If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization	M	H

Footnotes	1) Service Level Agreement (SLA) between LFV Support/LFV Data and LFV/ANS: Annual service fee related to Finance (€ 3,3m), Human Resource (€ 0,5m) and Administrative IT (€ 3,8m) activities are estimated at a total of € 7,4m 2) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme. 3) The total service charge to LFV Data is approx. € 3,8m, of which approx. € 990,000 are related to Administrative IT services e.g. IT help desk, support and maintenance etc. (see Initiative 10 "Common procurement and maintenance of administrative IT and add. Applications") 4) The additional hiring requirement of 1 FTE to legal services has been subtracted from the total reduction potential 5) CEO positions are covered in Initiative 1; Technical staff in Initiative 3 & 4; Operational support staff in Initiative 5; whereas ATCO are out of scope, since these are TWR/ATWR-ATCOs

3A) Optimization and re-design of technical staff functions – ATM Systems Development	
Description/ rationale	The NUAC Company will optimize ATM system development through • Transfer of all development activities related to ATM systems to COOPANS after implementation of DATMAS and EUROCAT[1]. This will optimize development activities by – Elimination of duplicate development activities – Economies of scale through centralized development in COOPANS • Establishment of one common centralized system development unit with following primary responsibilities and activities related to system development: – Draw up specification of requirements to the common ATM system – Project management – Technical architecture – Vendor management – Systems testing – Technical procedures for ATM system – Implementation of ATM enhancements
Preconditions/ assumptions	Current staff • Current amount of staff working with ATM system development in LFV/ANS and Naviair: Senior Management: 1 FTE, Management: 3 FTE, Junior Management: 6 FTE, Secretary: 2 FTE, Development staff: 54 FTE, Administrative development support: 13 FTE Business Design • COOPANS will perform all future development-related activities in the common ATM system after implementation of DATMAS and EUROCAT [1] • Establishment of one common centralized system development unit in accordance with the organizational design in the Business Model (see Business Model section of the Definition Phase Final Report) • The primary responsibilities and activities in the new system development function will be to draw up specification of requirements to the common ATM system, project management, technical architecture, vendor management etc. • COOPANS cooperation resides within NUAC – not in the current organizations Implication • Based on the staff requirement (se the 'implication' section), the reduction in staff is estimated at approx. 44 FTE Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

<table>
<tr><td>Baseline[2]</td><td>The current amount of employees related to ATM system development functions employs as of 1 April 2006 approx. a total of:

Naviair:
• 1 Senior Management, A
• 2 Management, A
• 3 Junior Management, A
• 40 Development staff, 30 A, 10 OT
• 11 Administrative Development support, A

LFV/ANS:
• 1 Management, ASD
• 3 Junior Management, ASD
• 2 Secretary, ASD
• 14 Development staff, ASD
• 2 Administrative Development support, ASD</td></tr>
<tr><td>Implication</td><td>
<table>
<tr><th></th><th>Current staff</th><th>NUAC Company (staff requirement)</th><th>Remaining organizations (staff requirement)</th><th>Sourcing</th><th>Reduction</th></tr>
<tr><td>Senior Management</td><td>1</td><td>1</td><td>-</td><td>-</td><td>0</td></tr>
<tr><td>Management</td><td>3</td><td>-</td><td>-</td><td>-</td><td>3</td></tr>
<tr><td>Junior Management</td><td>6</td><td>2</td><td>-</td><td>-</td><td>4</td></tr>
<tr><td>Secretary</td><td>2</td><td>-</td><td>-</td><td>-</td><td>2</td></tr>
<tr><td>Development staff</td><td>54</td><td>29</td><td>-</td><td>-</td><td>25</td></tr>
<tr><td>Admin development support</td><td>13</td><td>3</td><td>-</td><td>-</td><td>10</td></tr>
<tr><td>Total</td><td>79</td><td>35</td><td>-</td><td>-</td><td>44</td></tr>
</table>
</td></tr>
<tr><td>Costs</td><td>Severance costs:
• Management: 3 * 1 years of salary * € 106,500 = € 319.500
• Total severance costs: €319.500</td></tr>
<tr><td>Cost savings</td><td>Reduced payroll costs/salary: (annual savings)
• Management: 3* € 106,500 = – € 319.500
• Junior Management: 4 * € 89,000 = – €356,000
• Development staff: 25 * € 79,500 = – € 1,987,500
• Administrative development support: 10 * € 65,000 = – € 650,000
• Secretary: 2 * € 52,500 = – € 105,000
• Total payroll costs reduced: = – € 3,418,000</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
• One time costs: € 319,500
• Net annual savings: – € 3,418,000</td></tr>
<tr><td>Expected start</td><td>Reduction of required staff members will take effect as of 1 January 2011</td></tr>
</table>

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Staff turn-over & productivity	High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter - Low productivity due to decreasing motivation among retrenched staff	M	M
	Dependencies	If DATMAS implementation and/or the later EUROCAT upgrade is delayed this initiative will be impacted	M	M
	Key Supplier Management and strategic purchase	Ability at receiving company to meet NUAC requirements concerning systems development can cause threat to expected benefits	M	M
	Early process alignment	If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization	M	M
Footnotes	1) DATMAS system is implemented as scheduled in ultimo 2007, and EUROCAT system is upgraded to DATMAS level ultimo 2011 2) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme.			

4A) Optimization and re-design of technical staff functions – Systems Maintenance and Supervision	
Description/ rationale	Based on the assumption that a future NUAC Company will based on a harmonized and consolidated ATM and CNS systems and infrastructure[1], significant potential savings related to systems maintenance and supervision exist. Sourcing of systems maintenance and supervision from a third party (i.e. as currently done in LFV/ANS by ELTEL) is assumed to realize a total savings potential of approx. 10% in costs related to systems maintenance and supervision (payroll costs etc.). Savings of 10% means that the cost base for NUAC is reduced with 10% compared to the total cost base for these services today. Experience from sourcing of systems maintenance and supervision in other industries show an expected savings potential of 10-15%. The 10% savings used here is the result of a conservative and realistic approach. The cost reduction is based on: • Achievement of lower service costs through increased competition • Service providers' ability to achieving greater economies of scale than may be achieved in the current solution • Harmonization and consolidated of current ATM systems through COOPANS – hence realizing a reduction of workload related to systems maintenance • Additional potential savings related to the infrastructure servicing of current infrastructure in Jutland may be realized through sourcing. As a consequence of the above described options, the primary responsibilities and activities related to the new system maintenance and supervision in the merged organization will be: • Vendor management (SLA etc.) • Validation etc.
Preconditions/ assumptions	Current staff • Current amount of staff working with system maintenance and supervision in LFV/ANS and Naviair: Management: 1 FTE, Junior Management: 14 FTE, Secretary: 1 FTE, Technical supervisors: 10 FTE, Maintenance staff: 131 FTE, Facility Management: 3 FTE Business Design • All system maintenance and supervision related activities will be performed by one joint provider across Sweden and Denmark in accordance with the organizational design in the Business Model (see Business Model section of the Definition Phase Final Report) • The primary responsibilities and activities in the new system maintenance and supervision function in the merged organization will be vendor management (SLA etc.), validation etc. • Harmonization and standardization of current ATM and CNS systems and infrastructure as well as consolidation to common ATM and CNS system platforms, as described in Initiative 12, 13 and 14 • The staff requirement related to vendor management in the new NUAC Company is estimated at 1 FTE per location (see Business Model section of the Definition Phase Final Report). Total staff requirement: 3 FTE Implications • Additional hiring (3 Vendor Management and 1 Technical Supervisor) • 10% savings related to systems maintenance and supervision (payroll costs etc.) • A detailed business case for sourcing of technical maintenance and supervision has not been conducted and as such, only known aspects have been assessed

	Calculations • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division
Baseline[2]	The current amount of employees related to system maintenance functions employs as of 1 April 2006 a total of approx.: Naviair: • 1 Management, OT • 10 Junior Management, OT • 10 Technical Supervisors, OT[3] • 61 Maintenance staff, OT • 3 Facility Management, OT LFV/ANS: • 4 Junior Management, ASD • 1 Secretary, ASD • 37 Maintenance staff , 30 ASD, 7 ASI, • 4 Flygmarer, ASD • 28 Other Technical Staff, 27 ASD, 1 AER NKP • 1 Technical Investigation, ASD

Implication

	Current staff	NUAC Company (staff requirement)	Remaining organizations (staff requirement)	Sourcing	Reduction
Management	1	-	-	1	-
Junior Management	14	-	2	12	-
Secretary	1	-	-	1	-
Technical supervisors	10	-	11	-	-1
Maintenance staff (maintenance staff, flygmagerer, other technical staff and technical investigation)	131	-	4	127	-
Vendor Management	-	3	-	-	-3
Facility Management	3	-	-	3	-

	Total	160	3	17	144	-4

<table>
<tr><td>Costs</td><td>Total current payroll costs:
Management: 1 * € 106,500 = € 106,500
Junior Management: 12 * € 89,000 = € 1,068,000
Secretary: 1 * € 52,500 = € 52,500
Maintenance Staff: 127 * € 69,000 = € 8,763,000
Technical Facility Management: 3 * € 69,000 = € 207,000
Total payroll costs: – € 10,197,000
Vendor Management: 3 * € 67,500 = –€202,500 (additional hiring)
Technical Supervisor: 1 * € 58,000 = –€ 58,000 (additional hiring)</td></tr>
<tr><td>Cost savings</td><td>Total payroll costs/salary reduction: (annual savings)
Savings via sourcing from a third party: 0,10 * € 10,197,000 = – € 1,019,700
Total annual savings: (–€ 1,019,700+ €202,500 + € 58,000)=– € 759,200</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
Savings via sourcing from a third party: Net annual savings: – € 759,200</td></tr>
<tr><td>Expected start</td><td>Reduction of required staff members will take effect as of 1 January 2011</td></tr>
<tr><td>Implementation risks</td><td>
<table>
<tr><th>Risk Title</th><th>Description</th><th>Probability (L-M-H)</th><th>Impact (L-M-H)</th></tr>
<tr><td>Staff turn-over & productivity</td><td>High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter - Low productivity due to decreasing motivation among retrenched staff</td><td>M</td><td>M</td></tr>
<tr><td>Key Supplier Management and strategic purchase</td><td>Ability at receiving company to meet NUAC requirements concerning systems maintenance can cause threat to expected benefits</td><td>M</td><td>M</td></tr>
<tr><td>Early process alignment</td><td>If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization</td><td>M</td><td>M</td></tr>
</table>
</td></tr>
<tr><td>Footnotes</td><td>1)Potential cost savings related to ATM and CNS systems and infrastructure that are non-FTE related, are handled in 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

2) The above stated amount of FTE within the respective function areas are NOT based on the employees’ current function area, but the employees’ primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is out of scope for this phase of the NUAC Programme

3) Excl. 1 FTE allocated in initiative 8</td></tr>
</table>

5A) Optimization and re-design of operational support staff functions – Procedures functions	
Description/ rationale	Through centralization and alignment of current processes, procedures and activities as well as associated reduction in duplicate activities and positions, the NUAC Company will optimize operational procedures functions. Also, benefit potentials will arise due to common development of e.g. Aeronautical Information Publication etc.
Preconditions/ assumptions	Current staff • Current amount of staff related to Procedures, Investigation and other operational support staff in LFV/ANS and Naviair: Management 9 FTE, Junior Management: 19 FTE, Procedure: 58 FTE, Investigation: 11 FTE, Secretary: 1 FTE Business Design • Establishment of one common centralized Procedures unit in accordance with the organizational design in the Business Model – hence reducing duplicate positions in management functions, specialist functions, international representatives etc. • Harmonization and alignment of current Procedures processes, activities etc., hereby increasing effectiveness in daily operations and reducing workload • Reduced workload due to only one certified organization – hence only one set of procedures functions (local ATS instructions etc.) and one set of national procedures requirements etc. • Reduced workload due to only one aligned set of Procedures development processes • Current Investigation units in Naviair and LFV/ANS (Naviair: 2 FTE; LFV/ANS: 9 FTE) of a total of 11 FTE and 1 Junior Manager will be transferred to a common centralized Safety & Investigation unit that resides under the COO. In order to apply to national requirements, some investigation employees will geographically work out of the two remaining ATCCs in order to have one local representative Implication • Based on the above stated assumptions regarding duplicate positions and increased efficiency, the benefit potential is estimated at a total of approx. 41 FTE Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

<table>
<tr><td>Baseline[1]</td><td>The current amount of employees related to procedure, investigation and other operational staff functions as of 1 April 2006 a total of:

Naviair:
• 1 Management, OP
• 4 Junior Management, OP
• 14 Procedures, OP
• 2 Investigation, OP

LFV/ANS:
• 8 Management, 1 ASD, 2 ATA LAV, 2 ATA NKP, 1 AER STO, 2 AER MM
• 15 Junior Management, 4 ASD, 5 AER STO, 1 AFTN, 5 AER MM
• 44 Procedure, 24 ASD, 1 ATA – LAV, 11 AER- MM, 8 AER – STO
• 9 Investigation, 7 ASD, 2 AER- STO
• 1 Secretary, ATA LAV</td></tr>
<tr><td>Implication[2]</td><td>
<table>
<tr><th></th><th>Current staff</th><th>NUAC Company (staff requirement)</th><th>Remaining organizations (staff requirement)</th><th>Sourcing</th><th>Reduction</th></tr>
<tr><td>Management</td><td>9</td><td>1</td><td>-</td><td>-</td><td>8</td></tr>
<tr><td>Junior Management</td><td>19</td><td>2</td><td>-</td><td>-</td><td>17</td></tr>
<tr><td>Procedure</td><td>58</td><td>25</td><td>17</td><td>-</td><td>16</td></tr>
<tr><td>Investigation</td><td>11</td><td>11</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Secretary</td><td>1</td><td>1</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Total</td><td>98</td><td>40</td><td>17</td><td>-</td><td>41</td></tr>
</table>
</td></tr>
<tr><td>Costs</td><td>Severance costs (one time costs):
• Management: 8 * 1 years of salary * € 106,500 = € 852,000
• Total severance costs: € 852,000</td></tr>
<tr><td>Cost savings</td><td>Reduced payroll costs/salary: (annual savings)
• Management: 8 * € 106,500 = – € 852,000
• Junior Management: 17 * € 89,000 = – € 1,513,000
• Procedures: 16 * € 87,000 = – € 1,392 ,000
• Total payroll costs reduced: – € 3,757,000</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
• One time costs: € 852,000
• Net annual savings: – € 3,757,000</td></tr>
<tr><td>Expected start</td><td>Reduction of required staff members will take effect as of 1 January 2011</td></tr>
</table>

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Staff turn-over & productivity	High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter - Low productivity due to decreasing motivation among retrenched staff	M	L
	Early process alignment	If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization	M	L
Footnotes	1) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme 2) It must be noticed that the absolved stated saving potential must be considered conservative due to the complexity of the operational management area. Future analysis might show potential for further savings			

6A) Optimization and re-design of operational support staff functions – General operational support and roster planning functions	
Description/ rationale	The NUAC Company will have one centralized, operational support function and related processes in order to optimize the operational support functions. The new operational support function including duty roster planning function is designed according to best practice – hence all processes, procedures, activities etc. within the areas have been harmonized and aligned to the new organizational design, leading to a reduction in duplicate activities and positions
Preconditions/ assumptions	Current staff • Current amount of staff related to General Operational Support and Roster Planning in LFV/ANS and Naviair: Management: 1 FTE, Junior Management: 4,5, Duty Roster Planning: 11, Other operational support staff: 9 FTE, Secretary: 2 FTE Business Design • Establishment of one common centralized general operational support function in accordance with the organizational design in the Business Model. The new administrative operational support function and duty roster planning function is designed according to best practice, leading to a reduction in duplicate activities and management positions • Staff requirement in the new NUAC Company: General and strategic roster planning will be handled centrally within HR (junior management: 1 FTE, duty roster planner: 1 FTE), while local roster planning is assumed to require two local duty roster planners per ATCC (a total of 6 FTE). General Operational Support Staff will be handled centrally, with a total staff requirement of: Junior Management 1 FTE, Other Operational Support staff 6 FTE Implication • Based on the above stated assumptions regarding duplicate positions and increased efficiency, the benefit potential is estimated at a total of approx. 12,5[1] FTE Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

<table>
<tr><td>Baseline[1]</td><td>These general administrative operational support functions employs as of 1 April 2006 a total of:

Naviair:
• 1 Management, O
• 1 Junior Management, O
• 3 Duty roster planning, O
• 6 Other operational support staff, O
• 2 Secretary, O

LFV/ANS:
• 3,5 Junior Management, 2 AER STO, 1,5 AER MM
• 8 Duty roster planning, 5 AER STO, 3 AER MM
• 3 Other operational support staff, 2 ASD, 1 FPC</td></tr>
<tr><td>Implication[2]</td><td>
<table>
<tr><th></th><th>Current staff</th><th>NUAC Company (staff requirement)</th><th>Remaining organizations (staff requirement)</th><th>Sourcing</th><th>Reduction</th></tr>
<tr><td>Management</td><td>1</td><td>-</td><td>-</td><td>-</td><td>1</td></tr>
<tr><td>Junior Management</td><td>4,5</td><td>2</td><td>-</td><td>-</td><td>2,5</td></tr>
<tr><td>Duty roster planning</td><td>11</td><td>7</td><td>-</td><td>-</td><td>4</td></tr>
<tr><td>Other operational staff</td><td>9</td><td>6</td><td>-</td><td>-</td><td>3</td></tr>
<tr><td>Secretary</td><td>2</td><td>-</td><td>-</td><td>-</td><td>2</td></tr>
<tr><td>Total</td><td>27,5</td><td>15</td><td>-</td><td>-</td><td>12,5</td></tr>
</table>
</td></tr>
<tr><td>Costs</td><td>Severance costs: (one time cost)
• Management: 1 * € 106,500 = € 106,500
• Total severance costs: € 106,500</td></tr>
<tr><td>Cost savings</td><td>Reduced payroll costs/salary: (annual savings)
• Management: 1 * € 106,500 = – € 106,500
• Junior Management: 2,5 * € 89,000 = – € 222,500
• Duty roster planning: 4 * € 57,500 = – € 230,000
• Other operational support staff: 3 * 59,000 = – € 177,000
• Secretary: 2 * € 52,500 = – € 105,000
• Total payroll costs: – € 841,000</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
• One time costs: € 106,500
• Net annual savings: – € 841,000</td></tr>
<tr><td>Expected start</td><td>Reduction of required staff members will take effect as of 1 January 2011</td></tr>
</table>

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Staff turn-over & productivity	High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff	M	L
	Early process alignment	If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization	M	M
Footnotes	1) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme 2) In the financial calculation the specific allocations of 12,5 FTE have been used. The reduction potential presented in Final Report have been rounded up from 12,5 FTE to 13 FTE.			

7A) Optimization and re-design of operational staff functions – Briefing Officer	
Description/ rationale	The NUAC Company will optimize Briefing Officer functions through consolidation of the two Briefing Officer units in Sweden combined with cross border alignment of current processes, procedures and associated reduction in duplicate activities and resource requirements. Furthermore, potential savings may be realized through centralized governance and optimization and harmonization of current Briefing Officer activities
Preconditions/ assumptions	Current staff • Current amount of staff related to Briefing Officer in LFV/ANS and Naviair: Management: 1 FTE, Junior Management: 1 FTE, Secretary: 0,5 FTE, Briefing Officers: 40, Q & S :0,5 FTE Business Design • Establishment of one common general Briefing Officer function in accordance with the organizational design in the Business Model. The new Briefing Officer function is designed according to best practice – hence all processes, procedures, activities etc. within the areas have been harmonized and aligned to the new organizational design, leading to a reduction in duplicate activities and management positions • Due to national requirements, one Briefing Officer unit will be established in Denmark and one centralized unit in Sweden • The staff requirement in the new NUAC Company is estimated at a total of 25 FTE Staff implication • Based on the above stated assumptions regarding duplicate positions and increased efficiency, the benefit potential is estimated at a total of approx. 18 FTE Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division, analysed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division
Baseline[1]	The Briefing Officer functions employs as of 1 April 2006 a total of: Naviair: • 12 Briefing Officers, OCH LFV/ANS: • 1 Manager, FPC • 1 Junior Manager, FPC • 0,5 Secretary , FPC • 28 Briefing Officers, FPC • 0,5 Q & S, FPC

<table>
<tr><td>Implication</td><td>
<table>
<tr><th></th><th>Current staff</th><th>NUAC Company (staff requirement)</th><th>Remaining organizations (staff requirement)</th><th>Sourcing</th><th>Reduction</th></tr>
<tr><td>Managers</td><td>1</td><td>-</td><td>-</td><td>-</td><td>1</td></tr>
<tr><td>Junior managers</td><td>1</td><td>-</td><td>-</td><td>-</td><td>1</td></tr>
<tr><td>Secretary</td><td>0,5</td><td>-</td><td>-</td><td>-</td><td>0,5</td></tr>
<tr><td>Briefing officer</td><td>40</td><td>25</td><td>-</td><td>-</td><td>15</td></tr>
<tr><td>Q&S</td><td>0,5</td><td>-</td><td>-</td><td>-</td><td>0,5</td></tr>
<tr><td>Total</td><td>43</td><td>25</td><td>-</td><td>-</td><td>18</td></tr>
</table>
</td></tr>
<tr><td>Costs</td><td>Severance costs: (one time cost)
Management: 1 * € 106,500 = € 106,500
Total severance costs: € 106,500</td></tr>
<tr><td>Cost savings</td><td>Reduced payroll costs/salary: (annual savings)
Management: 1 * € 106,500 = € 106,500
Junior Management: 1 * € 89,000 = € 89,000
Secretary: 0,5 * € 52,500 = € 26,250
Briefing Officers: 15 * € 59,000 = – € 885,000
Q&S: 0,5 * € 67,500 = € 33,750
Total payroll costs reduced: – € 1,140,500</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
One time costs: € 106,500
Net annual savings: – € 1,140,500</td></tr>
<tr><td>Expected start</td><td>Reduction of required staff members will take effect as of 1 January 2011</td></tr>
<tr><td>Implementation risks</td><td>
<table>
<tr><th>Risk Title</th><th>Description</th><th>Probability (L-M-H)</th><th>Impact (L-M-H)</th></tr>
<tr><td>Staff turn-over & productivity</td><td>High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff</td><td>M</td><td>M</td></tr>
<tr><td>Early process alignment</td><td>If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization</td><td>M</td><td>M</td></tr>
</table>
</td></tr>
<tr><td>Footnotes</td><td>1) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme.</td></tr>
</table>

8A) Optimization and re-design of operational staff functions – Shutdown of two control centers in night hours with low traffic volume	
Description/ rationale	The NUAC Company will optimize the use of ATCOs during night hours with low traffic volumes. It is estimated that one control center (ATCC) can – with a slight increase in ATCOs on night shift – manage the three ATCCs airspace with the current traffic volumes in Copenhagen, Stockholm and Malmö in night hours between 24:00 to 06:00
Preconditions/ assumptions	Current solution • Today, all three ATCCs are providing services H 24, but with reduced staff during night hours • Current amount of staff working during night hours in LFV/ANS and Naviair (described in the 'implication' section): ACC-ATCO: 20 FTE, Watch supervisors: 3 FTE, FDO: 4 FTE, Technical Supervisors: 1 FTE Business Design • With the current traffic volumes in STO, MM and CPH in night hours between 24:00 to 06:00, it is assumed that one ATCC can manage the three ATCCs' airspace • Only one ATCC operates in night hours between 24:00 to 06:00 – the two remaining ATCCs will therefore be closed during night hours between 24:00 to 06:00 • Local ATS instructions for both Naviair and LFV/ANS have been used in estimating the staffing requirements per any given traffic volume[1] • Preliminary analysis indicates that the implementation of the initiative will be complex. The NUAC Programme has addressed this issue by: - *Analysis of legislation.* NUAC has conducted an analysis of the current legislations regarding Air Navigation Service and the findings so far indicate no conflict between the initiative and legislation. A detailed analysis of both the legislation and current solution must be conducted in order to develop a robust and realistic solution - *Innovative business design without compromising current level of safety*. NUAC Programme will develop an innovative design for the night shifts without compromising the level of safety. The actual business design will be developed after finishing the detailed analysis. Several solutions have been suggested: ▪ **Multi training of ATCO's** – The relevant ATCOs will receive appropriate training in approach procedures for the two closed ATCCs ▪ **Night shift certificate** – NUAC will conduct development of a night shift certificate covering the entire airspace ▪ **Multi certified ATCO's** – ATCO's will get separate certifications for each of the three ATCC's airspace • Due to the complexity described above a conservative implementation plan has been chosen. The initiative will not be implemented until 2015, in order to give NUAC enough time to conduct a detailed analysis and to develop robust business design. Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in

	Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

<table>
<tr><td>Baseline[2]</td><td>The night shift[3] in the three ATCCs employs as of 1 April 2006 a total of:

Naviair – Copenhagen (excl. TWR):
• 6 ACC-ATCO, OCH
• 1 Watch supervisor, OCH
• 1 FDO, OCH
• 1 Technical supervisor, OT

LFV/ANS – Stockholm (excl. TWR):
• 8 ACC-ATCO, AER STO
• 1 Watch supervisor, AER STO
• 1 FDO, AER STO
• 0 Technical Supervisors[3]

LFV/ANS – Malmö (excl. TWR):
• 6 ACC-ATCO, AER MM
• 1 Watch supervisor, AER MM
• 2 FDO, AER MM</td></tr>
<tr><td>Implication</td><td>
<table>
<tr><th></th><th>Current staff</th><th>NUAC Company (staff requirement)</th><th>Remaining organizations (staff requirement)</th><th>Sourcing</th><th>Reduction</th></tr>
<tr><td>ACC-ATCO</td><td>20</td><td>12</td><td>-</td><td>-</td><td>8</td></tr>
<tr><td>Watch supervisors</td><td>3</td><td>1</td><td>-</td><td>-</td><td>2</td></tr>
<tr><td>FDO</td><td>4</td><td>1</td><td>-</td><td>-</td><td>3</td></tr>
<tr><td>Technical supervisors</td><td>1</td><td>1</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Total</td><td>28</td><td>15</td><td>-</td><td>-</td><td>13</td></tr>
</table>
</td></tr>
<tr><td>Costs</td><td>None</td></tr>
<tr><td>Cost savings</td><td>Reduced payroll costs/salary: (annual savings)
• ATCO: 8 * € 87,000 = – €696,000
• Watch Supervisor: 2 * € 103,000 = – € 206,000
• FDO: 3 * € 56,000 = – € 168,000
• Total payroll costs reduced: – € 1,070,000</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
• One time costs: € 0
• Net annual savings: – € 1,070,000</td></tr>
<tr><td>Expected start</td><td>Reduction of required staff members will take effect as of 1 January 2015</td></tr>
</table>

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Staff turn-over & productivity	High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff	M	M
	Operational and technical complexity	Night closing of two control towers demands ATCO procedure training to obtain certification within the entire route area – expanded area as well as new ways of working will create more complex ATCO task	M	H
	System challenges	System difficulties in covering the entire geographic area	M	H
Footnotes	1) The allocation of ATCO-personnel to night shift does not distinguish between ACC and APP-ATCO's 2) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme 3) The function is outsourced to ELTEL			

9A) Optimization and re-design of operational staff functions – Optimization of control positions	
Description/ Rationale	The establishment of one common airspace – as defined in the Merger Scenario – makes it possible to optimize the current utilization of operators through consolidation of positions to Copenhagen, Stockholm and Malmö. Local approach positions are not included in the initiative (e.g. approach centers in Norrköping, Göteborg and Billund) Analysis in the NUAC Programme Airspace Design Workgroup estimated that the required numbers of positions in the Merger Scenario are 107. Current baseline of positions is estimated at a total of 114 positions leading to a total reduction of 7 positions in the Merger Scenario
Preconditions/ assumptions	Current Solution • The total number of positions are 114 • One position is estimated at a total of approx 5 FTE Business Design • The initiative is based on the assumptions in the NUAC Programme Airspace Design Workgroup document regarding consolidation of positions • Analysis in the NUAC Programme Airspace Design Workgroup estimated that the required numbers of positions in the Merger Scenario are 107. Implication • Savings related to a reduction of 7 positions, which equals 35 FTE Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through natural attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division
Baseline	Current amount of Operational and Operational Support Staff in scope Naviair • 87 ACC-ATCO, OCH • 50 APP-ATCO, OCH • 10 Watch supervisors, OCH • 46 FDO Assistants, OCH LFV/ANS • 228 ACC-ATCO • 69 APP-ATCO • 30 Watch Supervisors • 15 Tactical TS • 38 FDO Assistants [1]

<table>
<tr><td rowspan="8">Implication</td><td></td><td>Current staff</td><td>NUAC Company (staff requirement)</td><td>Remaining organizations (staff requirement)</td><td>Sourcing</td><td>Reduction</td></tr>
<tr><td>ACC-ATCO</td><td>315</td><td></td><td></td><td></td><td></td></tr>
<tr><td>APP- ATCO</td><td>119</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Watch supervisors</td><td>40</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Tactical TS</td><td>15</td><td></td><td></td><td></td><td></td></tr>
<tr><td>FDO Assistant</td><td>84</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Total</td><td>573</td><td></td><td></td><td></td><td>35</td></tr>
<tr><td>Costs</td><td colspan="6">N/A</td></tr>
<tr><td>Cost savings</td><td colspan="6">Reduced payroll costs/salary: (annual savings)
• ATCO: 35 * € 87,000 = – € 3,045,000
• Total payroll costs reduced: – € 3,045,000</td></tr>
<tr><td>Total financial impact</td><td colspan="6">Total financial impact:
• Net annual savings: – € 3,045,000</td></tr>
<tr><td>Expected start</td><td colspan="6">Reduction of required staff members will take effect as of 1 January 2010</td></tr>
<tr><td>Implementation risks</td><td>Risk Title</td><td colspan="2">Description</td><td>Probability (L-M-H)</td><td colspan="2">Impact (L-M-H)</td></tr>
<tr><td></td><td>Resistance to change</td><td colspan="2">Uncertainty and lack of understanding and clear communication.</td><td>M</td><td colspan="2">H</td></tr>
<tr><td>Footnotes</td><td colspan="6">1) The 38 FDO assistants are categorized as “FDO Assistant” (19 staff) and “other operational staff” (19 staff) in the Allocation sheet in “Appendix 3 – Business Case Documentation”</td></tr>
</table>

10A) Common procurement and maintenance of administrative IT and add. applications	
Description/ rationale	The NUAC Company will optimize administrative IT – defined as all non-operational (CNS, ATM) related hardware and software – and achieve lower costs through • Standardizing all key applications and platforms related to administrative IT[1] • Common procurement of applications and IT hardware • Common maintenance and support related to administrative IT
Preconditions/ assumptions	Business design: • Common procurement and sourcing will provide savings relating to a reduction of the current Investment IT budgets of approximately 10%. This is based on increased bargaining power and standardization of all key applications in order to reduce license, maintenance and support costs • Common maintenance and support (excl. FTE). It is estimated that a cost reduction of approximately 20% relating to the current maintenance and support spent on consulting, external helpdesk etc. may be achieved through greater standardization and alignment of applications • As described in Initiative 2, the NUAC Company will source administrative IT from a third party. It should be noticed that the above stated savings are driven by the synergy of merging the organization and not the sourcing itself. Analyses so far indicate that there will be a minor financial difference between in- or outsourcing of procurement and maintenance related to Administrative IT
Baseline	Naviair • Support and Maintenance (excl. FTE) € 1,000,000[2] • Investment plans and budget (excl. FTE) € 940,000[3] LFV/ANS • Support, Maintenance and investments (excl. FTE) € 2,810,000[4,5]
Costs	N/A
Cost savings	Naviair • Investment plans and budget (excl. FTE) € 940,000 * Cost reductions 10% of current investments = € 94,000 • Support and Maintenance (excl. FTE) € 1,000,000 * Cost reductions 20% of current support and maintenance costs = € 200,000 LFV/ANS • Support, maintenance and investments (excl. FTE) € 2,810,000 * Cost reductions 15% current support, maintenance and investment costs ~ € 420,000 Total cost reduction • Support, maintenance and investment = € 200,000+ € 94,000 + € 420,000 = € **714,000**
Total financial impact	Total financial impact: • One time costs: € 0 • Net annual savings: – **€ 714,000**
Expected start	Start date: 2007, implementation: 36 months (project) Applications, systems and hardware will be replaced on a running basis, and it is estimated that all key systems and applications (excl. SAP) will have been replaced/standardized within 36 months from initiation

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Additional applications and support systems	The complexity in eliminating the current significant number of additional applications and support systems proves more difficult than estimated and thus benefits are only partially achieved or it takes significantly longer to reduce/eliminate these systems	L	L
	Organizational resistance	Significant organizational resistance against: 1. Eliminating current support applications 2. Standardizing on common systems platforms	M	H
	Implementation costs are under estimated	Risk that the overall implementation costs and time period to achieve a standardized platform is under estimated and that significantly more costs will be incurred on this basis	M	M
Footnotes	1) A detailed analysis of all minor applications in both organizations has not been conducted, and as such only known key applications and systems have been assessed. Based on the above, the estimated potential cost reduction must be considered as conservative 2) Based on budget for administrative IT in 2006 for Naviair and interviews with experts from Naviair 3) Based on investment plan for administrative IT in 2006 for Naviair and interviews with experts from Naviair 4) The total administrative IT costs (which included FTE) in LFV/ANS were estimated at € 3,800,000 (the total service charge to LFV Data) 5) The total administrative IT costs in LFV/ANS have been adjusted for FTE related Costs: € 3,800,000 – € 990,000 = **2,810,000**. The FTE costs were estimated at approx € 990.000 are based on following two assumptions: • It is assumed that LFV/ANS has the same relative numbers of FTE working with administrative IT as in Naviair (9 out of 647) • It is assumed that the average payroll costs for FTE working with administrative IT in LFV/ANS is € 60,000 • The calculation: 9/647 (the relative numbers of FTE working with Administrative IT) * 1181 (the number of employees in LFV/ANS) * € 67,500 (average payroll cost for employees working with IT Admin) ~ € 990,000 • The above calculation have accounted the 4 FTE in LFV/ANS working with administrative IT due to the fact that they are not organizationally allocated for administrative IT services.		

11A) Common sourcing of tele/data communication services	
Description/ rationale	Common sourcing/procurement of telephony/data communication incl. hardware and subscriber services (handsets, switches etc.). It is estimated that a potential reduction of current communications/data communications expenses of 15% may be realized. This is based on an assessment of the current situation where the two organizations currently source these services individually. It is assumed that a potential cost reduction may be achieved through realizing better sourcing and subscriber contracts through greater volume discounts. This estimate is subject to some uncertainty, as it is based on experience and subject to the current market conditions and number of providers, and is as such difficult to forecast further than 2006 – 2007
Preconditions/ assumptions	Calculation: • Two scenarios have been used in the estimating of the potential savings depending on if data communication must be covered by NALLA [1] or not – Best-case scenario for the initiative assumes that it is possible to disregard the current Danish regulatory standards with respect to the operational communication/data communication (data communication must be covered by NALLA) – Worst-case scenario for the initiative assumes that it is not possible to disregard the current Danish regulatory with respect to the operational communication/data communication (data communication must be covered by NALLA). This means that the effect of the scenario is reduced to achieving cost reductions on the remaining 20% of the Danish tele/data communication services • The initiative does not include potential revenue by selling i.e. excess bandwidth capacity to partners etc. (currently done by LFV/ANS today) neither an assessment of the full potential in IP telephony implementation to reduce costs
Baseline	Baseline: • Current communications costs (subscriber services + communication) in Naviair DKK 10,000,000[2] ~ € 1,340,000 • Current communication costs (subscriber services + communication) in LFV/ANS SEK 15,000,000[3] ~ € 1,600,000
Costs	None – however, costs associated with changes in hardware (switches etc) might be necessary to accommodate a common tele/data communications infrastructure.
Cost savings	DK: • Best-case savings: €1,340,000 * 15% savings= € 201,000 • Worst-case savings: 15% savings of € 268,000 (20% of €1,340,000) = € 40,000 SE: • Best-case savings: € 1,600,000* 15% savings= € 240,000 • No worst-case in Sweden Total • Best-case savings= € 201,000 + € 240,000 = – € 441,000 • Worst-case savings= € 40,000 + € 240,000 = – € 280,000 • Most likely savings= – € 360,500
Total financial impact	Se “cost savings” above

Expected start	Start date: 2007, implementation: 8 months (project)			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	NALLA certification	NALLA certification issues can not be overcome and thus the benefits potential (on the Danish side) is significantly reduced	M	M
	Low competition for Tele tender	Technical and service requirements from NUAC means that only a limited number of providers are able to bid for the tender and thus the necessary competition (and lower costs) is not realized	M	H
	Alignment of tele- and data communications infrastructure	It proves more difficult to achieve the necessary alignment of tele- and data communications infrastructure to achieve a common pan-Nordic framework agreement with a provider and thus cost reductions benefits are lower than estimated or the associated integrations costs prove higher than estimated	L	M
Footnotes	1) As a consequence of the Danish NATO membership, all data communication must be covered by NALLA (National Long Lines Agency). The executive order: "Bekendtgørelse nr. 1045 af 13. december 2001" contains detailed information about NALLA. Approx. 80% of the Naviair's communication is data communication based on interviews with experts from Naviair 2) Based on interviews with experts from Naviair 3) Based on LFV/ANS' budget for 2006 and interviews with experts from LFV/ANS			

12A) Common future purchasing and operation of standard 'other ATM systems'	
Description/ rationale	Common future purchasing and operation of standard 'other ATM systems' (i.e. systems are replaced at the end of their life cycle). The category 'other ATM systems' covers all relevant ATM systems except CNS systems, tower systems and systems covered by the COOPANS cooperation[1] The initiative will bring cost reductions in relation to the present situation in the following two areas: • **Common future purchasing of standard 'other ATM systems'** will create estimated cost reductions on purchase of 20% in relation to the present situation, where the organizations purchase 'other ATM systems' separately. The cost reductions are accomplished through: – Improved bargaining power – Reduced adjustment costs (i.e. expenses for external consulting services in the form of project management, requirement, development, testing etc.) – Reduced implementation costs (i.e. expenses for external consulting services in the form of training, installation etc.) • **Common future operation of 'other ATM systems'** will create estimated cost reductions on operation on 15% in relation to the present situation, where the organizations operate the systems separately. The cost reductions are accomplished through: – Improved framework agreements (external consulting services etc.) – Maintenance costs (expenses for licenses, upgrades, hardware replacements, external consulting services for operation, support, maintenance, upgrades etc.)
Preconditions/ assumptions	The initiatives are based on the following general assumptions • Gradual standardization and harmonization of system platforms • Harmonization of regulative matters regarding technical standards in ATM systems • The average lifetime of 'other ATM systems' is approx. 10 years[2] The estimated savings potential is based on: • Experience from the COOPANS cooperation indicates considerable cost reductions related to joint cross-national purchase. The purchase price has been reduced with approx. 30% in relation to a scenario, where the three countries participating in the COOPANS had purchased the systems separately[2] • The study 'The impact of fragmentation in European ATM/CNS' indicates a huge potential for cost reductions by common purchasing and operations of 'other ATM systems'. The study demonstrates the existence of fragmentation costs related to purchasing and operation of ATM systems in Europe (fragmentation costs arise through smaller than optimal operational ANSP units in Europe) e.g. cost of piece-meal procurement, fragmented maintenance and development operations, fragmented planning and investment appraisal etc. • An unexploited potential exist, as the two organizations presently do not have cooperation on purchase or operation in this area[2] • PA's experience from comparable industries confirms that organizations typically will obtain considerable cost reductions by common purchasing of complex systems. It must be stressed that no actual studies of the benefits by a merger of 'other ATM systems' exist – partly as a consequence of little consolidation experience The initiative has not illustrated the following:

	• The possibility of merging some of the 'other ATM systems' • An analysis to clarify if all present systems in the category 'other ATM systems' are necessary This initiative has not analyzed the implication of the initiative related to FTE – this will be treated separately in Initiative 4) Technical staff function – Systems maintenance
Baseline	Naviair • Annual operating costs of 'other ATM systems': approx. DKK 7,200,000[3] ~ € 965,000 • The expected investment costs of 'other ATM systems' in a 10-year period: approx. DKK 135,000,000[4] ~ € 18,100,000 LFV/ANS • Annual operation costs of 'other ATM systems': approx. SEK 14,600,000[5] ~ approx. € 1,570,000 • The expected investment costs of the 'other ATM systems' in a 10-year period: approx. SEK 175,000,000[6,7] ~ € 18,820,000
Costs	None
Cost savings	The initiative brings the following cost reductions: • The total operations costs for 'other ATM systems' in Naviair and LFV/ANS is based on following calculation: € 965,000m + € 1,570,000 = € 2,530,000 • **Cost reduction on annual operation costs** = € 2,530,000 * 15% cost reduction = €380,000 • The total investments costs for 'other ATM systems' in Naviair and LFV/ANS is based on following calculation: € 18,820,000 + € 18,100,000 = € 36,920,000 • **Avoidable investment costs =** € 36,920,000 * 20% cost reduction = € 7,380,000 Redemption of cost reductions: • It is assumed that the cost reductions will be redeemed at once in 10 years, i.e. in 2016 where the life cycle of the systems is complete[8] • The avoidable reductions on investment are a one-off reduction whereas the cost reductions on operation will continue each year
Total financial impact	Se "cost savings" above
Expected start	Replacement at once in 2016

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Standardization and harmonization between Sweden and Denmark is not achieved	Initiative assumes a certain alignment of the current national technical requirements in regards to the systems (some non alignment between LFV and SLV exist). There is a risk that it proves difficult or impossible to achieve this alignment and thus benefits will not be achieved	L	H
	Technical alignment proves more difficult than estimated	Initiative assumes that the technical alignment of the current systems can be undertaken relatively easily. However a risk exists that this proves more difficult to achieve than estimated	M	H
	National military requirements are not met	Current military/defense technical standards proves difficult to align and thus the necessary standardization and harmonization does not materialize	L	H

Footnotes

1) The category 'other ATM systems' contains among others the following systems: The MAESTRO (Arrival Management System), internal TV systems for distributing MET information and flight data from TWR to APP, and systems for distribution of correct time in ATC

2) The assumption is based on interviews with relevant experts from LFV/ANS and Naviair

3) The annual operating costs of the 'other ATM systems' have been estimated at approx. DKK 7,200,000. The figure is based on the following two main assumptions.

- Annual operating costs of the 'other ATM systems' are estimated to amount to approx. 50% of the total ATM operating costs, which were DKK 16,100,000 in 2006 (excluding Billund and Aalborg), based on budget for 2006 for Naviair and interviews with relevant experts in Naviair
- Operating costs for the 'other ATM systems' are adjusted for operating costs to tower systems, which is out of scope (this group presumably constitutes approx. 10% of the 'other ATM systems' , based on interviews with experts in Naviair), i.e. 50% of (90% of €16,100,000) = **DKK 7,200,000**

4) The estimated investment costs to 'other ATM systems' in Naviair have been estimated at approx. DKK 135,000,000. The figure is connected with some uncertainty and is based on the following three main assumptions:

- 80% of the systems in the category 'other systems' were presumably replaced in connection with the CASIMO project at an estimated price of approx. DKK 120,000,000. The assumption is based on interviews with experts in Naviair and the investment budget for Naviair (named "Anlægsbudget 2006 og Investeringsplan 2007–2020").
- It is assumed that the rest of the systems belonging to the category 'other ATM systems' (20%) have the same relative price as those systems replaced in connection with the CASIMO project – i.e. approx. DKK 30,000,000. The assumption is based on interviews with relevant experts from Naviair
- The total investment costs have been adjusted to exclude tower systems (this group presumably constitutes 10% of the 'other ATM systems', based on interviews with experts in Naviair). 90% of DKK 150,000,000 = **135,000,000**

	5) Annual operation costs for 'other ATM systems' in LFV/ANS are connected with uncertainty and are estimated to amount to approx SEK **14,600,000** in 2006. Operation costs are based on LFV/ANS' budget and interviews with relevant experts from LFV/ANS. Operation costs for the most expensive 'other ATM systems' in LFV/ANS are: • VCS SEK 8,400,000 • ERI SEK 1,500,000 • AFTN SEK 1,200,000 6) The estimated investment budget to 'other ATM systems' in a 10-year period **(SEK 175,000,000**) is connected with some uncertainty. The estimate is based on the investment budget for all ATM systems adjusted for investment related to ATM systems covered by COOPANS and tower systems. The figure is based on following two assumptions: • The investment budget for all ATM systems in a 10-year period is estimated at SEK 1375,000,000. The estimate has been calculated by extrapolating the investment budget for all ATM systems for the period 2007–2010 to cover a 10-year investment period. The investment budget 2007–2010 (SEK 550,000,000) for LFV/ANS is based on interviews with experts from LFV/ANS • It is assumed that the share of the investment budget for 'other ATM systems' compared to the total investment budget for all ATM systems is the same in LFV/ANS as in Naviair. The ratio between investment budget for 'other ATM systems' and the investment budget for all ATM systems in Naviair is therefore used to calculate the investment budget to 'other ATM systems' in LFV/ANS given the total investment budget for all ATM systems stated in the above: • The calculation is based on this equation: a = b* (c/d) – a) Investment budget for 'other ATM systems' in LFV/ANS – b) Investment budget for all ATM systems in LFV/ANS = SEK 1375,000,000 – c) Investment budget for 'other ATM systems' in Naviair= DKK 135,000,000 – d) Investment budget for all ATM systems in Naviair = DKK 1063,000,000 • Calculation SEK **175,000,000** = SEK 1375,000,000 * (135,000,000/1063,000,000) • The figures relating to investment budget for 'other ATM systems' in Naviair and investment budget for all ATM systems in Naviair are based on interviews with experts from Naviair 7) The figures are based on budget 2006 for LFV/ANS and Naviair, and interviews with relevant experts from LFV/ANS and Naviair 8) LFV/ANS and Naviair have just replaced the majority of the systems in the category 'other ATM systems', and therefore, it is assumed that systems in this category may be replaced at once, when the lifecycle of the systems is completed

13A) Common use of existing surveillance infrastructure in Denmark and Sweden	
Description/ rationale	Common use of existing surveillance infrastructure in Denmark and Sweden will reduce the total need for surveillance infrastructure in Denmark and Sweden. It has been estimated that a future reduction of 2 radars is possible (i.e. the radars will be phased out when their life cycle has ended). This creates cost reductions on: • Avoidable investment cost (the purchase of two radars) • Operating costs[1,3] on two radar units • Cost reduction related to FTE, which is treated separately in Initiative 4
Preconditions/ assumptions	The initiative is based on the following assumptions: • Unexploited capacity on radar coverage in the Oresund area. Analyses show that quadruple coverage exists in the following two radar groups: Kastrup/Ängelholm and Roskilde/Romele[1,2] • NUAC will continue to meet the requirement for double coverage even though a radar is shut down in each of the two groups with quadruple coverage[1,2] • Cross-national cooperation concerning joint use of radars • Gradual standardization and harmonization of system platforms • Harmonization of regulative matters regarding technical standards in CNS systems and infrastructure • Expected average life cycle for radars: 12 years[1] • The total numbers of radar units in Denmark and Sweden is 17[1] (DK 5 radars, SE: 12 radars) The estimates of the initiative are based on the following: • Positive cross-national cooperation experience exists regarding the joint use of surveillance infrastructure in the Nordic countries. Naviair is cooperating with Norway regarding radar coverage in Northern Jutland, which has made it possible to reduce radar capacity in the area[1] • A significant unexploited potential exists as the two organizations presently do not have cooperation on radar operation in the Oresund region[1] • An analysis of radar coverage in Oresund area indicates that NUAC will have double coverage even though a radar is shut down in Kastrup/Ängelholm and Roskilde/Romele[1,2] • The study “The impact of fragmentation in European ATM/CNS” indicates a huge potential for cost reductions by common purchasing and operations of CNS infrastructure. The study confirms the existence of fragmentation costs (fragmentation costs arise through smaller than optimal operational ANSP units) e.g. over-provision of secondary radar
Baseline	Naviair • Annual operating costs: approx. DKK 4,000,000[4] ~ € 540,000 LFV/ANS • Annual operating costs: approx. SEK 13,900,000[4] ~ € 1,500,000
Costs	None

Cost savings	The initiative brings the following cost reductions: • The total operation cost of surveillance in Naviair and LFV/ANS is € 540,000 + € 1,500,000 = € 2,040,000. 12% of the existing radar units will be shut down corresponding to 2 out of the present 17 radars • **Cost reductions on annual operating costs**: approx. € 2,040,000 * 12% = approx. € 245,000 • **Avoidable investment cost**: approx. € 6,700,000 Preconditions of the calculation: • It is assumed that the full effect of the initiative will be redeemed in 12 years, i.e. in year 2020, corresponding to a situation where the existing surveillance infrastructure has completed its life cycle and therefore presumably can be phased out • Calculation of cost reductions: – The total estimated cost reductions on operation are found by calculating the operation costs for the two radar units – The estimated cost reductions on investment of the three radars are calculated at approx. DKK 50,000,000 ~ € 6,700,000 corresponding to 1 MSSR radars as well as a primary radar[1] – The calculations must be validated in a detailed analysis of the existing specific surveillance infrastructure • Redemption of cost reductions: It is assumed that the cost reductions of the initiative will be redeemed with 1/12 every year from today and 12 years ahead. Specifically: – The cost reductions on operation will be redeemed with 8,3% each year – i.e. 8,3% of the cost reductions on operation in 2008, 16,7% of the cost reductions on operation in 2009 – The cost reductions on investment will be redeemed by 1/12 each year from 2008 through 2020 – It is assumed that the cost reduction on investment is a one-off reduction, whereas the cost reductions on operation will continue each year.
Total financial impact	Se “cost savings” above
Expected start	1 January 2008

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Excess radar capacity not correctly estimated	Initiative assumes that there is significant excess radar capacity, which allows for the reduction of two of the current radars in the Oresund area. There is a risk that this excess capacity has not been estimated correctly and thus the reduction in avoidable investment costs and running cost can not be realized	L	H
	Objections from national military authorities	Swedish and/or Danish military authorities will not accept a reduction in the current radar capacity	L	H
	No military acceptance of alignment of surveillance infrastructure	Objections from the Danish and/or Swedish military authorities on aligning the surveillance infrastructure in terms of deployment of identical radar platforms	L	H
	Technical alignment proves more difficult than estimated	Initiative assumes that the technical alignment of the current systems can be undertaken relatively easily. However a risk exists that this proves more difficult to achieve than estimated	L	L
Footnotes	1) Based on interviews with relevant experts from LFV/ANS and Naviair 2) Based on analyses of the Radar coverage in Oresund region 3) The annual operation costs cover electricity, replacement parts, etc. 4) Based on budget 2006 for Naviair and LFV/ANS and interviews with experts from the two organizations			

14A) Common future purchasing and operation of standard CNS systems and infrastructure	
Description/ rationale	Common future purchasing and operation of standard CNS systems[1] and infrastructure (i.e. infrastructure/systems will be replaced when their life cycles are complete) The initiative will bring cost reductions in relation to the present situation in the following two areas: • **Common purchasing of identical CNS systems and infrastructure** will create estimated cost reductions on purchasing of 15% in relation to the present scenario, where organizations purchase CNS infrastructure and systems separately. The cost reductions are accomplished through: – Improved bargaining power – Reduced adjustments costs (i.e. expenses for external project management, requirements, development, testing etc). – Reduced implementation costs (i.e. expenses for external training etc) • **Common operation of other CNS systems and infrastructure** will create estimated cost reductions on operation of 10% in relation to the present scenario, where the organizations purchase operation infrastructure and systems separately. The savings are accomplished through: – Improved agreements (external consultants) – Maintenance costs (expenses for licenses, upgrades, hardware replacements, external consulting services for operation, support, maintenance, upgrades etc.) The rationale for including the cost reductions in the Business case, is that NUAC will support and encourage closer and more formalised cooperation in the CNS systems and infrastructure area. Furthermore purchasing can be handled more efficiently through the NUAC cooperation compared to two units in the Retained Organisations as today.
Preconditions/ assumptions	The initiatives are based on the following assumptions: • Gradual standardization and harmonization of system platforms • Harmonization of regulative matters regarding technical standards of the CNS systems and infrastructure • The level of CNS infrastructure in Denmark and Sweden will remain unchanged[2] • CNS' average life cycle: 12 years[3] The estimates of the initiatives are based on the following arguments: • Experience from the COOPANS cooperation indicates considerable cost reductions related to joint cross-national purchase. The comparison must be taken with reservations as the CNS infrastructure and systems have fewer adjustment and implementation costs[2] • The study "The impact of fragmentation in European ATM/CNS" indicates a large potential for cost reductions by common purchases and operations of 'other ATM systems'. The study confirms the existence of fragmentation costs related to purchasing and operation of CNS infrastructure/systems in Europe (fragmentation costs arise through smaller than optimal operational ANSP units in Europe) e.g. cost of piecemeal procurement, fragmented maintenance and development operations as well as fragmented planning and investment appraisal. • Experience shows that large service providers obtain considerably lower purchase prices than those of smaller service providers. This is supported by the fact that Naviair also receives quantity discounts with larger purchases[2]

	• An unexploited potential exists as the two organizations presently do not have cooperation on purchasing or operation in this area[2] • PA's experience from comparable industries confirms that organizations will typically obtain considerable cost reductions by common purchasing of complex systems. It must be stressed that no actual studies of the benefits by a merger of CNS systems/infrastructure exist – partly as a consequence of little consolidation experience The initiative has not illustrated the following: • The possibility of merging existing systems • The possibility of reducing the number of CNS infrastructure/systems Cost reduction related to FTE is treated separately in Initiative 4) System maintenance – technical staff functions
Baseline	Naviair • CNS' 12-year investment budget: DKK 289,500,000[4] ~ € 38,800,000 • CNS' annual operating costs: DKK 9,120,000[5] ~ € 1,220,000 LFV/ANS • CNS' 12-year investment budget: SEK 225,000,000[6] ~ € 24,200,000 • CNS' annual operating costs: SEK 42,610,000[7] ~ € 4,580,000
Costs	None
Cost savings	The initiative brings the following cost reductions: • The total annual operation costs for CNS in LFV/ANS and Naviair is based on the following calculation: € 1,220,000 + € 4,580,000 = € 5,800,000 • **Cost reductions on annual operation costs:** € 5,800,000 * 10% cost reduction = € 580,000 • The total 12-year investment budget for CNS in LFV/ANS and Naviair is based on the following calculation: € 38,800,000 + € 24,200,000 = € 63,000,000 • **Avoidable investment costs**: € 63,000,000 * 15% cost reduction = € 9,450,000 Preconditions for the calculations: • Redemption of cost reductions: It is assumed that the full effect of the initiative will be redeemed in 12-years' time corresponding to a scenario where the existing CNS infrastructure has completed its life cycle and therefore presumably will be replaced • The cost reductions on operation will be redeemed with accumulated 8,33% each year – i.e. 8,33% of the cost reductions on operation in 2008, 16,66% of the cost reductions on operation in 2009 etc. • Cost reductions on investment will be redeemed with 1/12 each year from 2008 through 2020 • It is assumed that the cost reductions on investment are a one-off reduction whereas the cost reductions on operation will continue each year
Total financial impact	Se "cost savings" above
Expected start	1 January 2008, the entire benefit will be implemented in 12 years

	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
Implementation risks	Standardization and harmonization of current legislation between Sweden and Denmark	Initiative assumes a certain alignment of the current national technical requirements in regards to the systems (some non alignment between LFV and SLV exist). There is a risk that it proves difficult or impossible to achieve this alignment and thus benefits will not be achieved	L	H
	Technical alignment proves more difficult than estimated	Initiative assumes that the technical alignment of the current systems can be undertaken relatively easily (confirmed ny senior ATM experts). However a risk exists that this proves more difficult to achieve than estimated	M	H
	National military requirements are not met	Current military/defense technical standards proves difficult to align and thus the necessary standardization and harmonization does not materialize	L	H

Footnotes

1) For a definition se chapter 8 “glossary” in Final Report

2) Assumption is based on interviews with relevant experts from LFV/ANS and Naviair

3) It is assumed that the CNS systems and infrastructure have an average life cycle of 12 years based on interviews with experts from LFV/ANS and Naviair

4) The estimate of Naviair’s total 12-year investment budget are connected with uncertainty partly because Naviair’s investment budget “Anlægsbudget 2006 og Investeringsplan 2007–2020” does not cover the entire 12 years investment period 2006-2018 for Communication, Surveillance and Navigation. The total 12-year investment budget for CNS is therefore based on historical data, when the investment budget for the whole period was incomplete. The total investment budget for CNS on DKK **289,527,000** is based on the following:
   - 12-year investment budget for Communication infrastructure/systems in the period 2005-2016 = DKK 123,222,000
   - 12– year investment budget for Surveillance infrastructure/systems in the period 2000-2012 = DKK 144,098,000
   - 12-year investment budget for Navigation infrastructure/systems in the period 2005-2016 = DKK 22,207,000

5) The estimate of the annual operational costs for CNS systems/infrastructure (**DKK 9,120,000**) is based on Naviair’s budget for 2006 and interviews with experts from Naviair. The annual operation costs contain following elements:
   - Operational costs for Communication = DKK 4,430,000
   - Operational costs for Navigation = DKK 650,000
   - Operational costs for Surveillance = DKK 4,040,000
   - Total operational costs for CNS = DKK 9,120,000

6) The estimate on the 12-year investment budget (**SEK 225,000,000**) for CNS in LFV/ANS is connected with considerable uncertainty. The estimate has been calculated by extrapolating the investment budget for CNS for the period 2007-2010 (SEK 75,000,000) to cover a 12-year investment period. The investment budget 2007-2010 for LFV/ANS is based on interviews with experts from LFV/ANS

	7) The estimate on the annual operational costs for CNS systems/infrastructure (SEK **42,610,000**) is based on LFV/ANS' budget for 2006 and interviews with experts from LFV/ANS. The total annual operation costs contain the following elements: – Operational costs Communication = SEK 25,130,000 – Operational costs Navigation = SEK 3,540,000 – Operational costs Surveillance = SEK 13,940,000 – Total operational costs CNS = SEK 42,610,000

15A) Optimal use of existing basic and unit training simulators	
Description/ rationale	An optimal joint use of the existing basic and unit training simulators in Denmark and Sweden. The initiative consist of the following two partial initiatives: • Closure of the basic training simulator in Copenhagen (i.e. the RADSIM simulator). Basic training is carried out at Entry Point North in Sweden • Integration of basic and unit training in one simulator in Malmö (the BEST simulator). This will partly be realized by replacing the existing SMART simulator, and partly by phasing out the existing Bert simulator (which alone covers basic training) or replacing this with a standard product. The expansion of the BEST simulator in Malmö will happen naturally in connection with the planned upgrade of the simulator in regards to COOPANS. The establishment of NUAC will enforce harmonization and closer and more formalized cooperation in the ATM training area. This will result in improved coordination and better use of simulator capacity. The initiative will bring cost reductions of the technical operating costs corresponding to the operation of the SMART Simulator and the RADSIM simulator. The implications of the initiative related to FTE will be treated separately in Initiative 2) Optimization and re-design of general administrative staff functions
Preconditions/ assumptions	The initiative is based on the following preconditions: • Considerable over-capacity of basic training simulation in the present set-up with two separate basic training simulators in Denmark and Sweden[1] • RADSIM (in the current setup) will not be able to handle basic and unit training when COOPANS is implemented • It is assumed that an expansion of the BEST simulator in Malmö will be able to meet the requirements for basic training in Denmark and Sweden[1] • It is possible to expand the BEST simulator in Malmö to cover basic and unit training with a presumably limited investment in connection with the planned DATMAS upgrade[1] • The DATMAS and EUROCAT trainers in Naviair and LFV/ANS will remain functional as today. • It is possible to establish constructive cross-national cooperation concerning the operation of the simulators[1] • There is no geographical limitations for where ATM training must be carried out • The requirement for basic training simulator capacity will not increase. This is partly confirmed in interviews with experts within the field and partly in the planned rationalizations within the air controller area in connection with NUAC.[1] Currently there is a high request for basic education of ATCOs in Naviair and LFV/ANS, due to a temporary high demand, this is assumed to be leveled out when NUAC is established and also as a consequence of NUAC there will be a need for fewer ATCOs, therefore the simulator capacity for basic, unit and contingency training of ATCOs is assumed to be assured • 3D and TWR simulators are not affected since these are assumed to remain in the retained organisations • The initiative is not affected by the organizational set-up described in the Merger scenario. This assumption seems plausible according to the existence of the constructive cross-national cooperation concerning operation of Entry Point North

Baseline	DK: • Annual technical operating costs of RADSIM: DKK 1,000,000[2] ~ € 134,000 SE: • Annual technical operating costs of the SMART simulator: SEK 1,000,000[3] ~ € 107,000
Costs	Investment costs exist in connection with the expansion of the BEST Simulator in Malmö to cover basic and unit training. These costs are not included in the business case as it is assumed that the investment corresponds to the necessary upgrade of the existing SMART and RADSIM simulators in case the initiative is not implemented

Cost savings	The initiative will bring the following cost savings: • Cost reductions on **annual operation** costs: € 134,000 + € 107,000 = € 241,000 Preconditions of the calculation: • The proposal is based on the shutdown of the SMART and RADSIM simulators: • Operating costs for the SMART simulator in Sweden are included • Operating costs for the RADSIM simulator in Naviair • It is necessary to make a detailed analysis of the specific simulators as well as the future need for simulator capacity in order to be able to finally decide which simulators should be shut down • Costs for the Bert simulator in Sweden is not included • Costs for the DATMAS trainers are not included • Costs for 3D and TWR simulators are not included since these are assumed to remain in the retained organisations The initiative has not illustrated the following: • Cost reductions on future investments have not been included • The possibility of improving unit training by conducting training at one location instead of the present situation where training takes place at three different locations The costs of expanding the BEST simulator to cover both basic and unit training, see the rational above in the "cost" section.
Total financial impact	See above
Expected start	The initiative may be implemented 1 January 2011 in connection with implementation of the COOPANS related systems

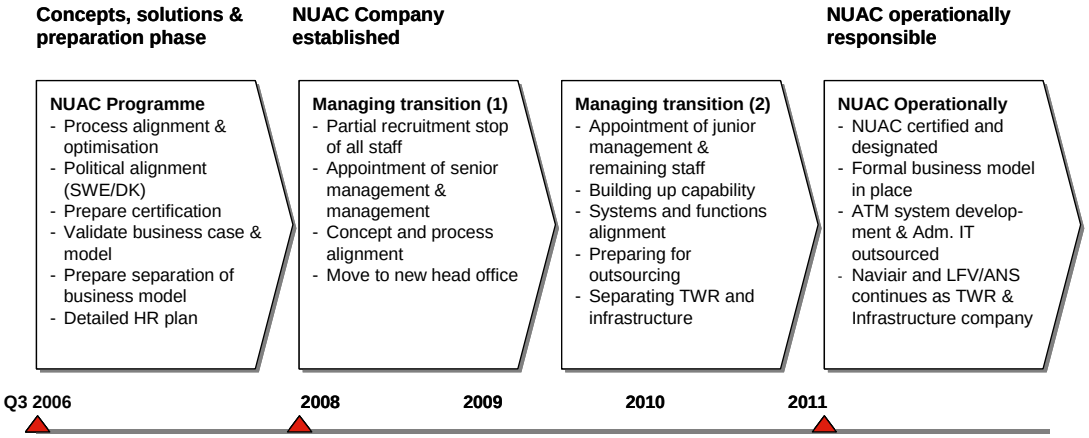
Implementation risks

Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
Simulator Capacity	Demand for simulator capacity will increase and exceed capacity after the shutdown of the RADSIM and SMART simulators	L	M
Certification	Potential differences in regards to certification and designation may exist relating to the use of the current simulators and the associated training that may create further complexity in ensuring the integration.	L	M
Integration costs not accurately estimated	Initiative assumes that the costs associated with the expansion of the Malmö BEST simulator corresponds to the necessary upgrade of the existing SMART simulator. Thus no investment costs are assumed. Risk that the costs associated exceed the upgrade of the SMART simulator	L	M

Footnotes	1) Based on interviews with experts from LFV/ANS and Naviair 2) The technical operating costs must be taken with reservations. The estimate is based on interviews with experts from Naviair 3) The technical operating costs must be taken with reservations. The estimate is based on interviews with experts from LFV/ANS

16A) Reduction in general overhead costs	
Description/ rationale	The estimated FTE- reduction – as described in initiative 1A-9A – will reduce the general overhead costs. Overhead costs are defined as: • Recruitment and training costs per employee • Administrative IT costs (HW, software licenses, help desk etc.) per employee • Office costs (furniture, office supplies etc) per employee • Building related costs (maintenance, rental etc.)
Preconditions/ assumptions	Assumptions • The overhead costs are costs not directly related to payrolls or operation costs, but highly dependant on the number of staff. It is assumed, based on PA's best practice from comparable industries, that 80% of the general overhead costs are variable with number of staff • The total staff reductions in the merger scenario are approx. 183, as described in initiatives 1A-9A • The initiative is based on an average overhead cost per employee (no differentiation between staff functions)
Baseline	LFV/ANS • Variable overhead costs per employee in LFV/ANS: SEK 112,000[1] ~ € 12,043 Naviair • Variable overhead cost per employee in Naviair: DKK 96,000[2] ~ € 12,869 Average overhead cost per employee in LFV/ANS and Naviair • Variable overhead cost per employee = € 12,378[3]
Costs	N/A
Cost savings	Annual cost savings related to general overhead costs: • 204 (staff reduction) * €12,378 (average variable overhead cost per employee) = **€ 2,525 ,000** [4]
Total financial impact	Total financial impact: • One time costs: **€ 0** • Net annual savings: **€ 2,525 ,000**
Expected start	The initiative will have financial impact as of 1 January 2011
Implementation risks	Not relevant

Footnotes	1) The LFV/ANS overhead costs are based on following calculation: • The total overhead costs per employee in LFV/ANS are estimated at approx. SEK 140,000, based on interviews with relevant experts from LFV/ANS • 80% of the general overhead costs are variable: 80% * SEK 140,000 = SEK 112,000 2)The Naviair overhead costs are based on following calculation: • The total overhead costs per employee in Naviair are DKK 120,000, based on interviews with relevant experts from Naviair • 80% of the general overhead costs are variable: 80% * DKK 120,000 = DKK 96,000 3)The average overhead costs in LFV/ANS and Naviair is based on the overhead cost in LFV/ANS and Naviair and adjusted for the relative number of employees in LFV/ANS and Naviair: • Average overhead costs in Naviair = € 12,869 • Number of employees in Naviair = 492 • Average overhead costs in LFV/ANS = € 12,043 • Number of employees in LFV/ANS = 721 • Total number of employees in Naviair and LFV/ANS = 1213 The average overhead costs in LFV/ANS and Naviair = € 12,869 * (492/1213) + € 12,043 * (721/1213) = € 12,378 4) It should be noticed that savings related to overhead costs due to staff reduction estimated in Initiative 8 will be realized in 2015

17A) Project implementation (one time cost for all initiatives)	
Description/ rationale	Program implementation requires a number of actions generating internal and external costs to ensure successful transformation. The implementations costs cover activities and support during the integration period. After the definition phase comes the following phases: 
Preconditions/ assumptions	Assumptions: • Integration costs cover all internal and external costs associated with implementing the NUAC Programme. Integration costs are comprised by three main areas: – Costs associated with implementing the selected integration initiatives – benefit delivery areas – Costs associated with establishing concepts/prerequisites/solutions/procedures for the new NUAC company – pre-requisite areas – Cost associated with managing the NUAC Programme – direction and support areas • Within these three areas, costs will cover all implementation activities: e.g. planning, redesigning processes/structures/systems, IT/technology upgrades, integration execution, business consulting, change management, training and competence development, voluntary compensation package pool, preparation of sourcing and supplier management etc. • Integration costs will not contain costs for compensation to Senior Management and Management staff, as costs for compensation to these individuals are covered directly in the respective initiatives as negative benefits • Total integration costs will be described and allocated into: – Establishment costs for joint limited company – Internal FTE – Cost for Consulting & Legal services, C) costs for IT/software upgrades, D) Training, competence development and other attrition aiming activities, and E) Preparation of sourcing (Technical maintenance & administrative IT/ERP) • Average Internal FTE cost annually = 64000 euro based on the average total annual wage (lønsum) for Danish employees • Average Consulting & legal FTE cost annually remains at approx. same level as in the Definition phase = 405000 euro based on (249 working days of 8 hours at an average fee on 1500 d.kr) • Estimated integration period for merger scenario is approx 48 months, NUAC/SKAANE will take 36 months, and the Alliance scenario 30 months to implement - See Integration roadmaps for details for each scenario. • Integration scope will comprise 6 work streams + program management (merger scenario) with each approx. 6-8 FTE (4-6 internal FTE + 1-2 external FTE) • NUAC/SKAANE IT upgrade and integration costs where estimated at roughly 5m euro

	assuming a very LEAN IT upgrade for a limited scope compared to the full merger scenario – Therefore, IT costs are assumed substantially larger in the merger scenario
Baseline	
Costs	Breakdown of implementation costs: **Establishment costs for joint limited company (1A + 1B) = € 999,500 – Cost for legal services, preparation and establishment of new legal entities, legal aspects of separating the new business model, legal advice concerning certification and designation etc.** • 1A) Legal services - Internally (2 FTE * 3 years * 64000 euro) + Externally (½ FTE * 3 years * 405000 euro) = 991.500 euro • 1B) Cost for founding the Ltd. (Stiftelsesomkostninger) = 8000 euro **Implementation costs - Personnel (internal FTE and external FTE/advisors) (2A - 2H) = 14.104.500 euro. Cost for process, procedures and organization structural alignment and optimization, change and integration management, benefit management, preparation of certification and designation, development of HR (retrenchment) plan etc.** • 2A) Program management - Internally (2 FTE * 4 years * 64000 euro) + Externally (1 FTE * 4 years * 405000 euro) = 2.132.000 euro • 2B) Concepts & solutions - Internally (4 FTE * 1 year * 64000 euro) + Externally (2 FTE * 1 year * 405000 euro) = 1.066.000 euro • 2C) Corporate - Internally (4 FTE * 3 years * 64000 euro) + Externally (1 FTE * 3 years * 405000 euro) = 1.983.000 euro • 2D) Finance & IT - Internally (4 FTE * 3 years * 64000 euro) + Externally (1 FTE * 3 years * 405000 euro) = 1.983.000 euro • 2E) HR - Internally (4 FTE * 3 years * 64000 euro) + Externally (1 FTE * 3 years * 405000 euro) = 1.983.000 euro • 2F) Operations - Internally (6 FTE * 3 years * 64000 euro) + Externally (1½ FTE * 3 years * 405000 euro) = 2.974.500 euro • 2G) Technical - Internally (4 FTE * 3 years * 64000 euro) + Externally (1 FTE * 3 years * 405000 euro) = 1.983.000 euro **Implementation costs - IT upgrades/technology (hard ware/soft ware) = 8m euro. Cost for system alignment and optimization, system hardware and software upgrades, ATM system integration, administrative IT/ERP alignment etc.** • 3A) ERP alignment, integration and later sourcing (administrative IT) = 4m euro • 3B) Operative system integration (ATM, CNS etc.) = 3m euro • 3C) Other/remaining administrative IT upgrade (common platforms, etc) = 1m euro ***Training, competence development and other attrition aiming activities = 5m euro. Cost for integration related training, competence development in relation to new job descriptions and/or new job roles and technical content, voluntary retrenchment package pool to be used if necessary.*** **Preparation and implementation of sourcing (Technical maintenance & administrative IT/ERP) = 2m euro. Cost for preparing the planned sourcing, preparation of tender materials, supplier management and selection etc. Sourcing technical maintenance and systems supervision - Legal and business consulting advise** ***Sum - Total implementation costs (pkt 1 + pkt 2 + pkt 3 + pkt 4 + pkt 5)) = 30,104,000 euro***
Cost savings	N/A – Not relevant for this initiative (cost focused – Describing costs for carrying through all initiatives, and thus integrating the Naviair and LFV/ANS companies into NUAC

Total financial impact	Se “costs” above			
Expected start				
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Momentum and experience	Can be difficult to mobilize resources to an efficient integration team knowing all Definition phase details	M	H
Footnotes				

3 Initiatives in the NUAC/SKAANE Scenario

<table>
<tr><th colspan="5">1B) Optimization and re-design of management positions</th></tr>
<tr><td>Description/ rationale</td><td colspan="4">As described in the original NUAC/SKAANE report, the following management positions are required for the NUAC/SKAANE headquarter (in addition to the management positions in Naviair and LFV/ANS):

1 CEO
1 CEO Secretary

Note: Staffing of other administrative functions etc. is analyzed in Initiative 2) Optimization and re-design of administrative staff functions</td></tr>
<tr><td>Preconditions, assumptions</td><td colspan="4">Assumptions:
1) One CEO (and associated secretary) will be appointed for the NUAC/SKAANE headquarter on 1 January 2010
2) Current management in Naviair and LFV/ANS will continue in the current organizations
3) Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average payroll costs for each functional division. Payroll costs estimated for the new CEO position are based on current payroll costs for current the Director General/Director</td></tr>
<tr><td>Baseline</td><td colspan="4">None</td></tr>
<tr><td>Costs</td><td colspan="4">Payroll costs/salary: (annual costs)
• CEO: 1 * € 155,000 = € 155,000 (hiring)
• Secretary staff: 1 * € 52,500 = € 52,500 (hiring)
• Total payroll costs: = € 207,500</td></tr>
<tr><td>Cost savings</td><td colspan="4">None</td></tr>
<tr><td>Total financial impact</td><td colspan="4">Total financial impact:
• One time costs: € 0
• Annual payroll costs: € 207,500</td></tr>
<tr><td>Expected start</td><td colspan="4">New CEO and secretary will take effect as of 1 January 2010</td></tr>
<tr><td rowspan="3">Implementation risks</td><td>Risk Title</td><td>Description</td><td>Probability (L-M-H)</td><td>Impact (L-M-H)</td></tr>
<tr><td>Power balance</td><td>Appointment of new CEO for NUAC versus management in retained organizations could create tension, power struggles or just unclear accountability</td><td>M</td><td>H</td></tr>
<tr><td>Organizational complexity</td><td>Appointment of new CEO for NUAC will create a complex governance structure having to cooperate and agree all daily actions and decisions with national companies in Naviair and LFV/ANS</td><td>M</td><td>H</td></tr>
<tr><td>Footnotes</td><td colspan="4"></td></tr>
</table>

2B) Optimization and re-design of general administrative functions	
Description/ rationale	As described in the original NUAC/SKAANE report, the following additional administrative staff positions are required for the NUAC/SKAANE headquarter (in addition to the administrative staff positions in Naviair and LFV/ANS): Management: 4 FTE (excl. CEO: 1 FTE, who is covered in Initiative 1) General administration: 4 FTE (excl. CEO Secretary: 1 FTE, who is covered in Initiative 1) Personnel Administration: 2 FTE Salary Administration: 2 FTE Accounting, budgeting etc.: 4 FTE (reduced with 1 FTE – due to originally 4 countries in scope) Personnel development, travel etc.: 2 FTE Legal advisor: 1 FTE Safety& Quality Management: 3 FTE Public relations and internal info: 1 FTE Building support, reception etc.: 4 FTE Selection, recruiting, training etc.: 4 FTE (reduced with 1 FTE – due to originally 4 countries in scope) Total: 31 FTE (total reduction of 2 FTE – due to originally 4 countries in scope) A lean NUAC company with administrative support from both Naviair and LFV/ANS could potentially reduce the staff requirement with approx. 15 FTE to a total staff requirement of approx. 16 FTE
Preconditions/ assumptions	General assumptions: 1) Establishment of administrative support units in accordance with organizational design in the original NUAC/SKAANE projects 2) Above stated staff requirement have been subject to reduction due to the fact that the original staff requirement are based on an organization providing services to 4 countries: Norway, Finland, Sweden and Denmark 3) Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division NUAC Assumptions (Nordic UAC Phase 1 Report page 61-66) 1) How these resources will be organized will solely be a question for the coming management of NUAC 2) The transferal should take place so that sectors are transferred with as few changes to sector layout and operational procedures as possible 3) Controllers being employed from the ACC where the sectors are transferred should initially do the manning of the same sectors in the Nordic UAC as far as possible 4) The initial competence supply can be organized on permanent basis with employment and on temporary basis with hiring of staff or by secondment from the national organizations (owners) 5) The basic strategy should be to employ own staff for key personnel SKAANE assumptions (SKAANE report page 24-) 1) Naviair organization and structure concerning operational support functions will remain as today 2) In Malmö, the NUAC SKAANE project will have some effect on support and

<table>
<tr><td></td><td>management functions (at team level)
3) In total, the support and management functions at team level connected to the operations are foreseen to be reduced with an estimated 2,5 FTE
4) Noted that inclusion of Swedish airspace in Naviair operations will require Swedish expertise in the operational support functions in Naviair
5) No need for expansion of the supervisor group at Naviair
6) No need for expansion of the technical support group at Naviair
7) No need for expansion of management and administration
8) No need for expansion of procedures function, still necessary to have one Danish and one Swedish Head of Operations Procedure ACC to ensure correct handling of national documents
9) Sufficient with one Head of Operations Procedure ACC for Danish sectors
10) No need to change the resources planned to be allocated to DATMAS</td></tr>
<tr><td>Baseline</td><td>Not relevant</td></tr>
<tr><td>Costs</td><td>Payroll costs/salary: (annual costs) – Original NUAC/SKAANE (excl. 4 FTE):
• Management: 4 * € 106,500 =426,000
• Administrative Staff: 27 * € 67,500 = 1,822,500
• Total payroll costs: = €2,248,500

Payroll costs/salary: (annual costs) – New lean NUAC/SKAANE with administrative support from Naviair and LFV/ANS:
• Management: 2 * € 106,500 =213,000
• Administrative Staff: 14 * € 67,500 = 945,000
• Total payroll costs: = € 1,158 ,000</td></tr>
<tr><td>Cost savings</td><td></td></tr>
<tr><td>Total financial impact</td><td>Total financial impact – Original NUAC/SKAANE (excl. 4 FTE):
• One time costs: € 0
• Annual payroll costs: € 2,248,500

Total financial impact – New lean NUAC/SKAANE with administrative support from Naviair and LFV/ANS:
• One time costs: € 0
• Annual payroll costs: € 1,158 ,000</td></tr>
<tr><td>Expected start</td><td>Hiring of required staff members will take effect as of 1 January 2010</td></tr>
<tr><td>Implementation risks</td><td>
<table>
<tr><th>Risk Title</th><th>Description</th><th>Probability (L-M-H)</th><th>Impact (L-M-H)</th></tr>
<tr><td>Staff turn-over & productivity</td><td>High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff</td><td>M</td><td>L</td></tr>
<tr><td>Organizational complexity</td><td>Establishment of the NUAC subsidiary company will create a complex governance structure having to cooperate and agree all daily actions and decisions with national companies Naviair and LFV/ANS</td><td>M</td><td>M</td></tr>
</table>
</td></tr>
</table>

	Early process alignment	If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization	M	H
Footnotes				

3B) Optimization and re-design of technical staff functions – ATM Systems Development				
Description/ rationale	No impacts related to technical staff functions have been described in the original NUAC/SKAANE project			
Preconditions, assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

4B) Optimization and re-design of technical staff functions – Systems Maintenance and Supervision				
Description/ rationale	No impacts related to technical staff functions have been described in the original NUAC/SKAANE project			
Preconditions, assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

5B) Optimization and re-design of operational support staff functions – Procedures functions				
Description/ rationale	No impacts related to Procedures functions have been described in the original NUAC/SKAANE project			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

6B) Optimization and re-design of operational support staff functions – General Operational Support and Roster Planning functions	
Description/ rationale	As described in the original NUAC/SKAANE report, the following additional operational planning and duty roster planning functions are required for the NUAC/SKAANE headquarter (in addition to the staff positions in Naviair and LFV/ANS): Duty roster planning: 2 FTE Operational planning, co–ordination etc.: 4 FTE (reduced with 2 FTE – due to originally 4 countries in scope) Total: 6 FTE (totally reduced with 2 FTE – due to originally 4 countries in scope)
Preconditions, assumptions	General assumptions: 1) Establishment of operational planning and duty roster planning units in accordance with organizational design in the original NUAC/SKAANE projects 2) Above stated staff requirement have been subject to reduction, due to the fact that the original staff requirement are based on an organization providing services to 4 countries: Norway, Finland, Sweden and Denmark 3) Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division NUAC Assumptions (Nordic UAC Phase 1 Report page 61-66) 1) How these resources will be organized will solely be a question for the coming management of NUAC SKAANE assumptions (SKAANE report page 24-) 1) Naviair organization and structure concerning operational support functions will remain as today 2) In Malmö, the NUAC SKAANE project will have some effect on support and management functions (at team level) 3) In total, the support and management functions at team level connected to the operations are foreseen to be reduced with an estimated 2,5 FTE 4) Noted that inclusion of Swedish airspace in Naviair operations will require Swedish expertise in the operational support functions in Naviair 5) No need for expansion of the supervisor group at Naviair 6) No need for expansion of the technical support group at Naviair 7) No need for expansion of management and administration 8) No need for expansion of procedures function, still necessary to have one Danish and one Swedish Head of Operations Procedure ACC to ensure correct handling of national documents 9) Sufficient with one Head of Operations Procedure ACC for Danish sectors 10) No need to change the resources planned to be allocated to DATMAS
Baseline	Not relevant
Costs	Payroll costs/salary: (annual costs) – Original NUAC/SKAANE (excl. 2 FTE): • Duty roster planning staff: 2 * € 57,500 = € 115,000 • Other operational support staff: 4 * € 59,000 = 236,000 • Total payroll costs: = € 351,000
Cost savings	None
Total financial impact	Total financial impact – Original NUAC/SKAANE (excl. 2 FTE): • One time costs: € 0

<table>
<tr><td></td><td colspan="4">• Annual payroll costs: € 351,000</td></tr>
<tr><td>Expected start</td><td colspan="4">Hiring of required staff members will take effect as of 1 January 2011</td></tr>
<tr><td rowspan="3">Implementation risks</td><td>Risk Title</td><td>Description</td><td>Probability (L-M-H)</td><td>Impact (L-M-H)</td></tr>
<tr><td>Staff turn-over & productivity</td><td>High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff</td><td>M</td><td>L</td></tr>
<tr><td>Early process alignment</td><td>If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization</td><td>M</td><td>L</td></tr>
<tr><td>Footnotes</td><td colspan="4">None</td></tr>
</table>

7B) Optimization and re-design of operational staff functions – Briefing Officer				
Description/ rationale	No impacts related to Briefing Officer functions have been described in the original NUAC/SKAANE project			
Preconditions, assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

8B) Optimization and re-design of operational staff functions – Shutdown of two control centers in night hours with low traffic volume				
Description/ rationale	No impacts related to Shutdown of two control centers in night hours with low traffic volume have been described in the original NUAC/SKAANE project			
Preconditions, assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

9B) Optimization and re-design of operational staff functions – Optimization of Control Positions				
Description/ rationale	As stated in the original NUAC/SKAANE projects, estimated potential savings of 20 ATCOs can be realized The initiative will include transfer of a total of approx. 40 ACC-ATCOs (certified in Danish upper airspace – flight level 285 and above) from Copenhagen to Sturup, and a total of approx. 40 ACC-ATCOs (certified in Swedish lower airspace – below flight level 285) from Sturup to Copenhagen			
Preconditions/ assumptions	Assumptions: 1) The initiative is based on the assumptions stated in the original NUAC/SKAANE projects. Assumptions in the NUAC Programme Airspace Design Workgroup document regarding consolidation of positions have therefore not influenced the amount of positions 2) A total of approx. 40 ACC-ATCOs (certified in Danish upper airspace – flight level 285 and above) will be transferred from Copenhagen to Sturup, and a total of approx. 40 ACC-ATCOs (certified in Swedish lower airspace – below flight level 285) will be transferred from Sturup to Copenhagen			
Baseline	Not relevant			
Costs	None			
Cost savings	Reduced payroll costs/salary: (annual savings) • ATCO: 20 * € 87,000 = – € 1,740,000 • Total payroll costs reduced: – € 1,740,000			
Total financial impact	Net annual savings: – € 1,740,000			
Expected start	Reduction of required staff members will take effect as of 1 January 2010			
Implementation risks	None			
Footnotes	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Transfer of ATCOs	Transfer of 40 ATCOs from COP to Malmö, and vice versa can prove difficult due to training/competence issues, motivation etc.	M	H

10B) Common procurement and maintenance of administrative IT and add. applications				
Description/ rationale	No impacts related to Common procurement and maintenance of administrative IT and add. applications have been described in the original NUAC/SKAANE project			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

11B) Common Sourcing of tele/data communication services				
Description/ rationale	No impacts related to Common Sourcing of tele/data communication services have been described in the original NUAC/SKAANE project			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

12B) Common future purchasing and operation of standard 'other ATM systems'				
Description/ rationale	No impacts related to Common future purchasing and operation of standard 'other ATM systems' have been described in the original NUAC/SKAANE project			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

13B) Common use of existing surveillance infrastructure in Denmark and Sweden				
Description/ rationale	No impacts related to Common use of existing surveillance infrastructure in Denmark and Sweden have been described in the original NUAC/SKAANE project			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

14B) Common future purchasing and operation of standard CNS systems and infrastructure				
Description/ rationale	No impacts related to Common future purchasing and operation of standard CNS systems and infrastructure have been described in the original NUAC/SKAANE project			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

15B) Optimal use of existing basic and unit training simulators				
Description/ rationale	No impacts related to Optimal use of existing basic and unit training simulators have been described in the original NUAC/SKAANE project			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

16B) Reduction in General Overhead Costs				
Description/ rationale	No impacts related to Reduction in overhead costs have been described in the original NUAC/SKAANE project			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

17B) Project implementation (one time cost for all initiatives)				
Description/ rationale	IS costs for NUAC/SKAANE scenario will follow the original NUAC/SKAANE programme cost estimates (prices/costs forwarded to contemporary inflation rates) Total NUAC/SKAANE Integration costs described in the Feasibility Phase Final Report from January 2004 is estimated to 12.870.743 mio. euro, which today equals 13.391.000 (3.528.000 + 9.863.000) mio. euro using an annual inflation rate of 2%			
Preconditions/ assumptions				
Baseline				
Costs				
Cost savings				
Total financial impact				
Expected start				
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Momentum and experience	Can be difficult to mobilize resources to an efficient integration team knowing all Definition phase details	M	H
Footnotes	None			

4 Initiatives in Alliance Scenario

1C) Optimization and re-design of management positions	
Description/ rationale	The following management positions are required for the new NUAC Alliance entity (in addition to the management positions in Naviair and LFV/ANS): • 1 Head of NUAC Alliance entity • 1 Secretary
Preconditions/ assumptions	Current staff • Current amount of staff related to senior management and management positions in LFV/ANS and Naviair[1,2]: Senior Management: 4 FTE; Management: 3 FTE; Secretary: 5 FTE Business design • One Head of NUAC Alliance entity (and associated secretary) will be hired for the NUAC Alliance entity on 1 January 2008 • Current management in Naviair and LFV/ANS will continue in the current organizations Implication • Additional hiring of 1 Head of NUAC Alliance and 1 Secretary Calculation • Calculations of average payroll costs for each individual functional division analyzed in the individual initiatives are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average payroll costs for each functional division. Payroll costs estimated for the Head of NUAC Alliance entity are based on current payroll costs for staff on Senior Management level
Baseline[2]	2006 a total of: Naviair: • 1 Senior Manager (Director General), DG and 1 Secretary, DG • 1 Senior Manager, O (Head of Operations) and 1 Secretary, O • 1 Manager, OCH (Head of ATC CPH) LFV/ANS: • 1 Senior Manager (Director), EMS and 1 Secretary, EMS • 1 Senior Manager, AER – NKP (Head of AER) • 1 Manager, AER – STO (Head of ATC STO) and 1 Secretary, AER – STO • 1 Manager, AER – MM (Head of ATC MM) and 1 Secretary, AER – MM

<table>
<tr><td>Implication</td><td>
<table>
<tr><th></th><th>Current staff</th><th>NUAC Alliance (staff requirement)</th><th>Remaining organizations (staff requirement)</th><th>Sourcing</th><th>Reduction</th></tr>
<tr><td>Senior Manager (Director/ General Director)</td><td>2</td><td>-</td><td>2</td><td>-</td><td>-</td></tr>
<tr><td>Senior Manager</td><td>2</td><td>-</td><td>2</td><td>-</td><td>-</td></tr>
<tr><td>Senior Manager (Additional hiring)</td><td>-</td><td>1</td><td>-</td><td>-</td><td>-1</td></tr>
<tr><td>Manager</td><td>3</td><td>-</td><td>3</td><td>-</td><td>-</td></tr>
<tr><td>Secretary</td><td>5</td><td>1</td><td>5</td><td>-</td><td>-1</td></tr>
<tr><td>Total</td><td>12</td><td>2</td><td>12</td><td>-</td><td>-2</td></tr>
</table>
</td></tr>
<tr><td>Costs</td><td>Payroll costs/salary: (annual costs)
Head of NUAC Alliance entity: 1 * € 124,500 = € 124,500 (hiring)
Secretary staff: 1 * € 52,500 = € 52,500 (hiring)
Total payroll costs: = € 177,000</td></tr>
<tr><td>Cost savings</td><td>None</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
One time costs: € 0
Annual payroll costs: € 177,000</td></tr>
<tr><td>Expected start</td><td>Hiring of Head of NUAC Alliance entity and secretary will take effect as of 1 January 2008</td></tr>
<tr><td>Implementation risks</td><td>
<table>
<tr><th>Risk Title</th><th>Description</th><th>Probability (L-M-H)</th><th>Impact (L-M-H)</th></tr>
<tr><td>Power balance</td><td>Appointment of new CEO for NUAC alliance company could create tension, power struggles or just unclear accountability</td><td>M</td><td>H</td></tr>
<tr><td>Organizational complexity</td><td>Appointment of new CEO for NUAC alliance company will create a complex governance structure having to cooperate and agree all daily actions and decisions with national companies Naviair and LFV/ANS</td><td>M</td><td>H</td></tr>
<tr><td>Recruitment and staff turn-over</td><td>Lack of recruitment process clarity leads to turn-over of key managers</td><td>M</td><td>M</td></tr>
</table>
</td></tr>
<tr><td>Footnotes</td><td>1) Staffing of other administrative functions etc. is analyzed in Initiative 2) Optimization and re-design of administrative staff functions

2)The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme.</td></tr>
</table>

2C) Optimization and re-design of general administrative functions	
Description/ rationale	In order to optimize the current administrative functions, one new common centralized administrative staff function and related processes etc. have been designed in the business model for the Alliance Scenario. As within the merger Scenario, administrative staff functions that may be handled within the NUAC Alliance entity are designed in accordance with best practice – hence all processes, procedures, activities etc. within the respective functional areas have been harmonized and aligned to the new organizational design where possible Based on an assessment of the administrative staff functions in Naviair and LFV/ANS and the fact that both companies will remain as separate companies – hence both companies will have to obtain certification and designation – potential savings are assessed only[1] to be realized within the following function areas: • Business Development • Human Resource • ATM Training In order to establish a dedicated administrative support function, an additional resource requirement of 3 FTE to provide support (e.g. general administration of the Alliance, coordination of activities and initiatives that reside within the Alliance etc.) has been estimated
Preconditions/ assumptions	General assumptions: • Establishment of one centralized administrative support function that will provide support (e.g. general administration of the Alliance, coordination of activities and initiatives that reside within the Alliance etc.) and ensure optimal use of competences, knowledge sharing etc. in order to drive out synergy potentials related to the Alliance • Naviair and LFV/ANS will continue as separate companies – hence both companies will have to obtain certification and designation • Current management in Naviair and LFV/ANS will continue in the current organizations • Common development of administrative support processes, procedures and activities in accordance with best practice where possible Calculation • The stated amount of FTE per staff category/functional area is based on the individual employees' primary area of responsibility and daily activities. A detailed analysis of all employees' area of responsibility and daily activities, as well as level 3 to 4 process design and related responsibilities and activities has not been conducted • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

Management level	Senior Management – Assumptions: • Based on the fact that current senior management in Naviair and LFV/ANS will continue in the current organizations, the benefit potential is estimated at 0 FTE Management – Assumptions: • Based on the fact that current management in Naviair and LFV/ANS will continue in the current organizations, the benefit potential is estimated at 0 FTE Junior Management – Assumptions: • Based on the fact that current junior management in Naviair and LFV/ANS will continue in the current organizations, the benefit potential is estimated at 0 FTE Secretary – Assumptions: • Based on the fact that current senior management and management in Naviair and LFV/ANS will continue in the current organizations – hence no secretary positions will be affected – the benefit potential is estimated at 0 FTE
Business units: Business Development	• Current Staff – Current amount of staff related to Business Development in Naviair and LFV/ANS: 14 FTE • Business Design – Current Business Development functions are assumed to remain in the organizations, due to the fact that Naviair and LFV/ANS will remain as separate companies with a separate set of business development processes, activities etc. – Harmonization and alignment of activities related to development of the Alliance, and operational development of products and services, are assumed to increase effectiveness in daily operations and reduce workload • Implication – Based on the above stated assumptions, the benefit potential is estimated at 1 FTE
Business units: PR & Communication	• Current staff – Current amount of staff related to PR& Communication in Naviair and LFV/ANS: 3FTE • Business design – Based on the fact that Naviair and LFV/ANS will remain as separate companies, Naviair and LFV/ANS will have to maintain 2 decentralized communications units in case of crises, 2 PR functions etc. • Implication – Based on the current low staffing level of a total of 3 FTE in Naviair and LFV/ANS, combined with the fact that a full centralization and harmonization is not realizable in the NUAC Alliance entity, the benefit potential is estimated at 0 FTE

Business units: Legal Services	• Current staff – Current amount of staff related to Legal Services in Naviair and LFV/ANS: 3FTE • Implication – As stated in the merger scenario, the estimated benefit potential is 0 FTE due to national requirements etc. combined with current low staffing level
Business units: Quality and Safety	• Current staff – Current amount of staff related to Q&S in Naviair and LFV/ANS: 13 FTE • Business Design – Based on the fact that Naviair and LFV/ANS will continue as separate companies – hence both companies will have to obtain certification and designation – no potential synergies have been identified. As a consequence, both companies will have to correspond and report to two flight safety authorities, apply to two set of national safety management requirements etc. • Implication – Based on the above stated assumptions, the benefit potential is estimated at 0 FTE
Business units: Finance	• Current staff – Current amount of staff related to Finance in Naviair and LFV/ANS: 31 FTE – In addition, LFV Support provides finance related services to LFV/ANS of an annual service charge of € 3,3m[2] • Business Design – Due to the fact that Naviair and LFV/ANS will continue as separate companies – hence both companies will have to obtain certification and designation – current workload related to two charging schemes, two sets of common requirements etc. is assumed to be unchanged – In addition, both companies are assumed to maintain their current financial model, and both companies will have separate cost bases. As a consequence, it is assumed that the current finance/ERP systems will remain separate • Implication – Based on the above stated assumptions, the benefit potential is estimated at 0 FTE
Business units: Administrative IT	• Current staff and solution – Current amount of staff related to Administrative IT in Naviair and LFV/ANS: 13 FTE – In addition, LFV Data provides administrative IT services to LFV/ANS of an annual service charge of € 3,8m[2] • Business Design – Based on the fact that both companies will have to obtain certification and designation, Naviair and LFV/ANS are faced with requirements regarding access to various sets of data in order to be able to follow-up etc. As a consequence, it is assumed that current IT platforms will remain separate, why potential synergies related to harmonization, consolidation etc. are limited • Implication – Based on the above stated assumptions, the benefit potential is estimated at 0 FTE

Business Units: HR	• Current staff – Current amount of staff related to Human Resource in Naviair and LFV/ANS: 26 FTE – In addition, LFV Support provides services related to wage administration etc. of an annual service charge of approx. € 0,5m.[2] • Business Design – Current Human Resource functions are assumed to remain in the organizations, due to the fact that Naviair and LFV/ANS will remain as separate companies – hence decentralized negotiation of terms/working conditions, recruiting, separate development of human resource strategy etc. – Harmonization and alignment of activities related to non-operational training and development, coordination of training activities etc., are assumed to increase effectiveness in daily operations • Implication – Based on the above stated assumptions regarding reduced workload, the benefit potential is estimated at a total of approx. 2 FTE – Potential savings benefits related to external wage administration are assessed to be limited due to the complexity related to cross boarder wage administration
Business units ATM Training	Current staff • Current amount of total staff related to ATM Training in Naviair and LFV/ANS: 30 FTE Business Design • Optimal joint use of existing basic and unit training simulators in Denmark and Sweden (as described in Initiative 15C "Optimal use of existing basic and unit training simulators") • Shutdown of basic training simulator (RADSIM) in Copenhagen • Integration of basic training and unit training in one simulator at Entry Point North (through shutdown of existing SMART simulator and expansion of capacity of BEST simulator in Malmö) Implication: • A total of approx. 10 FTE are currently assumed to be attached to the RADSIM simulator in Naviair, of which 5 FTE are assumed to be transferred to internal unit training and 5 are expected to be redundant after closure of the simulator. • Similarly, a total of approx. 5 FTE are currently assumed to be attached to the SMART simulator in LFV/ANS, of which 3 FTE are assumed to be transferred to internal unit training and 2 FTE are expected to be redundant after closure of the SMART simulator • Based on the above stated assumptions, the benefit potential is estimated at a total of approx. 7 FTE

Baseline[3]	***Naviair:*** • 6 Senior Management, 1 Business Development, 1 Communication, 1 Legal, 1 Q & S, 1 Finance, 1 HR • 6 Management, 2 Finance, 4 HR • 1 Junior Manager, HR • 4 Secretary, 1 Communication, 1 Finance, 2 HR • 6 Business Development, Business Development • 2 Communication, PR& Communications • 2 Legal Services, Legal • 3 Quality& Safety, Q & S • 17 Finance, 16 Finance, 1 A • 9 Administrative IT, Finance • 15 HR, HR • 10 Facility Management, HR • 16 ATM Training, HR **LFV/ANS:** • 7 Senior Management, 4 EMS, 1 ASI, 1 ASD, 1 ATA HK • 9 Manager, 1 EMS, 4 ASD, 1 ATA HK, 1 AER NKP, 1 AER STO, 1 AER MM • 3 Junior Manager, ASD • 4 Secretary, 2 ASI, 1 ASD, 1 ATA HK • 8 Business Development, 7 ASD, 1 ATA HK • 1 Communication, EMS • 1 Legal Services, ASD • 10 Quality & Safety, 3 EMS, 5 ASD, 1 ATA HK, 1 AER MM • 14 Finance, 2 EMS, 5 ASD, 1 ASI, 2 ATA HK, 1 ATA LAV, 1 AER NKP, 1 AER STO, 1 AER MM • 4 Administrative IT, ASD • 11 HR, 1 EMS, 5 ASD, 1 ATA HK, 1 AER NKP, 1 AER STO, 2 AER MM • 6 Facility Management, 3 AER STO, 3 AER MM • 14 ATM Training, 12 ASD, 1 AER STO, 1 AER MM • 3 Other Administrative staff, ASD

Implication		Current staff	NUAC Alliance (staff requirement)	Remaining organizations (staff requirement)	Sourcing	Reduction
	Senior Management	13		13	-	-
	Manager	15		15	-	-
	Junior Manager	4		4	-	-
	Secretary	8		8	-	-
	Business dev.	14		13	-	1
	PR & Communication	3		3	-	-
	Legal services	3		3	-	-
	Quality &Safety	13		13	-	-
	Finance	31		31	-	-
	Administrative IT	13		13	-	-
	HR	26		24	-	2
	Facility Management	16		16	-	-
	ATM Training	30		23	-	7
	Other administrative staff	3		3	-	-
	Administrative staff (additional hiring)	-	3	-	-	-3
	Total	192	3	182	-	7
Costs	None					
Cost savings	Payroll costs/salary: (annual) • Administrative staff: 7 * € 67,500 = – € 472,500 • Total payroll costs reduced: **– € 472,500**					
Total financial impact	Total financial impact: • One time costs: € 0 • Net annual savings: **– € 472,500**					
Expected start	Reduction of required staff members will take effect as of 1 January 2011					

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Staff turn-over & productivity	High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff	M	L
	Organizational complexity	Establishment of alliance company will create a complex governance structure having to cooperate and agree all daily actions and decisions with national companies Naviair and LFV/ANS	M	M
	Identifying certification depended functions	Benefit realization depends on a sharp identification of which administrative staff functions are connected to and impacting on certification – this can become difficult	M	M
	Early process alignment	If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization	M	H
Footnotes	1) See assumptions and arguments below for function areas where potential savings are assessed not to be realized in the Alliance scenario 2) Service Level Agreement (SLA) between LFV Support/LFV Data and LFV/ANS: Annual service fee related to Finance (€ 3,3m), Human Resource (€ 0,5m) and Administrative IT (€ 3,8m) activities are estimated at a total of € 7,4m 3) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is out of scope for this phase of the NUAC Programme			

3C) Optimization and re-design of technical staff functions – ATM Systems Development	
Description/ rationale	The NUAC Alliance will optimize ATM system development through • Transfer of all development activities related to ATM systems to COOPANS after implementation of DATMAS and EUROCAT[1]. This will optimize development activities by – Elimination of duplicate development activities – Economies of scale through centralized development in COOPANS • Establishment of one common centralized system development unit with following primary responsibilities and activities related to system development: – Draw up specification of requirements to the common ATM system – Project management – Technical architecture – Vendor management – Systems testing – Technical procedures for ATM system – Implementation of ATM enhancements
Preconditions/ assumptions	Current staff: • Current amount of staff working with ATM system development in LFV/ANS and Naviair: Senior Management: 1 FTE, Management: 3 FTE, Junior Management: 6 FTE, Secretary: 2 FTE, Development staff: 54 FTE, Administrative development support: 13 FTE Business Design • COOPANS will perform all future development-related activities in the common ATM system after implementation of DATMAS and EUROCAT[1] • Establishment of one common centralized system development unit in accordance with the organizational design in the Business Model (see Business Model section of the Definition Phase Final Report) • The primary responsibilities and activities in the new system development function will be to draw up specification of requirements to the common ATM system, project management, technical architecture, vendor management etc. • COOPANS cooperation resides within NUAC – not in the current organizations Implication • Based on above stated staff requirement, the reduction in staff is estimated at approx. 44 FTE Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

Baseline[2]	The current amount of employees related to ATM system development functions employs as of 1 April 2006 approx. a total of: Naviair: • 1 Senior Management, A • 2 Management, A • 3 Junior Management, A • 40 Development staff, 30 A, 10 OT • 11 Administrative Development support, A LFV/ANS: • 1 Management, ASD • 3 Junior Management, ASD • 2 Secretary, ASD • 14 Development staff, ASD • 2 Administrative Development support, ASD

Implication

	Current staff	NUAC Alliance (staff requirement)	Remaining organizations (staff requirement)	Sourcing	Reduction
Senior Management	1	1	-	-	0
Management	3	-	-	-	3
Junior Management	6	2	-	-	4
Secretary	2	-	-	-	2
Development staff	54	29	-	-	25
Admin development support	13	3	-	-	10
Total	79	35	-	-	44

<table>
<tr><td>Costs</td><td>Severance costs:
Management: 3 * 1 years of salary * € 106,500 = € 319,500
Total severance costs: € 319,500</td></tr>
<tr><td>Cost savings</td><td>Reduced payroll costs/salary: (annual savings)
Management: 3* € 106,500 = – € 319,500
Junior Management: 4 * € 89,000 = – € 356,000
Development staff: 25 * € 79,500 = – € 1,987,500
Administrative development support: 10 * € 65,000 = – € 650,000
Secretary: 2 * € 52,500 = – € 105,000
Total payroll costs reduced: = – € 3,418,000</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
One time costs: € 319,500
Net annual savings: –€ 3,418,000</td></tr>
<tr><td>Expected start</td><td>Reduction of required staff members will take effect as of 1 January 2011</td></tr>
<tr><td>Implementation risks</td><td>
<table>
<tr><th>Risk Title</th><th>Description</th><th>Probability (L-M-H)</th><th>Impact (L-M-H)</th></tr>
<tr><td>Organizational complexity</td><td>Establishment of alliance company will create a complex governance structure having to cooperate and agree all daily actions and decisions with national companies Naviair and LFV/ANS</td><td>M</td><td>M</td></tr>
<tr><td>Staff turn-over & productivity</td><td>High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff</td><td>M</td><td>M</td></tr>
<tr><td>Dependencies</td><td>If DATMAS implementation and/or the later EUROCAT upgrade is delayed, this initiative will be impacted</td><td>M</td><td>M</td></tr>
<tr><td>Key supplier management and strategic purchase</td><td>Ability at receiving company to meet NUAC requirements concerning systems development may cause threat to expected benefits</td><td>M</td><td>M</td></tr>
<tr><td>Early process alignment</td><td>If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization</td><td>M</td><td>M</td></tr>
</table>
</td></tr>
<tr><td>Footnotes</td><td>1) 1) DATMAS system is implemented as scheduled in ultimo 2007, and EUROCAT system is upgraded to DATMAS level ultimo 2011

2) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme</td></tr>
</table>

4C) Optimization and re-design of technical staff functions – Systems Maintenance and Supervision	
Description/ rationale	Based on the assumption that a future NUAC Company will based on a harmonized and consolidated ATM and CNS systems and infrastructure[1], significant potential savings related to systems maintenance and supervision exist. Sourcing of systems maintenance and supervision from a third party (i.e. as currently done in LFV/ANS by ELTEL) is assumed to realize a total savings potential of approx. 10% in costs related to systems maintenance and supervision (payroll costs etc.). Savings of 10% means that the cost base for NUAC is reduced with 10% compared to the total cost base for these services today. Experience from sourcing of systems maintenance and supervision in other industries show an expected savings potential of 10-15%. The 10% savings used here is the result of a conservative and realistic approach. The cost reduction is based on: • Achievement of lower service costs through increased competition • Service providers' ability to achieving greater economies of scale than may be achieved in the current solution • Harmonization and consolidated of current ATM systems through COOPANS – hence realizing a reduction of workload related to systems maintenance • Additional potential savings related to the infrastructure servicing of current infrastructure in Jutland may be realized through sourcing. As a consequence of the above described options, the primary responsibilities and activities related to the new system maintenance and supervision in the merged organization will be: • Vendor management (SLA etc.) • Validation etc.
Preconditions/ assumptions	Current staff • Current amount of staff working with system maintenance and supervision in LFV/ANS and Naviair: Management: 1 FTE, Junior Management: 14 FTE, Secretary: 1 FTE, Technical supervisors: 10 FTE, Maintenance staff: 131 FTE, Facility Management: 3 FTE Business Design • All system maintenance and supervision related activities will be performed by one joint provider across Sweden and Denmark in accordance with the organizational design in the Business Model (see Business Model section of the Definition Phase Final Report) • The primary responsibilities and activities in the new system maintenance and supervision function in the Alliance will be vendor management (SLA etc.), validation etc. • Harmonization and standardization of current ATM and CNS systems and infrastructure as well as consolidation to common ATM and CNS system platforms, as described in Initiative 12, 13 and 14 • The staff requirement related to vendor management in the new NUAC Company is estimated at 1 FTE per location (see Business Model section of the Definition Phase Final Report). Total staff requirement: 3 FTE Implications • Additional hiring (3 Vendor Management and 1 Technical Supervisor) • 10% savings on costs related to systems maintenance and supervision (payroll costs etc.)

- A detailed business case for sourcing of technical maintenance and supervision has not been conducted and as such, only known aspects have been assessed

Calculations

- Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition
- Calculations of average payroll costs for each individual functional division are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

Baseline[2]

The current amount of employees related to system maintenance functions employs as of 1 April 2006 a total of approx.:

Naviair:

- 1 Management, OT
- 10 Junior Management, OT
- 10 Technical Supervisors, OT
- 61 Maintenance staff, OT
- 3 Facility Management, OT

LFV/ANS:

- 4 Junior Management, ASD
- 1 Secretary, ASD
- 37 Maintenance staff , 30 ASD, 7 ASI
- 4 Flygmarer, ASD
- 28 Other Technical Staff, 27 ASD, 1 AER NKP
- 1 Technical Investigation, ASD

Implication

	Current staff	NUAC Alliance (staff requirement)	Remaining organizations (staff requirement)	Sourcing	Reduction
Management	1	-	-	1	-
Junior Management	14	-	2	12	-
Secretary	1	-	-	1	-
Technical supervisors	10	-	11	-	-1
Maintenance staff (maintenance staff, flygmagerer, other technical staff and technical investigation)	131	-	4	127	-
Vendor Management	-	3	-	-	-3

	Facility Management	3	-	-	3	-
	Total	160	3	17	144	-4

Costs	Total current payroll costs: • Management: 1 * € 106,500 = € 106,500 • Junior Management: 12 * € 89,000 = € 1,068,000 • Secretary: 1 * € 52,500 = € 52,500 • Maintenance Staff: 127 * € 69,000 = € 8,763,000 • Technical Facility Management: 3 * € 69,000 = € 207,000 • Total payroll costs: **– € 10,197,000** • Vendor Management: 3 * € 67,500 = **–**€202,500 (additional hiring) • Technical Supervisor: 1 * € 58,000 = –€ 58,000 (additional hiring)
Cost savings	Total payroll costs/salary reduction: (annual savings) • Savings via sourcing from a third party: 0,10 * € 10,197,000 = – € 1,019,700 • Total annual savings: (**–**€ 1,019,700+ €202,500 + € 58,000)=**– € 759,200**
Total financial impact	Total financial impact: • Savings via sourcing from a third party: Net annual savings: **– € 759,200**
Expected start	Reduction of required staff members will take effect as of 1 January 2011

Implementation risks

Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
Staff turn-over & productivity	High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – low productivity due to decreasing motivation among retrenched staff	M	M

Footnotes

1) Potential cost savings related to ATM and CNS systems and infrastructure that are non-FTE related are handled in 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

2) The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is out of scope for this phase of the NUAC Programme

5C) Optimization and re-design of operational support staff functions – Procedures functions	
Description/ rationale	Through centralization and alignment of current processes, procedures and activities as well as associated reduction in duplicate activities and positions, the NUAC Alliance will optimize operational procedures functions. Also, benefit potentials will arise due to common development of e.g. Aeronautical Information Publication etc.
Preconditions/ assumptions	Current staff • Current amount of staff related to Procedures, Investigation and other operational staff in LFV/ANS and Naviair: Management 9 FTE, Junior Management: 19 FTE, Procedure: 58 FTE, Investigation: 11 FTE, 1 Secretary Business Design • Establishment of one common centralized Procedures unit in accordance with the organizational design in the Business Model – hence reducing duplicate positions in management functions, specialist functions, international representatives etc. • The unit has to produce to both LFV/ANS and Naviair due to certification and designation of two companies • Harmonization and alignment of current Procedures processes, activities etc., hereby increasing effectiveness in daily operations and reduce workload • Reduced workload due to only one aligned set of Procedures development processes – e.g. Aeronautical Information Publication etc. Implication • Based on the above stated assumptions regarding duplicate positions increased efficiency and the fact the fact that the unit will have to produce to two companies, the benefit potential is estimated at a total of approx. 34 FTE Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through normal attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

<table>
<tr><td>Baseline[1]</td><td>The current amount of employees related to procedure functions as of 1 April 2006 a total of:

Naviair:
1 Management, OP
4 Junior Management, OP
14 Procedures, OP
2 Investigation, OP
LFV/ANS:
8 Management, 1 ASD, 2 ATA LAV, 2 ATA NKP, 1 AER STO, 2 AER MM
15 Junior Management, 4 ASD, 5 AER STO, 1 AFTN, 5 AER MM
44 Procedure, 24 ASD, 1 ATA – LAV, 11 AER- MM, 8 AER – STO
9 Investigation, 7 ASD, 2 AER- STO
1 Secretary, ATA LAV</td></tr>
<tr><td>Implication[2]</td><td>
<table>
<tr><th></th><th>Current staff</th><th>NUAC Alliance (staff requirement)</th><th>Remaining organizations (staff requirement)</th><th>Sourcing</th><th>Reduction</th></tr>
<tr><td>Management</td><td>9</td><td>1</td><td>-</td><td>-</td><td>8</td></tr>
<tr><td>Junior Management</td><td>19</td><td>2</td><td>-</td><td>-</td><td>17</td></tr>
<tr><td>Procedure</td><td>58</td><td>32</td><td>17</td><td>-</td><td>9</td></tr>
<tr><td>Investigation</td><td>11</td><td>11</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Secretary</td><td>1</td><td>1</td><td></td><td></td><td></td></tr>
<tr><td>Total</td><td>98</td><td>47</td><td>17</td><td>-</td><td>34</td></tr>
</table>
</td></tr>
<tr><td>Costs</td><td>Severance costs (one time costs):
Management: 8 * 1 years of salary * € 106,500 = € 852,000
Total severance costs: € 852,000</td></tr>
<tr><td>Cost savings</td><td>Reduced payroll costs/salary: (annual savings)
Management: 8 * € 106,500 = – € 852,000
Junior Management: 17 * € 89,000 = – € 1,513,000
Procedures: 9 * € 87,000 = – € 783,000
Total payroll costs reduced: – € 3,148,000</td></tr>
<tr><td>Total financial impact</td><td>Total financial impact:
One time costs: € 852,000
Net annual savings: – € 3,148,000</td></tr>
<tr><td>Expected start</td><td>Reduction of required staff members will take effect as of 1 January 2011</td></tr>
</table>

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Organizational complexity	Establishment of alliance company will create a complex governance structure having to cooperate and agree all daily actions and decisions with national companies Naviair and LFV/ANS	M	L
	Staff turn-over & productivity	High turnover rate among business critical employees, due to the requirement regarding mobilization to NUAC headquarter – Low productivity due to decreasing motivation among retrenched staff	M	L
	Early process alignment	If processes are not aligned relatively early in the project, the risk is that functions will be integrated without process optimization and thus without benefit realization	M	L
Footnotes	1) Note: The above stated amount of FTE within the respective function areas is NOT based on the employees' current function area, but the employees' primary area of responsibility and daily-related activities. The allocation of employees to primary area of responsibility and daily-related activities are based on interviews with key personnel in LFV/ANS and Naviair. The potential FTE savings are subject to some uncertainty due to the fact that detailed process and activity analysis is not within scope for this phase of the NUAC Programme 2) It must be noticed that the absolved stated saving potential must be considered due conservative due to the complexity of the operational management area. Future analysis might show potential for further savings			

6C) Optimization and re-design of operational support staff functions – General operational support and roster planning functions				
Description/ rationale	Based on the assumption that no changes or staff reductions can be made in regards to operational support staff functions – i.e. those operational support staff functions that are an integrated part of the operational air navigation service – no potential savings may be realized in this initiative			
Preconditions/ assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

7C) Optimization and re-design of operational staff functions – Briefing Officer				
Description/ rationale	Based on the assumption that no changes or staff reductions can be made in regards to operational staff functions, no potential savings may be realized in this initiative			
Preconditions, assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

8C) Optimization and re-design of operational staff functions – Shutdown of two control centers in night hours with low traffic volume				
Description/ rationale	Based on the assumption that no changes or staff reductions can be made in regards to operational staff functions, no potential savings may be realized in this initiative			
Preconditions, assumptions	None			
Baseline	None			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	None			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
Footnotes	None			

9C) Optimization and re-design of operational staff functions – Optimization of control positions	
Description/ Rationale	The airspace design and solution as defined in the Alliance Scenario makes it possible to optimize the current utilization of operators through consolidation of positions to Copenhagen, Stockholm and Malmö. Local approach positions are not included in the initiative (e.g. approach centers in Norrköping, Göteborg and Billund) Analysis in the NUAC Programme Airspace Design Workgroup estimated that the required numbers of positions in the Alliance Scenario are 109. Current baseline of positions is estimated at a total of 114 positions leading to a total reduction of 5 positions in the Alliance Scenario
Preconditions/ assumptions	Current Solution • The total number of positions are 114 • One position is estimated at a total of approx 5 FTE Business Design • The initiative is based on the assumptions in the NUAC Programme Airspace Design Workgroup document regarding consolidation of positions • Analysis in the NUAC Programme Airspace Design Workgroup estimated that the required numbers of positions in the Alliance Scenario are 109. Implication • Savings related to a reduction of 5 positions, which equals 25 FTE Calculation • Severance costs for senior management and management positions are estimated at one year of salary. Severance costs for other staff categories are omitted, since it is assumed that these staff categories will retain their positions until they withdraw from their position. Redundancies will – if possible – be handled through natural attrition • Calculations of average payroll costs for each individual functional division, analyzed in the individual initiatives, are based on current average payroll costs in Naviair and LFV/ANS as of 1 April 2006. Cost savings per employee are calculated from total average salaries for each functional division

<table>
<tr><td>Baseline</td><td colspan="6">Current amount of Operational and Operational Support Staff in scope

Naviair
• 87 ACC-ATCO, OCH
• 50 APP-ATCO, OCH
• 10 Watch supervisors, OCH
• 46 FDO Assistants, OCH

LFV/ANS
• 228 ACC-ATCO
• 69 APP-ATCO
• 30 Watch Supervisors
• 15 Tactical TS
• 38 FDO Assistants [1]</td></tr>
<tr><td>Implication</td><td></td><td>Current staff</td><td>NUAC Company (staff requirement)</td><td>Remaining organizations (staff requirement)</td><td>Sourcing</td><td>Reduction</td></tr>
<tr><td></td><td>ACC-ATCO</td><td>315</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>APP- ATCO</td><td>119</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Watch supervisors</td><td>40</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Tactical TS</td><td>15</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>FDO Assistant</td><td>84</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Total</td><td>573</td><td></td><td></td><td></td><td>25</td></tr>
<tr><td>Costs</td><td colspan="6">N/A</td></tr>
<tr><td>Cost savings</td><td colspan="6">Reduced payroll costs/salary: (annual savings)
• ATCO: 25 * € 87,000 = – € 2,175,000
• Total payroll costs reduced: – € 2,175,000</td></tr>
<tr><td>Total financial impact</td><td colspan="6">Total financial impact:
• Net annual savings: – € 2,175,000</td></tr>
<tr><td>Expected start</td><td colspan="6">Reduction of required staff members will take effect as of 1 January 2010</td></tr>
<tr><td>Implementation risks</td><td>Risk Title</td><td colspan="2">Description</td><td>Probability (L-M-H)</td><td>Impact (L-M-H)</td></tr>
<tr><td></td><td>Resistance to change</td><td colspan="2">Uncertainty and lack of understanding and clear communication.</td><td>M</td><td>H</td></tr>
<tr><td>Footnotes</td><td colspan="6">1) The 38 FDO assistants are categorized as “FDO Assistant” (19) and “other operational staff” in the Allocation sheet in “Appendix 3 – Business Case Documentation”</td></tr>
</table>

10C) Common procurement and maintenance of administrative IT and add. applications	
Description/ rationale	The NUAC Company will optimize administrative IT – defined as all non-operational (CNS, ATM) related hardware and software – and achieve lower costs through • Standardization of all key applications and platforms related to administrative IT • Common procurement of applications and IT hardware
Preconditions/ assumptions	Business Design • Common procurement will provide savings relating to a reduction of the current IT budgets of approximately 5%. This is based on increased bargaining power and standardization of all key applications in order to reduce license and maintenance and support costs • The existence of two separate organizations (and IT administrative platforms) as described in the Alliance scenario will limit the savings of common future procurement of administrative IT • The estimated cost reduction comes into procurement of front office hardware. PA's experience from comparable situations indicates that front office hardware requires harmonized IT platforms to a lesser extent than software licenses and back office hardware • It is assumed that there will be no possibility of reaching savings related to common maintenance and support according to the organizational set-up described in the Alliance Scenario with two separate organizations (and two separate IT administrative departments).
Baseline	DK • Investment plans and budget (excl. FTE) € 940,000[1] SE • Investment plan and budget (excl. FTE) € €1,360,000[2]
Costs	None
Cost savings	DK • Investment plans and budget (excl. FTE) € 940,000 * Cost reductions 5% of current investments = € 50,000 SE • Investments (excl. FTE) € 1,360,000 * Cost reductions 5% current support, maintenance and investment costs approx = € 70,000 Total cost reduction • Support, maintenance and investment = € 50,000 + € 70,000 = **€ 120,000**
Total financial impact	Se "cost savings" above

Expected start	Start date: 2007, implementation: 36 months (project) Applications, systems and hardware will be replaced on a running basis, and it is estimated that all key systems and applications (excl. SAP) will have been replaced/standardized within 36 months from initiation			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Additional applications and support systems	The complexity in eliminating the current significant number of additional applications and support systems proves more difficult than estimated, and thus benefits are only partially achieved, or it takes significantly longer to reduce/eliminate these systems	L	L
	Organizational objections	Significant objections against: 1. Eliminating current support applications 2. Standardizing on common systems platforms	M	L
	Implementation costs are underestimated	Risk that the overall implementation costs and time period to achieve a standardized platform are underestimated, and that significantly more costs will be incurred on this basis	M	M
Footnotes	1) Based on investment plan for Administrative IT in 2006 for Naviair and interviews with experts from Naviair. See also Initiative 10A) Common procurement and maintenance of administrative IT and add. applications 2) It is assumed that the share of the investment budget for administrative IT (exclusive FTE) compared to the total budget for administrative IT (Support, Maintenance and investments excl. FTE) is the same in LFV/ANS as in Naviair. The ratio between investment budget for administrative IT and the total Administrative IT (Support, Maintenance and investments) in Naviair is therefore used to calculate the investment budget to Administrative IT in LFV/ANS: a) Total budget to administrative IT in LFV/ANS = € 2,810,000 b) Investment budget to administrative IT in Naviair = € 940,000 c) Total budget to administrative IT in Naviair = € 1,940,000 Investment budget to administrative IT in LFV/ANS = a *(b/c) € 2,810,000 * (€ 940,000/€ 1,940,000) = **€1,360,000** See Initiative 10A) Common procurement and maintenance of administrative IT and add. applications for the calculation of the total budget for administrative IT			

11C) Common sourcing of tele/data communication services				
Description/ rationale	It is assumed that there will be a low possibility of reaching savings related to common sourcing of tele/data communication according to the organizational set-up described in the Alliance Scenario with two separate organizations			
Preconditions/ assumptions	None			
Baseline	Not relevant			
Costs	None			
Cost savings	None			
Total financial impact	None			
Expected start	Not relevant			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
			N/A	N/A
			N/A	N/A
			N/A	N/A
Footnotes				

12C) Common future purchasing and operation of standard 'other ATM systems'	
Description/ rationale	Common future purchasing and operation of standard 'other ATM systems' (i.e. systems are replaced at the end of their life cycle). The category 'other ATM systems' covers all relevant ATM systems except CNS systems, tower systems and systems covered by the COOPANS cooperation[1] The initiative will bring cost reductions in relation to the present situation in the following two areas: • **Common future purchasing of standard 'other ATM systems'** will create estimated cost reductions on purchase of 10% in relation to the present situation, where the organizations purchase 'other ATM systems' separately. The cost reductions are accomplished through: – Improved bargaining power – Reduced adjustment costs (i.e. expenses for external consulting services in the form of project management, requirement, development, testing etc.) – Reduced implementation costs (i.e. expenses for external consulting services in the form of training, installation etc.) • **Common future operation of 'other ATM systems'** will create estimated cost reductions on operation on 5% in relation to the present situation, where the organizations operate the systems separately. The cost reductions are accomplished through: – Improved framework agreements (external consulting services etc.) – Maintenance costs (expenses for licenses, upgrades, hardware replacements, external consulting services for operation, support, maintenance, upgrades etc.)
Preconditions/ assumptions	The initiatives are based on the following preconditions: • Gradual standardization and harmonization of system platforms • Harmonization of regulative matters regarding technical standards in ATM systems • The average lifetime of 'other ATM systems' is approx. 10 years[2] The estimates of the initiative are based on the following arguments: • Experience from the COOPANS cooperation indicates considerable cost reductions related to joint cross-national purchase. The purchase price has been reduced with approx. 30% in relation to a scenario, where the three countries had purchased the systems separately[2] • The study "The impact of fragmentation in European ATM/CNS" indicates a huge potential for cost reductions by common purchasing and operations of 'other ATM systems' . The study demonstrates the existence of fragmentation costs related to purchasing and operation of ATM systems in Europe (fragmentation costs arise through smaller than optimal operational ANSP units in Europe) e.g. cost of piece-meal procurement, fragmented maintenance and development operations, fragmented planning and investment appraisal etc. • An unexploited potential exists as the two organizations presently do not have cooperation on purchase or operation in this area[2] • PA's experience from comparable industries confirms that organizations will typically obtain considerable cost reductions by common purchasing of complex systems. It must be stressed that no actual studies of the benefits by a merger of 'other ATM systems' exist – partly as a consequence of little consolidation experience • The estimated cost reductions are based on the implications of the organizational

	set-up described in the Alliance scenario. More specifically – The existence of two separate organizations (and cost bases) – as described in the Alliance scenario – is assumed to have a negative impact on potential savings related to common future purchasing of standard 'other ATM systems' – e.g. it would be difficult to coordinate the requirement and replacement of systems within two separate organizations. In addition, alignment and timing of governmental appropriations impacting on the feasibility to synchronize the replacement of 'other ATM systems' in Denmark and Sweden – Two separate organizations are assumed to have a negative impact on potential savings related to common future operation of 'other ATM systems' , due to different sets of procedures and processes as well as the existence of inevitable duplicate activities The initiative has not illustrated the following: • The possibility of merging some of the 'other ATM systems' • An analysis to clarify if all present systems in the category 'other ATM systems' are necessary This initiative has not analyzed the implication of the initiative related to FTE – this will be treated separately in Initiative 4) Technical staff function – Systems maintenance
Baseline	Naviair • Annual operating costs of 'other ATM systems' : approx. DKK 7,200,000[3] ~ € 965,000 • The expected investment costs of 'other ATM systems' in a 10-year period: approx. DKK 135,000,000[4] ~ € 18,100,000 LFV/ANS • Annual operation costs of 'other ATM systems' : approx. SEK 14,600,000[5] ~ approx. € 1,570,000 • The expected investment costs of the 'other ATM systems' in a 10-year period: SEK 175,000,000 ~ approx. € 18,820,000[6]
Costs	None
Cost savings	The initiative brings the following cost reductions: • **Cost reduction on annual operation costs** = € 2,530,000[7] * 5% cost reduction = € 126,500 • **Avoidable investment costs =** € 36,920,000[8] * 10% cost reduction = € 3,690,000 Redemption of cost reductions: • It is assumed that the cost reductions will be redeemed at once in 10 years, i.e. in 2016 where the life cycle of the systems is complete[9] • The avoidable reductions on investment are a one-off reduction whereas the cost reductions on operation will continue each year
Total financial impact	Se "cost savings" above
Expected start	Replacement at once in 2016

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Standardization and harmonizationbetween Sweden and Denmark	Initiative assumes a certain alignment of the current national technical requirements in regards to the systems (some non alignment between LFV and SLV exist). There is a risk that it proves difficult or impossible to achieve this alignment and thus benefits will not be achieved	L	M
	Technical alignment proves more difficult than estimated	Initiative assumes that the technical alignment of the current systems can be undertaken relatively easily (confirmed by senior ATM experts). However a risk exists that this proves more difficult to achieve than estimated	M	M
	National military requirements are not met	Current military/defense technical standards proves difficult to align and thus the necessary standardization and harmonization does not materialize	L	M
	Difficulties in coordination	Initiative assumes a common future purchasing and operation of "other ATM systems". It might be might be difficult to coordinate the requirement and replacement of "other ATM systems" within two separate organizations.	M	M
Footnotes	1) The category 'other ATM systems' contains among others the following systems: The MAESTRO (Arrival Management System), internal TV systems for distributing MET information and flight data from TWR to APP as well as systems for distribution of correct time in ATC 2) The assumption is based on interviews with relevant experts from LFV/ANS and Naviair 3) For the estimate of annual operation costs in Naviair se footnote 3 in Initiative 12 A 4) For the estimate of investment costs in Naviair se footnote 4 in Initiative 12 A 5) For the estimate of annual operation costs in LFV/ANS se footnote 5 in Initiative 12 A 6) For the estimate of investment costs in LFV/ANS se footnote 6 in Initiative 12 A 7) The total operations costs for 'other ATM systems' in Naviair and LFV/ANS are based on following calculation: € 965,000 + € 1,560,000~ approx **€ 2,530,000** 8) The total investments costs for 'other ATM systems' in Naviair and LFV/ANS are based on following calculation: € 18,100,000 + €18,820,000 = **€36,920,000** 9) LFV/ANS and Naviair have just replaced the majority of the systems in the category 'other ATM systems' , and it is therefore assumed that systems in this category may be replaced at once, when the lifecycle of the systems is complete		

13C) Common use of existing surveillance infrastructure in Denmark and Sweden	
Description/ rationale	Common use of existing surveillance infrastructure in Denmark and Sweden will reduce the total need for surveillance infrastructure in Denmark and Sweden It has been estimated that a future reduction of 2 radars is possible (i.e. the radars will be phased out when their life cycle has ended). This creates cost reductions on: • Avoidable investment cost (the purchase of two radars) • Operating costs[1,3] on two radar units • Cost reduction related to FTE is treated separately in Initiative 4) System maintenance – technical staff functions
Preconditions/ assumptions	The initiative is based on the following preconditions: • Unexploited capacity on radar coverage in the Oresund area. Analyses show that quadruple coverage exist in the following two radar groups: Kastrup/Ängelholm and Roskilde/Romele[1,2] • NUAC will continue to meet their requirement for double coverage even though a radar is shut down in each of the two groups with quadruple coverage[1,2] • Cross-national cooperation concerning joint use of radars • Gradual standardization and harmonization of system platforms • Harmonization of regulative matters regarding technical standards in CNS systems and infrastructure • Expected average life cycle for radars: 12 years[1] • The total numbers of radar units in Denmark and Sweden is 17[1] (DK 5 radars, SE: 12 radars) The estimates of the initiative are based on the following arguments: • Positive cross-national cooperation experience exists regarding the joint use of surveillance infrastructure in the Nordic Countries. Naviair is cooperating with Norway regarding radar coverage in Northern Jutland, which has made it possible to reduce radar capacity in the area[1,2] • A significant unexploited potential exists as the two organizations presently do not have cooperation on radar operation in the Oresund region[1] • An analysis of the radar coverage in Oresund area indicates that NUAC will have double coverage even though a radar is shut down in Kastrup/Ängelholm and Roskilde/Romele[1,2] • The study “The impact of fragmentation in European ATM/CNS” indicates a huge potential for cost reductions by common purchasing and operations of CNS infrastructure. The study confirms the existing of fragmentation costs (fragmentation costs arise through smaller than optimal operational ANSP units) e.g. over-provision of secondary radar • The initiative is not affected by the organizational set-up described in the Alliance Scenario. This assumption seems plausible according to the existing cooperating regarding radar coverage in Northern Jutland between Naviair and Avinor
Baseline	Naviair • Annual operating costs: approx. DKK 4,00,000[4] ~ € 540,000 LFV/ANS • Annual operating costs: approx. SEK 13,900,000[4]~ € 1,500,000

Costs	None
Cost savings	The initiative brings the following cost reductions: • **Cost reductions on annual operating costs**: approx. € 2,040,000[5] * 12%[6]= approx. € 245,000 • **Avoidable investment cost**: approx. € 6,700,000 Preconditions of the calculation: • It is assumed that the full effect of the initiative will be redeemed in 12 years, i.e. in year 2018, corresponding to a situation where the existing surveillance infrastructure has completed its life cycle and therefore presumably may be phased out • Calculation of cost reductions: – The total estimated cost reductions on operation are found by calculating the operation costs for the two radar units – The estimated cost reductions on investment of the three radars are calculated at approx. DKK 50m corresponding to 1 MSSR radars as well as a primary radar[1] – The calculations must be validated in a detailed analysis of the existing specific surveillance infrastructure • Redemption of cost reductions: It is assumed that the cost reductions of the initiative will be redeemed with 1/12 every year from today and 12 years ahead. Specifically: – The cost reductions on operation will be redeemed with 8,33% each year – i.e. 8,33% of the cost reductions on operation in 2008, 16,66% of the cost reductions on operation in 2009 etc. – The cost reductions on investment will be redeemed by 1/12 each year from 2008 through 2020 – It is assumed that the cost reduction on investment is a one-off reduction whereas the cost reductions on operation will continue each year
Total financial impact	See above
Expected start	

Implementation risks

Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
Excess radar capacity not correctly estimated	Initiative assumes that there is significant excess radar capacity, which allows for the reduction of two of the current radars in the Oresund area. There is a risk that this excess capacity has not been estimated correctly and thus the reduction in avoidable investment costs and running cost can not be realized	L	H
Objections from national military authorities	Swedish and Danish military authorities will not accept a reduction in the current radar capacity	L	H
No military acceptance of alignment of surveillance infrastructure	Objections from the Danish and Swedish military authorities on aligning the surveillance infrastructure in terms of deployment of identical radar platforms	L	H

	Technical alignment proves more difficult than estimated	Initiative assumes that the technical alignment of the current systems can be undertaken relatively easily. However a risk exists that this proves more difficult to achieve than estimated	L	H
Footnotes	1) Based on interviews with relevant experts from LFV/ANS and Naviair 2) Based on analyses of the Radar coverage in Oresund Region 3) The annual operation costs cover electricity, replacement parts, etc. 4) Based on budget 2006 for Naviair and LFV/ANS and interviews with experts from the two organizations 5) The total operation cost of surveillance in Naviair and LFV/ANS is € 541,000 + € 1,500,000 = € **2,040,000** 6) **12%** of the existing radar units will be shut down corresponding to 2 out of the present 17 radars			

14C) Common future purchasing and operation of standard CNS systems and infrastructure	
Description/ rationale	Common future purchasing and operation of standard CNS systems and infrastructure[1] (i.e. infrastructure/systems will be replaced when their life cycle is complete) The initiative will bring cost reductions in relation to the present situation in the following two areas: • **Common purchasing of identical CNS systems and infrastructure** will create estimated cost reductions on purchasing of 10% in relation to the present scenario, where organizations purchase CNS infrastructure and systems separately. The cost reductions are accomplished through: – Improved bargaining power – Reduced adjustments costs (i.e. expenses for external project management, requirements, development, testing etc) – Reduced implementation costs (i.e. expenses for external training etc) • **Common operation of other CNS systems and infrastructure** will create estimated cost reductions on operation of 5% in relation to the present scenario, where the organizations purchase operation infrastructure and systems separately. The savings are accomplished through: – Improved agreements (external consultants) – Maintenance costs (expenses for licenses, upgrades, hardware replacements, external consulting services for operation, support, maintenance, upgrades etc.)
Preconditions/ assumptions	The initiatives are based on the following preconditions: • Gradual standardization and harmonization of system platforms • Harmonization of regulative matters regarding technical standards of the CNS systems and infrastructure • The level of CNS infrastructure in Denmark and Sweden will remain unchanged[2] • CNS' average life cycle: 12 years[3] The estimates of the initiatives are based on the following arguments: • Experience from the COOPANS cooperation indicates considerable cost reductions related to joint cross-national purchase. The comparison must be taken with reservations as the CNS infrastructure and systems have fewer adjustment and implementation costs[2] • The study "The impact of fragmentation in European ATM/CNS" indicates a huge potential for cost reductions by common purchases and operations of 'other ATM systems' . The study confirms the existence of fragmentation costs related to purchasing and operation of CNS infrastructure/systems in Europe (fragmentation costs arise through smaller than optimal operational ANSP units in Europe) e.g. cost of piece-meal procurement, fragmented maintenance and development operations and fragmented planning and investment appraisal • Experience shows that large service providers see considerably lower purchase prices than those of smaller service providers. This is supported by the fact that Naviair also obtains quantity discounts with larger purchases[2] • An unexploited potential exists as the two organizations presently do not have cooperation on purchasing or operation in this area[2] • PA's experience from comparable industries confirms that organizations will typically obtain considerable cost reductions by common purchasing of complex systems. It must be stressed that no actual studies of the benefits by a merger of other CNS systems exist – partly as a consequence of little consolidation experience

	• The estimated cost reductions are based on the implications of the organizational set-up described in the Alliance scenario. More specifically: – The existence of two separate organizations (and cost bases) – as described in the Alliance scenario – is assumed to have a negative impact on potential savings related to common future purchasing of standard CNS systems/infrastructure – e.g. it would be difficult to coordinate the requirement and replacement of systems within two separate organizations. In addition, alignment and timing of governmental appropriations will have an impact on the feasibility of synchronizing the replacement of CNS systems/infrastructure in Denmark and Sweden – Two separate organizations are assumed to have a negative impact on potential savings related to common future operation of CNS systems/infrastructure, due to different sets of procedures and processes as well as the existence of inevitable duplicate activities The initiative has not illustrated the following: • The possibility of merging existing systems • The possibility of reducing the number of CNS infrastructure/systems Cost reduction related to FTE is treated separately in Initiative 4C) System maintenance – technical staff functions
Baseline	Naviair • CNS' 12-year investment budget: DKK 289,500,000 [4] ~ € 38,800,000 • CNS' annual operating costs: DKK 9,120,000[5] ~ € 1,220,000 LFV/ANS • CNS' 12-year investment budget: SEK 225,000,000[6] ~ € 24,200,000 • CNS' annual operating costs: SEK 42,610,000[7] ~ € 4,580,000
Costs	None
Cost savings	The initiative brings the following cost reductions: • The total 12-year investment budget for CNS in LFV/ANS and Naviair is based on following calculation: € 38,80,000 + € 24,200,000 = € 63,000,000 • **Avoidable investment costs**: € 63,000,000* 10% cost reduction = € 6,300,000 • The total annual operation costs for CNS in LFV/ANS and Naviair is based on following calculation: € 1,220,000 + € 4,580,000 = € 5,800,000 • **Cost reductions on annual operation costs:** € 5,800,000 * 5% cost reduction = € 290,000 Preconditions for the calculations: • Redemption of cost reductions: It is assumed that the full effect of the initiative will be redeemed in 12-years' time corresponding to a scenario where the existing CNS infrastructure has completed its life cycle and therefore presumably will be replaced – The cost reductions on operation will be redeemed with an accumulated 8,33% each year – i.e. 8,33% of the cost reductions on operation in 2008, 16,66% of the cost reductions on operation in 2009 etc. – Cost reductions on investment will be redeemed with 1/12 each year from 2008 through 2020 – It is assumed that the cost reductions on investment are a one-off reduction whereas the cost reductions on operation will continue each year

Total financial impact	See above			
Expected start	1 January 2008, the entire benefit will be implemented in 12 years			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Standardization and harmonization between Sweden and Denmark	Initiative assumes a certain alignment of the current national technical requirements in regards to the systems (some non alignment between LFV and SLV exist). There is a risk that it proves difficult or impossible to achieve this alignment and thus benefits will not be achieved	L	M
	Technical alignment proves more difficult than estimated	Initiative assumes that the technical alignment of the current systems can be undertaken relatively easily. However a risk exists that this proves more difficult to achieve than estimated	M	M
	National military requirements are not met	Current military/defense technical standards proves difficult to align and thus the necessary standardization and harmonization does not materialize	L	M
	Difficulties in coordination	Initiative assumes a common future purchasing and operation of "other ATM systems". It might be might be difficult to coordinate the requirement and replacement of "other ATM systems" within two separate organizations.	M	M
Footnotes	1) For a definition se chapter 8 “glossary” in Final Report 2) Assumption is based on interviews with relevant experts from LFV/ANS and Naviair 3) It is assumed that the CNS systems and infrastructure have an average life cycle of 12 years based on interviews with experts from LFV/ANS and Naviair 4) For the estimate of Naviair’s investment budget se footnote 4 in Initiative 14A 5) For the estimate of Naviairs annual operation cost se footnote 5 in Initiative 14 A 6) For the estimate of LFV/ANS’s investment budget se footnote 6 in Initiative 14A 7) For the estimate of LFV/ANS’s annual operation cost se footnote 7 in Initiative 14 A			

15C) Optimal use of existing basic and unit training simulators	
Description/ rationale	An optimal joint use of the existing basic and unit training simulators in Denmark and Sweden. The initiative consist of the following two partial initiatives: • Closure of the basic training simulator in Copenhagen (i.e. the RADSIM simulator). Basic training is carried out at Entry Point North in Sweden • Integration of basic and unit training in one simulator in Malmö (the BEST simulator). This will partly be realized by replacing the existing SMART simulator, and partly by phasing out the existing Bert simulator (which alone covers basic training) or replacing this with a standard product. The expansion of the BEST simulator in Malmö will happen naturally in connection with the planned upgrade of the simulator in regards to COOPANS. The establishment of NUAC will enforce harmonization and closer and more formalized cooperation in the ATM training area. This will result in improved coordination and better use of simulator capacity. The initiative will bring cost reductions of the technical operating costs corresponding to the operation of the SMART Simulator and the RADSIM simulator. The implications of the initiative related to FTE will be treated separately in Initiative 2) Optimization and re-design of general administrative staff functions
Preconditions/ assumptions	The initiative is based on the following preconditions: • Considerable over-capacity of basic training simulation in the present set-up with two separate basic training simulators in Denmark and Sweden[1] • RADSIM (in the current setup) will not be able to handle basic and unit training when COOPANS is implemented • It is assumed that an expansion of the BEST simulator in Malmö will be able to meet the requirements for basic training in Denmark and Sweden[1] • It is possible to expand the BEST simulator in Malmö to cover basic and unit training with a presumably limited investment in connection with the planned DATMAS upgrade[1] • The DATMAS and EUROCAT trainers in Naviair and LFV/ANS will remain functional as today. • It is possible to establish constructive cross-national cooperation concerning the operation of the simulators[1] • There is no geographical limitations for where ATM training must be carried out • The requirement for basic training simulator capacity will not increase. This is partly confirmed in interviews with experts within the field and partly in the planned rationalizations within the air controller area in connection with NUAC.[1] Currently there is a high request for basic education of ATCOs in Naviair and LFV/ANS, due to a temporary high demand, this is assumed to be leveled out when NUAC is established and also as a consequence of NUAC there will be a need for fewer ATCOs, therefore the simulator capacity for basic, unit and contingency training of ATCOs is assumed to be assured • 3D and TWR simulators are not affected since these are assumed to remain in the retained organisations • The initiative is not affected by the organizational set-up described in the Alliance scenario. This assumption seems plausible according to the existence of the constructive cross-national cooperation concerning operation of Entry Point North

Baseline	DK: • Annual technical operating costs of RADSIM: DKK 1,000,000[2] ~ € 134,000 SE: • Annual technical operating costs of the SMART simulator: SEK 1,000,000[3] ~ € 107,000
Costs	Investment costs exist in connection with the expansion of the BEST Simulator in Malmö to cover basic and unit training. These costs are not included in the business case as it is assumed that the investment corresponds to the necessary upgrade of the existing SMART and RADSIM simulators in case the initiative is not implemented

Cost savings	The initiative will bring the following cost savings: • Cost reductions on **annual operation** costs: € 134,000 + € 107,000 = € 241,000 Preconditions of the calculation: • The proposal is based on the shutdown of the SMART and RADSIM simulators: • Operating costs for the SMART simulator in Sweden are included • Operating costs for the RADSIM simulator in Naviair • It is necessary to make a detailed analysis of the specific simulators as well as the future need for simulator capacity in order to be able to finally decide which simulators should be shut down • Costs for the Bert simulator in Sweden is not included • Costs for the DATMAS trainers are not included • Costs for 3D and TWR simulators are not included since these are assumed to remain in the retained organisations The initiative has not illustrated the following: • Cost reductions on future investments have not been included • The possibility of improving unit training by conducting training at one location instead of the present situation where training takes place at three different locations • The costs of expanding the BEST simulator to cover both basic and unit training, see the rational above in the "cost" section.
Total financial impact	See above
Expected start	The initiative may be implemented 1 January 2011 in connection with implementation of the COOPANS related systems

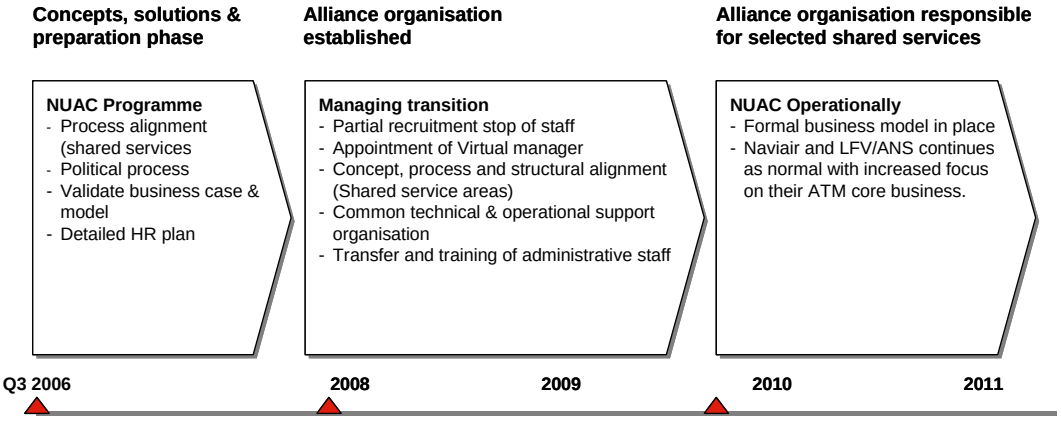
Implementation risks

Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
Simulator Capacity	Demand for simulator capacity will increase and exceed capacity after the shutdown of the RADSIM and SMART simulators	L	M
Certification	Potential differences in regards to certification and designation may exist relating to the use of the current simulators and the associated training, which may create further complexity in ensuring the integration.	L	M
Integration costs not accurately estimated	Initiative assumes that the costs associated with the expansion of the Malmö BEST simulator corresponds to the necessary upgrade of the existing RADSIM and SMART simulators. Thus no investment costs are assumed. Risk that the costs associated exceed the upgrade of the SMART and RADSIM simulators.	L	M

Footnotes

1) Based on interviews with experts from LFV/ANS and Naviair
2) The technical operating costs must be taken with reservations. The estimate is based on interviews with experts from Naviair
3) The technical operating costs must be taken with reservations. The estimate is based on interviews with experts from LFV/ANS

16C) Reduction in General Overhead Costs				
Description/ rationale	Cost savings not directly related to payrolls or operation costs, but highly dependant on the number of staff. This overhead costs initiative is an effect of the FTE reduction initiatives in 1C-9C Overhead costs are defined as: • Recruitment and training costs per employee • Administrative IT costs (HW, software licenses, help desk etc.) per employee • Office costs (furniture, office supplies etc) per employee • Building related costs (maintenance, rental etc.)			
Preconditions/ assumptions	Assumptions • It is assumed – based on PA's best practice from comparable industries – that 80% of the general overhead costs are variable with the number of staff • The initiative is based on an average overhead cost per employee (no differentiation between staff functions)			
Baseline	LFV/ANS • Variable overhead cost per employee SEK 112,000[1] ~ € 12,043 Naviair • Variable overhead cost per employee DKK 96,000[2] ~ € 12,869 Average overhead cost per employee • Variable overhead cost per employee = € 12,378[3]			
Costs	Not relevant			
Cost savings	Annual cost savings related to general overhead costs: • 104 (staff reduction) * €12,378 (average variable overhead cost per employee) = **€ 1,287,000**			
Total financial impact	None			
Expected start	The initiative will have financial impact as of 1 January 2011			
Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	No risks identified		N/A	N/A
Footnotes	1) Se footnote 1 in Initiative 16A 2) Se footnote 2 in Initiative 16A 3) Se footnote 3 in Initiative 16 A			

17C) Project implementation (one time cost for all initiatives)	
Description/ rationale	Program implementation requires a number of fixed and variable costs (establishment costs for Alliance Company, Internal FTE, Consulting & Legal services, etc.) to ensure successful transformation. These costs cover all support during the entire integration period. After the definition phase comes the following phases: 
Preconditions/ assumptions	Assumptions: 1) Integration costs cover all internal and external costs associated with implementing the NUAC Programme. Integration costs are comprised by 3 main areas: A) Costs associated with implementing the selected integration initiatives – benefit delivery areas B) Costs associated with establishing concepts/prerequisites/solutions/procedures for the new NUAC company – pre-requisite areas C) Cost associated with managing the NUAC Programme – direction and support areas. Within these three areas, costs will cover all implementation activities: e.g. planning, redesigning processes/structures/systems, IT/technology upgrades, integration execution, business consulting, change management, training and competence development, voluntary compensation package pool, preparation of sourcing and supplier management etc. - Integration costs will not contain costs for compensation to Senior Management and Management staff, as costs for compensation to these individuals are covered directly in the respective initiatives as negative benefits - Total integration costs will be described and allocated into A) establishment costs for joint limited company, B1) Internal FTE, - B2) cost for Consulting & Legal services, C) costs for IT/software upgrades, D) Training, competence development and other attrition aiming activities, - and E) Preparation of sourcing (Technical maintenance & administrative IT/ERP) 2) Average internal FTE cost annually = € 64,000 based on the average total annual wage (lønsum) for Danish employees 3) Average Consulting & legal FTE cost annually remains at approx. same level as in the definition phase = € 405,000 based on (249 working days of 8 hours at an average fee on DKK 1,500) 4) Estimated integration period for Alliance scenario is approx 30 months to implement –

	See integration roadmaps for details for each scenario 5) Integration scope will comprise 3 work streams + program management (merger scenario) with each approx. 6-8 FTE (4-6 internal FTE + 1-2 external FTE)
Baseline	Not relevant
Costs	Breakdown of implementation costs: **1. Establishment costs for joint limited company (1A) = € 799.500. Cost for legal services, preparation and establishment of new legal entity, legal advice etc.** - 1A) Legal services - Internally (1 FTE * 3 years * € 64,000) + Externally (½ FTE * 3 years * € 405,000) = € 799,000 **2. Implementation costs - Personnel (internal FTE and external FTE/advisors) (the sum of 2A-2D) = € 6,972,000. Cost for process, procedures and organization structural alignment and optimization, change and integration management, benefit management, , development of HR (retrenchment) plan etc.** - 2A) Program management – Internally (2 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000) = € 1,599,000 - 2B) Concepts & solutions - Internally (3 FTE * 1 year * € 64,000) + Externally (3 FTE * 1 year * € 405,000) = € 1,407,000 - 2C) Corporate – Internally (4 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000 euro) = € 1,983,000 - 2D) Technical – Internally (4 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000) = € 1,983,000 **3) Implementation costs – IT upgrades/technology (hardware/software) = € 4m – Cost for system alignment and optimization, system hardware and software upgrades, ATM system integration, administrative IT/ERP alignment etc.** - 3A) Operative system integration (ATM, CNS, etc) = € 3m - 3B) Other/remaining administrative IT upgrade (common platforms, etc) = € 1m **4) Training, competence development and other attrition aiming activities = € 4m – Cost for integration related training, competence development in relation to new job descriptions and/or new job roles and technical content, voluntary retrenchment package pool to be used if necessary** 5) **Preparation and implementation of sourcing (ATM system development & Technical maintenance and supervision) = € 1½m. Cost for preparing the planned sourcing, preparation of tender materials, supplier management and selection etc. Sourcing technical maintenance and systems supervision – Legal and business consulting advise** **Sum – Total implementation costs (1 + 2 + 3 + 4 + 5) = € 17,271,500**
Cost savings	
Total financial impact	
Expected start	Start date: August 2006 – medio 2009, implementation: 30 months (NUAC Programme & NUAC Programme) (See NUAC Alliance roadmap for integration)

Implementation risks	Risk Title	Description	Probability (L-M-H)	Impact (L-M-H)
	Momentum and experience	May be difficult to mobilize resources to an efficient integration team knowing all definition phase details	M	H
Footnotes				