NUAC Programme

Definition Phase Supplementary Report

Appendix 15

Business Case

August 2007

NUAC Programme

Supplementary Report Appendix 15: Business Case

Contents

Introduction

Introduction

- This document contains additional analysis to the findings conducted during the NUAC Definition Phase – presented in the Final Report (and Appendices 1, 2 & 3).
- More specifically, the document contains two additional analysis areas:
  - An extension of the business case to include the refined Merger scenario and the new Operational Alliance scenario, which has been formulated on the basis of the findings in NUAC Definition Phase as well as inspiration from the stakeholder responses. The subject and methodology of the Business Case is described in Final Report. Unless otherwise stated, assumptions from the Final Report apply. Specific assumptions for the Merger and Operational Alliance scenarios are stated in their respective sections
  - An additional assessment of new potential benefit areas by formalised cooperation between LFV/ANS and Naviair
- The Alliance scenario remains as described in the NUAC Definition Phase Final Report

Reader's guidelines

- This document contains four different sections:
  - **The analytical framework** – a description of the purpose and scope including a definition of the three scenarios
  - **Conclusion** – the high-level findings
  - **Business Case evaluation** – the evaluation of the supplementary scenarios
  - **Additional benefit analysis** – the identified new potential benefit areas

Contents

Analytical framework

Purpose and scope

Purpose

- To display financial implications and potentials from the supplementary scenarios on NUAC Company
- To analyse the potential synergy in a stronger cooperation within specific functional areas
- To identify new benefit areas by formalised cooperation between Naviair and LFV/ANS

Scope and approach

- Validation of the 17 already identified benefit realisation areas – the initiatives – and possibly new benefit area
- The Business Case is based on the cost model applied in the Definition Phase Final Report – Appendix 1

Outcome

- New potential benefit areas by formalised cooperation
- Description of Business Case for the supplementary scenarios

Analytical framework

Scenario definitions: Merger, Alliance and Operational Alliance

	Merger scenario	Alliance scenario	Operational Alliance scenario
Description	• Merger of relevant parts of the two organisations LFV/ANS and Naviair into one organisation • NUAC is responsible for carrying out the Air Traffic Service provision within Danish and Swedish airspace and working in a FAB environment with possibility of one en-route charging zone and a common unit rate • Drive the cost base down through innovative approaches to organisational structure and resource allocation	• As independent organisations in a closer cooperation LFV/ANS and Naviair are establishing a co-owned Alliance Company for the carrying out of certain support functions. This with only minor changes to the operational parts of the two organisations working in a FAB environment with possibility of one en-route charging zone and a common unit rate	• LFV/ANS and Naviair as co-owners of a NUAC Company carrying out the provision of Air Navigation Services within Danish and Swedish fully integrated airspace • The services cover all Air Navigation Services except MET, AIS and TWR • Support functions will be provided in NUAC Company in accordance with Common Requirements and when necessary to reach the full potential of the operational core business
Rationales	• To investigate the feasibility and effects of the most comprehensive Scenario for cooperation in order to ensure highest possible degree of cost-effectiveness/cost reduction and strategic alignment with Single European Sky regulations as well as the national strategies • To show clear and formalised lines of command in a merged company and entail management of all core processes and related support processes	• The Scenario should to the largest possible extent be in alignment with Single European Sky regulations and the national strategic directions outlined in Denmark and Sweden • Find out to what extent the cost-effectiveness could be reached without influencing the core business within LFV/ANS and Naviair • To give the answer regarding to what extent the Strategic Rationales for the NUAC Programme could be met	• To investigate the feasibility and effects of a scenario with focus on cost effectiveness and national corporate strategies without compromising SES and national strategic directions • To investigate to what extent the cost-effectiveness/cost reductions could be reached when only including the core business in the NUAC Alliance Company

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Conclusion

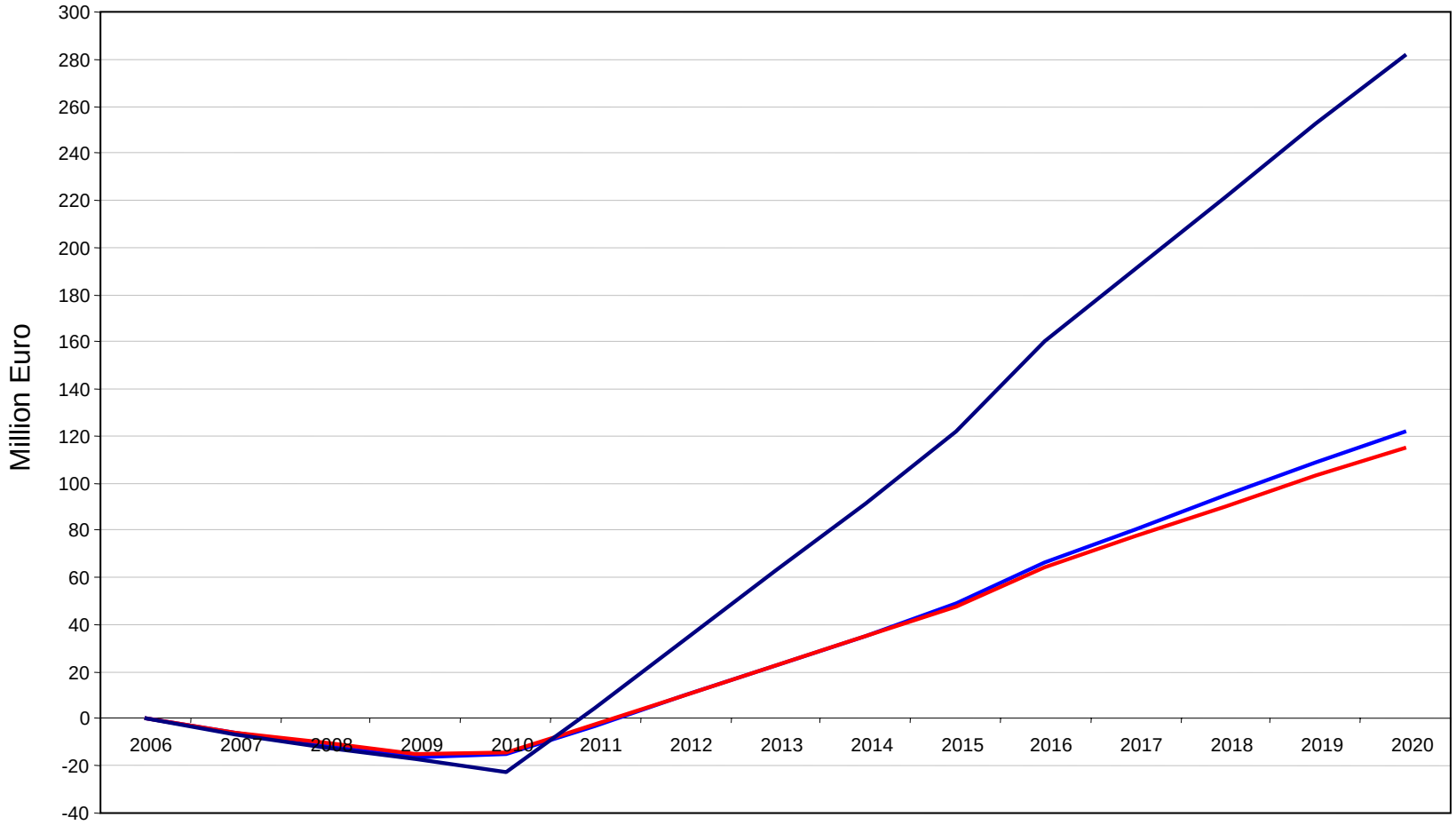
Business Case summary

- The Merger scenario reveals the best financial results and also the largest reduction in FTEs
- The difference in NPV between the Alliance scenario and the Operational Alliance scenario is due to the fact that the implementation costs are larger in the Operational Alliance scenario
- The reason for the annual savings being almost the same in the Alliance scenarios while the FTEs differ is that the annual savings in the Alliance scenario include savings from sourcing maintenance and development personnel

	Merger	Operational Alliance	Alliance
FTE reduction	233 FTE	129 FTE	104 FTE
FTE sourcing	162 FTE	–	144 FTE
Annual savings	€ 29.5 million	€ 13.0 million	€ 12.0 million
Total integration costs	€ 30.1 million	€ 18.4 million	€ 17.3 million
NPV	€ 172.4 million	€ 72.6 million	€ 68.8 million
IRR	55%	39%	40%
Payback years	4 years	3 years	2½ years

Conclusion

Business Case - Cumulative Cash Flow



Merger	0.0	-6.9	-12.2	-17.2	-22.4	4.6	33.6	62.6	91.7	121.9	160.0	190.7	221.5	252.4	281.9
OP Alliance	0.0	-6.1	-11.2	-16.3	-15.1	-2.8	9.8	22.4	35.1	48.9	66.6	80.6	94.6	108.7	121.8
Alliance	0.0	-5.7	-10.4	-15.1	-13.9	-2.6	10.0	22.5	35.1	47.8	64.3	77.2	90.1	103.1	115.0

Business Case

Annual savings

Potential synergy effects for the three scenarios

	Merger	OP Alliance	Alliance
FTE	€ 24.1	€ 10.4	€ 9.8
Technology	€ 2.5	€ 0.9	€ 0.9
Overhead	€ 2.9	€ 1.6	€ 1.3

Initiative	Estimated annual savings in 2020 (million Euros) Merger	OP Alliance	Alliance
01. Optimisation of management functions	0.0	-0.2	-0.2
02. Optimisation of general administrative staff functions	8.7	0.5	0.5
03. Optimisation of systems development functions	3.5	0	3.4
04. Optimisation of systems maintenance functions	1.5	0	0.8
05. Optimisation of procedures functions	4.2	4.0	3.1
06. Optimisation of general operational support functions	1.0	0.9	0
07. Optimisation of briefing officers functions	1.1	1.1	0
08. Closure of two Control Centers in night hours	1.1	1.1	0
09. Optimisation of control positions	3.0	3.0	2.2
10. Common administrative IT platform and applications	0.7	0.1	0.1
11. Sourcing of tele/data communication services	0.4	0	0
12. Purchasing and operation of 'other ATM systems'	0.4	0.1	0.1
13. Common use of existing surveillance infrastructure	0.2	0.2	0.2
14. Purchasing and operation of standard CNS systems	0.6	0.3	0.3
15. Optimal use of basic and unit training simulators	0.2	0.2	0.2
16. Reduction of general overhead costs	2.9	1.6	1.3
17. Project implementation (one time cost for all initiatives)	*30.1*	*18.4*	*17.3*
Total:	**€ 29.5**	**€ 13.0**	**€ 12.0**

Business Case

Compliance with strategic rationales

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

* The political and environmental impact of the scenarios is further analysed in the NUAC Definition Phase Socio-Economics Report

Business Case

Integration costs

Integration cost areas	Merger	Operational Alliance	Alliance
1) Establishment costs setting up the new cooperation	€ 1 million	€ 0.8 million	€ 0.8 million
2) Personnel: • Internal FTE • Costs for consulting & legal services	€ 14.1 million	€ 9.6 million	€ 7.0 million
3) Costs for IT/software upgrades	€ 8.0 million	€ 4.0 million	€ 4.0 million
4) Training, competence development and other attrition aiming activities	€ 5.0 million	€ 4.0 million	€ 4.0 million
5) Preparation of outsourcing (technical maintenance & administrative IT/ERP)	€ 2.0 million	Not applicable since potential outsourcing is handled in retained organisations	€ 1.5 million
Total integration costs	**€30.1 million**	**€18.4 million**	**€17.3 million**
Total integration costs adjusted for uncertainty	**€30 – 35 million**	**€15 – 20 million**	**€15 – 18 million**

Contents

Business Case – Assumptions

Operational Alliance scenario

- Assumptions, cost model, and data sources stated in the Business Case sections in NUAC Definition Phase Final Report also apply for the Business Case results for the Operational Alliance scenario in this document
- The primary sources for potential cost savings through reduction in the need for resources are assumed to be realised through focusing on the following aspects:
  - elimination of duplicate functions
  - increased effectiveness
  - optimal size of organisation
- Redundant personnel identified in the initiatives are considered as a source of staff reduction. In general the reduction of staff is expected to be accommodated through natural attrition and general staff turnover
- With constant focus on safety and the core processes related to Air Navigation Services, the NUAC organisation is fully driven by cost-effectiveness
- Necessary support functions will be provided in NUAC Company in accordance with Common Requirements and when necessary to reach the full potential of the operational core business
- Initiatives and benefits related to administrative support functions identified in the analysis of the original scenarios are considered, and relevant benefits are included in the Business Case
- Initiatives and benefits related to operational support are included:
  - Procedures
  - ATM training
  - Duty roster planning
  - Briefing officers
- Initiatives and benefits related to technical support functions (systems development and maintenance) are not considered since these functions will remain within Naviair and LFV/ANS

Business Case – Effects related to FTE

Operational Alliance scenario

The findings of the preliminary Business Case for the Operational Alliance scenario are:

- The annual savings in 2020 are €13.0 million, and the integration costs are €18.4 million
- The savings are realised through optimisation of the operational functions and operational support functions
- The staff implications of implementing the scenario (with regards to the 1213 FTE in scope for NUAC) are: 676 FTE will be employed at the NUAC Company, 408 FTE will be employed in the retained organisations, 129 FTE will be redundant
- All FTE reductions are assumed to be reached through natural attrition (FTEs retiring and reduced through natural attrition assuming 5% staff turnover in Naviair and LFV/ANS gives a total of 253 FTE from 2008 to 2011)

FTE implication of the Operational Alliance scenario

FTE Area			Staff implication	
	Baseline	Retained companies	NUAC Company	Reduction
Admin. support**	271	183	46	42
Tech. Support	211	205	6	0
OP support	130	20	71	39
Operational	601		553	48
TOTAL	**1213***	**408**	**676**	**129**

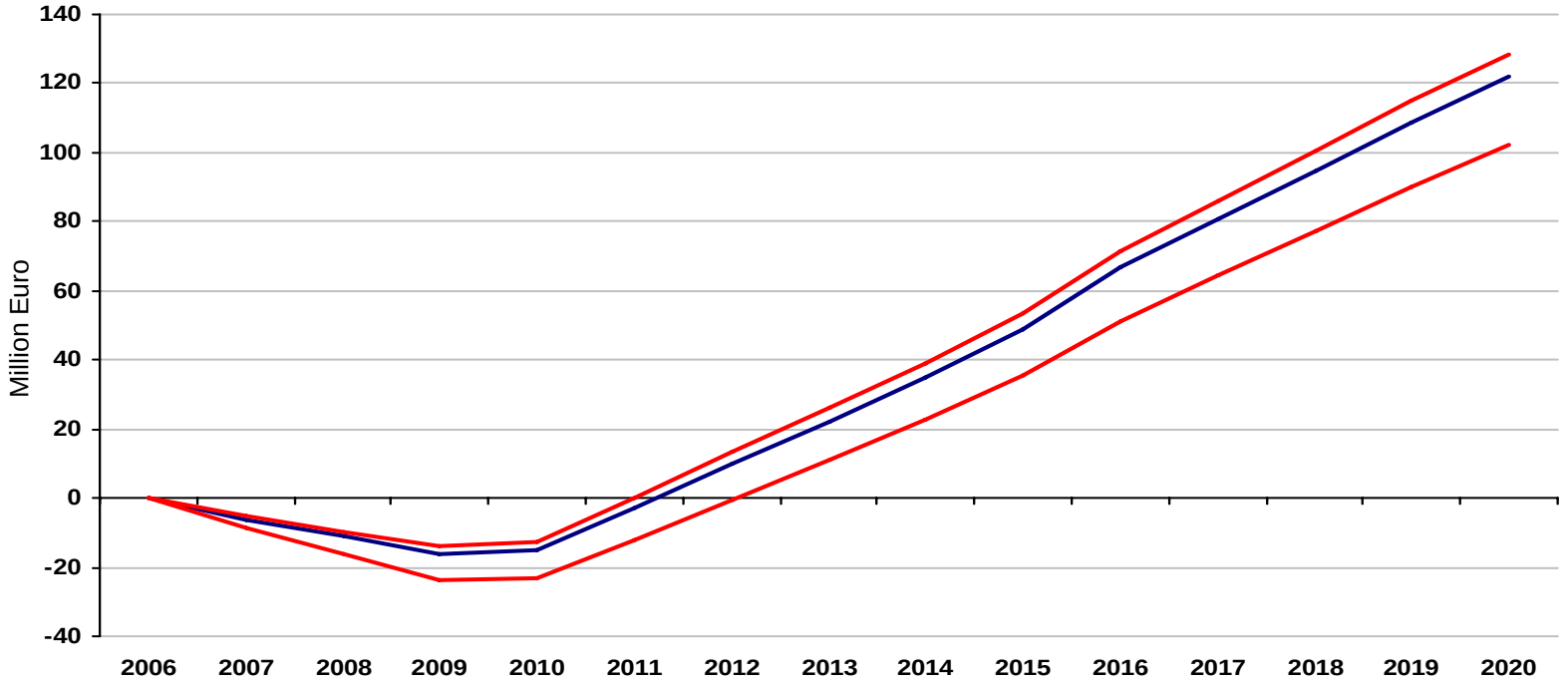
*Baseline includes 721 FTE from LFV/ANS (the following staff is not in scope: TWR-ATCO, APP-ATCO, others leavers, EPN, EPN Tech. Main., ATM Training (Operational Support), Environment) and 492 FTE from Naviair (the following staff is not in scope: TWR/ATWR, domestic employees and ATCO candidates).

**Includes management and secretaries/assistants

Business Case – Cumulative cash flow

Operational Alliance scenario

- The Operational Alliance reaches break-even in 2012. This is based on the fact that costs related to project implementation will occur from 2007 to 2010. Cost savings related to optimisation of staff functions (“FTE”) will occur from 2011, outweighing the severance costs and implementation costs
- The cumulative cash flow also displays the sensitivity caused by the identification of risks associated with the initiatives



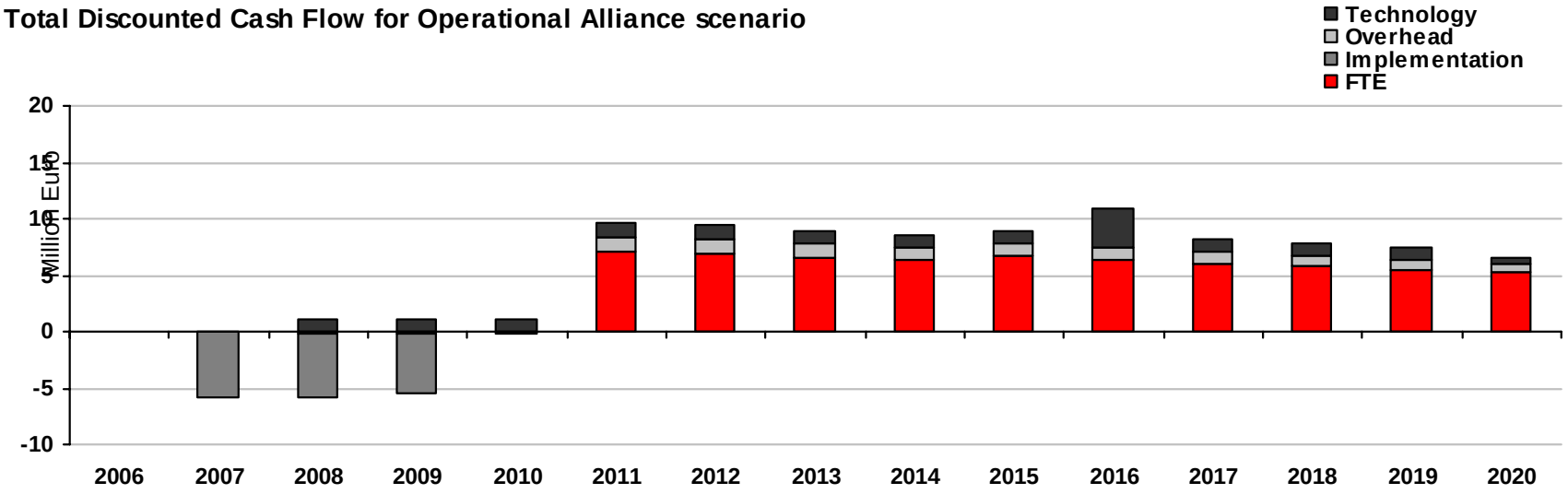
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Max	0.00	-5.28	-9.52	-13.68	-12.48	0.17	13.13	26.14	39.20	53.37	71.53	85.93	100.37	114.86	128.23
Average	0.00	-6.09	-11.22	-16.26	-15.12	-2.84	9.76	22.40	35.09	48.89	66.56	80.57	94.64	108.74	121.77
Min	0.00	-8.55	-16.31	-23.99	-23.04	-11.90	-0.43	11.07	22.62	35.28	51.41	64.27	77.16	90.09	102.05

Business Case – Discounted Cash flow

Operational Alliance scenario

- The figure displays project implementation occurring from 2007 to 2010 as well as cost savings related to FTE, technology, and overhead occurring from 2011. It also displays hiring of alliance manager for NUAC in 2008
- As indicated in the figure, an increase in cost savings related to systems and technology ("Technology") occurs in 2016. These additional cost savings relate to avoidable investment costs related to 'other ATM systems'

Total Discounted Cash Flow for Operational Alliance scenario



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
€ million	0.00	-5.80	-4.65	-4.35	0.94	9.62	9.40	8.99	8.59	8.90	10.84	8.20	7.83	7.48	6.58

Business Case

Operational Alliance scenario – Initiatives*

Initiative	Area	Description	Assumptions	Financial impact
1	FTE	Optimisation of management positions	▪ Reduction of 1 FTE and additional hiring of 1 CEO and 1 senior manager for NUAC	€ -196,500
2	FTE	Redesign of administration functions	▪ Staff reduction of 7 FTE working within ATM Training	€ 472,500
3	FTE	Redesign of technical staff functions – ATM system development	▪ Business area is out of scope	€ 0
4	FTE	Redesign of technical staff functions – system maintenance	▪ Business area is out of scope	€ 0
5	FTE	Redesign of operational support functions – procedures	▪ Staff reduction of 44 FTE in Procedures	€ 3,987,500
6	FTE	Redesign of operational support functions – roster planning	▪ Staff reduction of 13 FTE in Roster planning and other OP support staff	€ 885,500
7	FTE	Redesign of operational functions – briefing officers	▪ Establishment of one common briefing officer function (located in Denmark or Sweden) ▪ Staff reduction: 18 FTE	€ 1,140,500
8	FTE	Redesign of operational functions – night hours	▪ Closure of two ATCC during night hours ▪ Staff reduction: 13 FTE	€ 1,070,000
9	FTE	Redesign of operational functions – control positions	▪ Optimisation of control position based on the analysis made by Airspace Design work group ▪ Staff reduction: 35 FTE	€ 3,045,000
10	Technology	Common procurement of administrative IT	▪ Common procurement of administrative IT ▪ Because of retained organisations, common maintenance of administrative IT is not possible	€ 120,000
11	Technology	Common sourcing of tele/data communication	▪ Business area is out of scope in this scenario	€ 0
12	Technology	Common purchasing and operation of 'other ATM systems'	▪ Common future purchasing of 'other ATM systems' (improved bargain power, adjustment costs etc) ▪ Common future operation of 'other ATM systems' (improved framework agreement, licenses etc)	€ 126,500
13	Technology	Common use of existing surveillance infrastructure	▪ Due to overcapacity of radar coverage, two existing radar units can be closed down	€ 245,000
14	Technology	Common purchasing and operation of CNS systems/infrastructure	▪ Common future purchasing of CNS systems (improved bargain power, adjustment costs etc) ▪ Common future operation of CNS systems (improved framework agreement, licenses etc)	€ 290,000
15	Technology	Optimal use of basic and unit training simulators	▪ Shutdown of CATCAS and SMART simulator	€ 241,000
16	Overhead	Reduction in general overhead cost	▪Total staff reduction 129 FTE ▪ Average yearly variable overhead cost per employee = € 12.383	€ 1,597,000
17	IS Costs	Project implementation cost	▪ Total implementation costs of € 18.4 million.	-
Total				€ 13,024,000

* The Business Case for the Operational Alliance is based on the initiatives described in Appendix 2 (which contains rationale, design, baseline etc for each initiative). The column "Assumptions" in the table above shows if the initiative is included in the scenario and if relevant the specific assumptions for the scenario.

Business Case

Operational Alliance scenario – Integration costs

Integration cost areas	Detailed description	Total
1) Establishment costs setting up the new cooperation	▪ **Establishment costs for joint limited company = € 799,000** ▪ **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 (1 FTE * 3 years * 64,000 €) + Externally (½ FTE * 3 years * 405,000 €) = € 799,000	€ 799,000
2) Personnel: • Internal FTE • Cost for consulting & legal services	▪ **Personnel (internal FTE and external FTE/advisors) = € 9,605,500** ▪ **Cost for process, procedures and organisation structural alignment and optimisation, change and integration management, benefit management, preparation of certification and designation, 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 (4 FTE * 1 year * € 64,000) + Externally (3 FTE * 1 year * € 405,000) = € 1,066,000 ▪ 2C) Corporate - Internally (4 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000) = € 1,983,000 ▪ 2D) Operations - Internally (6 FTE * 3 years * € 64,000) + Externally (1½ FTE * 3 years * € 405,000) = € 2,974,500 ▪ 2E) Technical - Internally (4 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000) = € 1,983,000	€ 9,605,500
3) Costs for IT/software upgrades	▪ **IT upgrades/technology (hardware/software) = € 4.000.000** ▪ **Cost for system alignment and optimisation, system hardware and software upgrades, ATM system integration, administrative IT/ERP alignment etc.** ▪ 3A) Operative system integration (ATM, CNS etc.) = € 3,000,000 ▪ 3B) Other/remaining administrative IT upgrade (common platforms, etc) = € 1,000,000	€ 4,000,000
4) Training, competence development and other attrition aiming activities.	▪ **Training, competence development and other attrition aiming activities = € 4,000,000** ▪ **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**	€ 4,000,000
5) Preparation of outsourcing (technical maintenance & administrative IT/ERP)	▪ **Not relevant since potential outsourcing is handled in retained organisations**	
Total integration costs		€ 18,404,500

Contents

Business Case – Assumptions

Merger scenario

- Assumptions, cost model, and data sources stated in the Business Case sections in NUAC Definition Phase Final Report also apply for the Business Case results for the Merger scenario in this document
- The primary sources for potential cost savings through reduction in the need for resources are assumed to be realised through focusing on the following aspects:
  - elimination of duplicate functions
  - increased effectiveness
  - sourcing solutions for non-core processes
  - optimal size of organisation
- Redundant personnel identified in the initiatives are considered as a source of staff reduction. In general the reduction of staff is accommodated through natural attrition and general staff turnover
- With constant focus on safety and the core processes related to Air Navigation Services, the merged organisation is fully driven by cost-effectiveness
- Only the NUAC organisation needs to be certified and designated for area control services in Denmark and Sweden
- NUAC handles area control and approach activities in Denmark and Sweden, including related support functions as defined in the Business Model
- Optimisation of management level in accordance with Business Model
- Managers are assumed to perform and deliver in small units
- Comparisons between ratios for administrative staff and management staff compared to number of total staff in Naviair and LFV/ANS in order to determine the necessary number of admin. staff in NUAC Company
- Outsourcing of support processes when beneficial
- Optimising resource management by developing standards, integration, and control
- Moving investigation to the strategic level to ensure independence of investigators

Business Case – Effects related to FTE

Merger scenario

The findings of the Business Case for the Merger scenario show:

- The annual savings in 2020 are €29.5 million, and the integration costs are €30.1 million
- The savings are realised through elimination of duplicate functions, increased efficiency, and outsourcing
- The staff implications of implementing the scenario (with regards to the 1213 FTE in scope for NUAC) are: 759 FTE will be employed at the NUAC Company, 162 FTE will be outsourced, 233 FTE will be redundant, and 59 FTE will stay in retained organisations
- All FTE reductions are assumed to be reached through natural attrition (FTEs retiring and reduced through natural attrition assuming 5% staff turnover in Naviair and LFV/ANS gives a total of 253 FTE from 2008 to 2011)

FTE implication of the Merger scenario

FTE Area			Staff implication		
	Baseline*	Retained Companies	NUAC Company	Sourcing	Reduction
Admin. support**	271	27	100	35	109
Tech. Support	211	15	35	127	34
OP support	130	17	71		42
Operational	601		553		48
TOTAL	**1213***	**59**	**759**	**162**	**233**

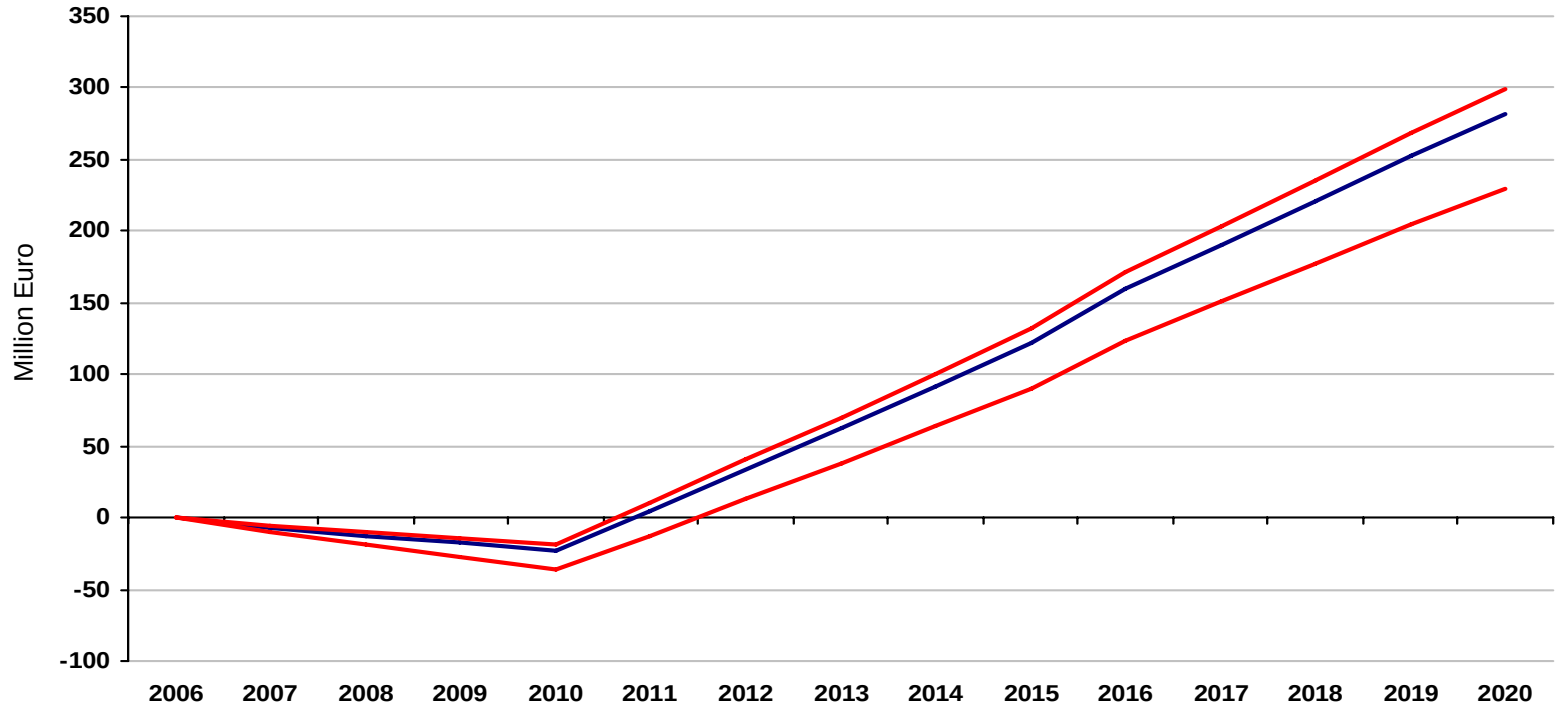
*Baseline includes 721 FTE from LFV/ANS (the following staff is not in scope: TWR-ATCO, APP-ATCO, others leavers, EPN, EPN Tech. Main., ATM Training (Operational Support), Environment) and 492 FTE from Naviair (the following staff is not in scope: TWR/ATWR, domestic employees and ATCO candidates).

**Includes management and secretaries/assistants

Business Case – Cumulative Cash flow

Merger scenario

- The Merger scenario reaches break-even in 2011. This is based on the fact that costs related to project implementation will occur from 2007 to 2011. Cost savings related to optimisation of staff functions (“FTE”) will occur from 2011, outweighing the severance costs and implementation costs
- The cumulative cash flow also displays the sensitivity caused by the identification of risks associated with the initiatives

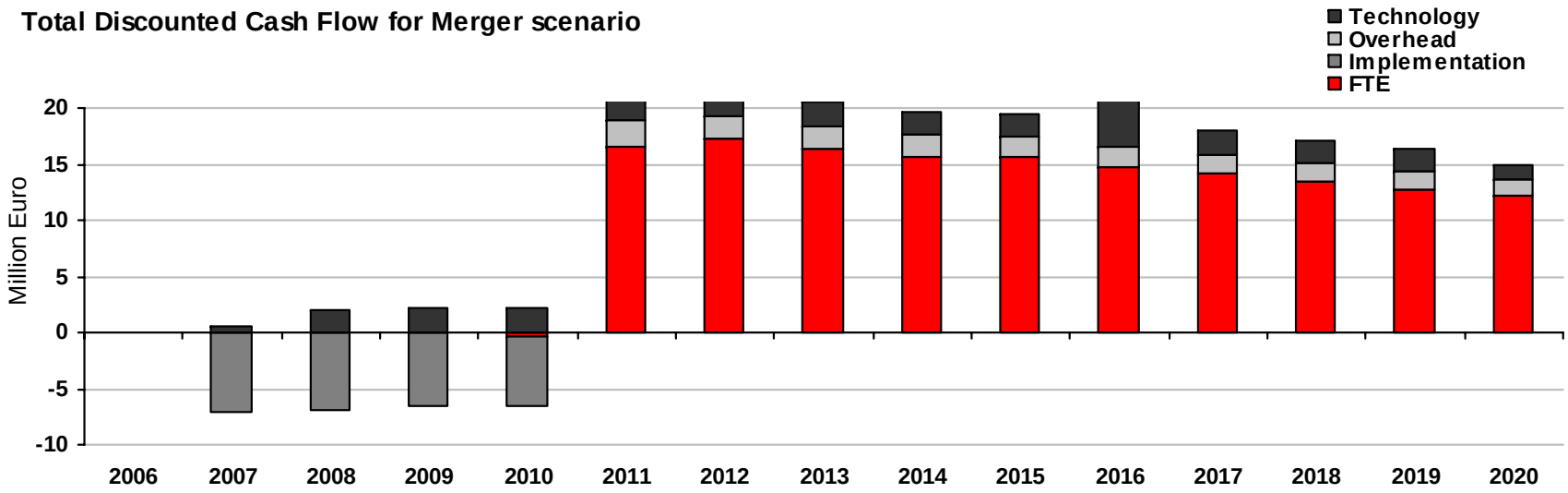


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Max	0.00	-5.90	-10.08	-13.95	-17.96	10.38	40.46	70.61	100.83	132.30	171.93	203.94	236.02	268.17	298.92
Average	0.00	-6.93	-12.21	-17.18	-22.41	4.61	33.56	62.58	91.67	121.90	159.95	190.70	221.51	252.39	281.93
Min	0.00	-10.01	-18.57	-26.86	-35.42	-12.45	13.01	38.53	64.10	90.50	123.72	150.57	177.48	204.45	230.23

Business Case – Discounted Cash flow

Merger scenario

- The figure displays project implementation occurring from 2007 to 2011, and cost savings related to FTE, Technology, and overhead occurring from 2011. It also displays hiring of CEO for NUAC in 2010
- As indicated in the figure, an increase in cost savings related to systems and technology ("Technology") occurs in 2016. These additional cost savings relate to avoidable investment costs related to 'other ATM systems'



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
€ million	0.00	-6.60	-4.79	-4.29	-4.30	21.17	21.60	20.62	19.69	19.48	23.36	17.98	17.16	16.38	14.92

Business Case

Merger scenario – Initiatives (1/2)

Initiative	Area	Description	Assumptions	Financial impact
1	FTE	Optimisation of management positions	▪ Reductions in management staff and additional hiring of 1 Head of NUAC	€ 0

2	FTE	Redesign of administration functions	▪ Additional reduction compared to Definition Phase Final Report – appendix 2:
			  ▪ 2 FTE Senior Manager (NUAC Company will only have one Senior Manager in each business unit)
			  ▪ 3 FTE Manager (NUAC Company has 1 Manager in each separate business area)
			  ▪ 3 FTE Assistant (In NUAC Company only Senior Managers will have assistants)
			  ▪ 2 FTE, PR (NUAC Company has 2 FTE working within communication including Manager - one for each country)
			▪ Additional hiring of 1 FTE, Administrative IT (NUAC Company will have a supervisor with responsibility for the outsourcing of administrative IT)
			▪ No additional hiring of Legal (NUAC Company has 2 FTE working within legal including manager)
				€ 8,664,625

3	FTE	Redesign of technical staff functions – ATM system development	▪ Additional reduction of 1 FTE, Junior Management	€ 3,489,500
4	FTE	Redesign of technical staff functions – system maintenance	▪ Additional reduction of 6 FTE Junior Manager – LFV/ANS and Naviair have the same ratio of management staff – in the current ratio are Naviair 10/85 and LFV/ANS 5/75 ▪ Additional reduction of 1 FTE Assistant ▪ Additional reduction of 3 FTE Facility management – Facility management will be handled centrally	€ 1,462,700
5	FTE	Redesign of operational support functions – procedures	▪ Additional reduction of 2 FTE Junior Management ▪ Additional reduction of 1 FTE, Assistant ▪ Additional reduction of 3 Investigation (NUAC Company will have 2 FTE, Investigation in each branch and 2 FTE, investigation working within Quality & Safety)	€ 4,248,870
6	FTE	Redesign of operational support functions – roster planning	▪ Additional reduction of 2 FTE, Junior Management	€ 1,019,000
7	FTE	Redesign of operational functions – briefing officers	▪ Establishment of one common briefing officer function (located in Denmark or Sweden) ▪ As Merger in Definition Phase Final Report Staff additional reduction: 25 FTE	€ 1,140,500
8	FTE	Redesign of operational functions – night hours	▪ Closure of two ATCC during night hours ▪ As Merger in Definition Phase Final Report - Staff additional reduction: 13 FTE	€ 1,070,000
9	FTE	Redesign of operational functions – control positions	▪ Optimisation of control position based on the analysis made by Airspace Design work group ▪ As Merger in Definition Phase Final Report – additional staff reduction: 35 FTE	€ 3,045,000

Business Case

Merger scenario – Initiatives(2/2)

Initiative	Area	Description	Assumptions	Financial impact
10	Technology	Common procurement of administrative IT	▪ As described in Definition Phase Final Report - appendix 2	€ 714,000
11	Technology	Common sourcing of tele/data communication	▪ As described in Definition Phase Final Report - appendix 2	€ 360,500
12	Technology	Common purchasing and operation of 'other ATM systems'	▪ As described in Definition Phase Final Report - appendix 2	€ 380,000
13	Technology	Common use of existing surveillance infrastructure	▪ As described in Definition Phase Final Report - appendix 2	€ 245,000
14	Technology	Common purchasing and operation of CNS systems/infrastructure	▪ As described in Definition Phase Final Report - appendix 2	€ 580,000
15	Technology	Optimal use of basic and unit training simulators	▪ As described in Definition Phase Final Report - appendix 2	€ 241,000
16	Overhead	Reduction in general overhead cost	▪ Total staff reduction 233 FTE ▪ Average variable overhead cost per employee = 12.383	€ 2,885,239
17	IS Costs	Project implementation cost	▪ Total implementation costs of € 30.1 million ▪ As described in Definition Phase Final Report - appendix 2	
Total				€ 29,545,934

Business Case

Merger scenario – Integration costs

Integration cost areas	Detailed description	Total
1) Establishment costs setting up the new cooperation	▪ **Establishment costs for joint limited company = € 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 * € 64,000) + Externally (½ FTE * 3 years * € 405,000) = € 991,500 ▪ 1B) Cost for founding the Ltd. Company = € 8,000	€ 999,500
2) Personnel: • Internal FTE • Cost for consulting & legal services	▪ **Personnel (internal FTE and external FTE/advisors) (sum of 2A - 2H) = € 14,104,500** ▪ **Cost for process, procedures and organisation structural alignment and optimisation, change and integration management, benefit management, preparation of certification and designation, development of HR (retrenchment) plan etc.** ▪ 2A) Programme management - Internally (2 FTE * 4 years * € 64,000) + Externally (1 FTE * 4 years * € 405,000) = € 2,132,000 ▪ 2B) Concepts & solutions - Internally (4 FTE * 1 year * € 64,000) + Externally (2 FTE * 1 year * € 405,000) = € 1,066,000 ▪ 2C) Corporate - Internally (4 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000) = € 1,983,000 ▪ 2D) Finance & IT - Internally (4 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000) = € 1,983,000 ▪ 2E) HR - Internally (4 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000) = € 1,983,000 ▪ 2F) Operations - Internally (6 FTE * 3 years * € 64,000) + Externally (1½ FTE * 3 years * € 405,000) = € 2,974,500 ▪ 2G) Technical - Internally (4 FTE * 3 years * € 64,000) + Externally (1 FTE * 3 years * € 405,000) = € 1,983,000	€ 14,104,500
3) Costs for IT/software upgrades	▪ **IT upgrades/technology (hardware/software) = € 8 million** ▪ **Cost for system alignment and optimisation, system hardware and software upgrades, ATM system integration, administrative IT/ERP alignment etc.** ▪ 3A) ERP alignment, integration and later outsourcing (administrative IT) = € 4 million ▪ 3B) Operative system integration (ATM, CNS, etc) = € 3 million ▪ 3C) Other/remaining administrative IT upgrades (common platforms, etc) = € 1 million	€ 8,000,000
4) Training, competence development and other attrition aiming activities	▪ **Training, competence development, and other attrition aiming activities = € 5 million** ▪ **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**	€ 5,000,000
5) Preparation of outsourcing (Technical maintenance & administrative IT/ERP)	▪ **Preparation and implementation of outsourcing (Technical maintenance & administrative IT/ERP) = € 2 million** ▪ **Cost for preparing the planned outsourcing, preparation of tender materials, supplier management and selection etc.** ▪ **Outsourcing technical maintenance and systems supervision - Legal and business consulting advise**	€ 2,000,000
Total integration costs		€ 30,104,000

Contents

Additional benefit analysis

New potential benefit areas

- In addition to the Business Case presented, an assessment of new potential benefit areas by a formalised cooperation between LFV/ANS and Naviair has been initiated
- The purpose of the additional synergy potential analysis is to conclude whether more synergies can be identified for further analysis in the next phase of the Programme
- The list below contains the identified new potential benefit areas from the analysis

Area	Potential	Potential financial benefits
Systems	Implementation of deliveries from COOPANS – corrections to ATM systems	Approx. € 1.7 million/year
	Technical administrative system and handling of spare parts	Approx. € 1.3 million/year
	ANS data preparation	Approx. € 0.3 million/year
	Route Charging Office system (investment savings of 1M€)	No annual savings
Resource management	Exercise preparation	Approx. € 0.4 million/year
	Use of ATCO personnel in systems development and Business Development projects	Approx. € 0.6 million/year
External costs	Procurement of services and systems - Suppliers, purchasing	Approx. € 2.0 million/year
Stakeholders	Authority approval	Approx. € 0.2 million/year
Operations	Technical Maintenance centre	Approx. € 0.3 million/year
	Airspace Management Cells	Approx. € 0.4 million/year
	Aeronautical Fixed Telecommunication Network	Approx. € 1.0 million/year
	Harmonisation of flight safety reporting and assessment in ATM	Approx. € 0.3 million/year
TOTAL		**Approx. € 8.5 million/year**

Additional benefit analysis

New potential benefit areas

Systems - Implementation of deliveries from COOPANS, corrections and modifications to the ATM system		
Description/rationale	Common methods, resources and work tools for the integration, testing, safety approval and “cut over” of new functions as well as corrections and modifications to the ATM system. COOPANS only includes requirements specification (covered in initiative 3a) – therefore this is an additional potential benefit area	
Preconditions/ assumptions	The savings will be considerable due to the fact that many activities are not volume dependent. The same is valid for systems. One common resource pool for handling the individual testing and configuration management when implementing changes in COOPANS system, e.g. professional test team, which performs test on both Danish and Swedish implementation projects. May improve technical capabilities for test personnel since they will operate as more “professional” test personnel. No savings in the usage of associated operational personnel. Initiative 3 - Technical Development (COOPANS) in NUAC Definition Phase - Appendix 2 includes only requirements specification – therefore this is an additional potential benefit area. FTE cost is assumed to be 0.08 M€/year.	
Estimated savings potential	**1.Configuration management** Common organisation, methods, and tools for optimisation of CM. Reduction in need for resources: 1-2 FTE.	0.2 M€/year
	2. Data Set Common organisation, methods, and tools for optimisation of the handling of data sets. Reduction in need for resources: 3-4 FTE.	0.3 M€/year
	3. PCR Common organisation, methods, and tools for optimisation of the handling of PCR. Solving of technical problems could be optimised if one unit were in charge of PCR analyses (Problem Change Requests), had one common PCR database, so that it could be avoided that both Denmark and Sweden had to perform system testing individually. Reduction in need for resources: 3-4 FTE.	0.3 M€/year
	4. Installation, testing, and safety case. Common organisation, methods, and tools for optimisation of the handling of installation testing, and safety case. Reduction in need for resources: 5-10 FTE.	0.7 M€/year
	5. Test and Development System (TDS) The number of TDS can be reduced by one. The price for one TDS is approximately 5 M€. The total yearly savings will approximately be 0,2 M€	0.2 M€/year
	Total	Approx. 1.7 M€/year

Additional benefit analysis

New potential benefit areas

Systems - Technical administrative system and handling of spare parts		
Description/rationale	One common database to register all systems in Denmark and Sweden in order to coordinate spare parts, hardware etc. and better use of older equipment for areas where this can be sufficient and maybe even a quality improvement compared to current equipment.	
Preconditions/ assumptions	Optimisation of spare parts for the three ATCCs, and one common pool with spare parts. The number of spare parts can be reduced with up to 20%. The volume of spare parts for the equipment in the three centres will correspond to approximately 5 €. In addition there might be a saving in need for storage space and additional costs for transporting spare parts, but this has not been incorporated in the benefit potential.	
Estimated savings potential	Replacing 2 systems with 1 will results in a saving in operation and maintenance of approximately 0.3 M€ annually.	0.3 M€/year
	Spare parts reduction corresponding to 1 €/year.	1 M€/year
	Total	Approx. 1.3 M€/year

Additional benefit analysis

New potential benefit areas

Systems – ANS data preparation		
Description/rationale	Data adaptation and optimised use of capacity and resources for data preparation, new maps for radars, coordinates, local ATS instructions etc.	
Preconditions/ assumptions	Optimising the handling of data sets through coordinating of these tasks and use the competences better if using one common resource pool. Reduction in need for resources 3-4 FTE. FTE cost is assumed to be 0.08 M€/year.	
Estimated savings potential		
	Total	Approx. 0.3 M€/year

Additional benefit analysis

New potential benefit areas

Systems – RCO (route charging office) system		
Description/rationale	Savings related to route charging system, since it is unnecessary to have 2 separate systems for follow up and quality check related to route charging.	
Preconditions/ assumptions	A common system will provide savings relating to current Investment budgets and upgrades for a specialised system. No savings related to FTE.	
Estimated savings potential		
	The expected avoidable investment costs of an RCO system are estimated at approx. 1 M€.	1 M€ (one time saving)
	Total	Approximately 1 M€ (one time saving)

Additional benefit analysis

New potential benefit areas

Resource management – Exercise preparation		
Description/rationale	Planning and resource optimisation. Adaptation of the education and training to NUAC production.	
Preconditions/ assumptions	Optimise the use of resources for education, training etc. and coordination of exercise preparation in NUAC (instead of in NAVIAIR, LFV STO, LFV MM as today). Planning of usage of pseudo pilots, i.e. common resource pool of pseudo pilots, common unit training and competence requirement. Optimise the requirements on the plans for education and training. Improve planning of simulator usage and associated personnel and capacity for fast time simulators.	
Estimated savings potential	The costs for education and training will be considerable. The effect of the common training and education will have a direct influence on NUAC production. Reduction in need for resources: 4-6 FTE. FTE cost 0.08 M€/year	
	Total	Approx. 0.4 M€/year

Additional benefit analysis

New potential benefit areas

Resource management - Optimisation of resource planning		
Description/rationale	Potential benefits in reducing the number of available buffer duties which are used in advance to ensure that the necessary number of staff is in place.	
Preconditions/ assumptions	Dependant of individual ATCO rating which could reduce the cost saving effect. Better use of on call duties for maintenance staff.	
Estimated savings potential	In addition to potential financial benefits, this should help to improve working environment for the employees, since a larger resource pool makes room for more individual adjustments. In addition there might be a savings potential related to one common roster planning system – but due to the large number of requirements to such a system, it might turn out to be an additional cost for implementing such a system.	
	Total	No financial benefits estimated

Additional benefit analysis

New potential benefit areas

Resource management - Use of ATCO personnel in systems development and training, Business Development projects etc.		
Description/rationale	Optimise the use of ATCO personnel in development when there are low capacity periods. Plan usage of operational personnel such that plans for systems updates and implementation are coordinated between CPH, MM and STO in a sequential implementation plan.	
Preconditions/ assumptions	With the common pool of ATCOs the effect could be notable. Using operational personnel for educational purposes might be planned in staggered intervals, and having one common test and training unit will result in a savings potential (not included in initiative 2 and 9 in NUAC Definition Phase Final Report). Reduction in need for resources with staggered educational planning: 3-4 FTE. Reduction in need for resources for Business Development projects : 3-4 FTE. FTE cost 0.08 M€/year	
Estimated savings potential		
	Test and training: 3-4 FTE	0.3 M€/year
	Projects: 3-4 FTE	0.3 M€/year
	Total	Approx. 0.6 M€/year

Additional benefit analysis

New potential benefit areas

External costs - Procurement of services and systems, suppliers, and purchasing		
Description/rationale	Optimising the purchasing by improved bargaining power, coordination of all negotiation with external suppliers, enhance competition between suppliers in order to reduce costs. Implementation sequence planning including strict planning and coordination of procurement of consulting services etc.	
Preconditions/ assumptions	The total yearly purchasing volume regarding services and products for the NUAC company is assumed to be in the area of 30-40 M€. It assumed that a strong focus on bargaining and negotiation could reduce the costs net with 5%. This only includes costs which are not included in investment budgets for ATM and other related systems (covered in initiative 12 and 14).	
Estimated savings potential		
	Total	Approx. 2.0 M€/year

Additional benefit analysis

New potential benefit areas

External costs - international membership fees		
Description/rationale	EUROCONTROL CANSO Possible savings in membership since NUAC will need only one membership.	
Preconditions/ assumptions		
Estimated savings potential		
	Total	No financial benefits estimated

Additional benefit analysis

New potential benefit areas

Stakeholders - Cost for delivering data		
Description/rationale	Optimising the costs of delivering data to customers through internal coordination, harmonisation of interfaces to airports, airlines etc. In Sweden most data communication is administrated through TWR and is therefore out of scope for NUAC. Airports already pay for some info services from providers.	
Preconditions/ assumptions		
Estimated savings potential		
	Total	No financial benefits estimated

Additional benefit analysis

New potential benefit areas

Stakeholders - Authority approval		
Description/rationale	Optimise authority relations e.g. for approving safety cases. This is not included in initiative 2 (Q&S) in NUAC Definition Phase Final Report.	
Preconditions/ assumptions	If authorities could accept that changes and issues approved by Danish authorities would be automatically approved in Sweden too and vice versa. Due to LFV/ANS and Naviair accounting systems it is difficult to exactly quantify the savings. A potential reduction in need for resources of 1-2 FTE. Annual FTE costs is assumed to be 0.08 M€/year.	
Estimated savings potential		
	Total	0.2 M€/year

Additional benefit analysis

New potential benefit areas

Operations – TMC (Technical Maintenance Centre)		
Description/rationale	There will be a saving potential in harmonising methods and systems for technical maintenance centre. By using the LFV method regarding technical watch supervisors in NUAC, the potential reduction in need for resources is shown below.	
Preconditions/ assumptions	Naviair use approx. 5 FTE for the TMC services. In LFV the technical monitoring and control is performed by the operational watch supervisor as well as by the technical watch supervisor i.e. a similar number of FTEs compared to Naviair could provide these services. One common TMC will result in a reduction in the need for resources which is assumed to be in the area of 2-3 FTE. FTE costs are assumed to be 0.08 M€/year.	
Estimated savings potential		
	Total	0.3 M€/year

Additional benefit analysis

New potential benefit areas

Operations – AMC, Optimised use of Airspace Management Cells		
Description/rationale	Optimisation and re-design of operational staff functions - "Optimised use of Airspace Management Cells (AMC)" - tactical use of airspace.	
Preconditions/ assumptions	NUAC should have one common AMC unit. Currently these activities involve 8 FTE, savings potential of 30%, 25% savings in related systems costs. Maintenance costs for an AMC system are assumed to be 1.4 MDKK/year i.e. a savings potential of 0.1 M€/year for all EAD terminals.	
Estimated savings potential		
	Reduction in need for resources	0.3 M€/year
	Savings related to systems	0.1 M€/year
	Total	0.4 M€/year

Additional benefit analysis

New potential benefit areas

Operations – AFTN (Aeronautical Fixed Telecommunication Network)		
Description/rationale	One AFTN unit serving Denmark and Sweden.	
Preconditions/ assumptions	The solution will reduce costs for investment, premises, maintenance, and personal (predominately costs are associated with systems, personal, and maintenance). In the calculation of the savings the ongoing reorganisation of the Swedish AFTN service has been taken into account as well as NUAC initiative 7a) to re-design the briefing function.	
Estimated savings potential		
	Maintenance cost will be reduced with approximately:	0,22 M€
	Staff for technical and operational support can be reduced with approximately 7 FTE.	0,3 M€
	Costs for technical and operational premises.	0,05M€
	The total cost for a new AFTN-centre will be approximately 3 M€. With a calculated life time of 10 years for the system the yearly cost will approximately be:	0,4 M€
	Total	Approx. 1 M€/year

Additional benefit analysis

New potential benefit areas

Operations – Harmonisation of flight safety reporting and assessment in ATM		
Description/rationale	The ongoing efforts in the European Commission and EUROCONTROL concerning harmonisation of the reporting procedures and the procedures for assessment of safety occurrences in ATM (ESARR 2 - Reporting and Assessment of Safety Occurrences in ATM and draft changes to Commission Regulation 2096/2005) have already made Denmark implement legislation for obligatory, non-punitive and anonymous incident reporting. There is reason to believe that a similar system will be implemented in Sweden with the eventual coming into force of the changes to Commission Regulation 2096/2005. This will lead the way for a consolidated processing and course of action for incident reports and assessment in the NUAC company.	
Preconditions/ assumptions	Establishment of a centralised office processing the reports under the prerequisite that the same type of office is implemented in LFV and subsequently combined in NUAC can provide potential savings of approximately 30% of the combined staff = 2-3 FTE total saving and 25% (+) system savings (mainly IT).	
Estimated savings potential		
	Reduced need for resources	0.3 M€/year
	Database avoidable investment cost (by using Danish systems)	0.06 M€
	Savings related to maintenance	0.01 M€/year
	Total	Approx. 0.3 M€/year

Contents

- Introduction
- Analytical framework
- Conclusions
- Business Case evaluation of the supplementary scenarios
- Additional benefit analysis
- Additional material

Possible synergy areas in retained organisations

- During the analysis of the supplementary scenarios and the work with the refinement of the Business Models, a few potential synergy areas in retained organisations have been mentioned
  - Local approach units in Denmark or Sweden may be organised and controlled centrally from an established TRACON such that only TWR services are performed at local airports
  - The situation above might also be applicable in some instances where local airports serve a minimum number of flights compared to the number of resources allocated
  - In Sweden, an initiative called Remote Towers is in the development phase and might result in several local airports being served from one central APP/TWR unit
  - The above mentioned initiatives might result in possible FTE and/or technology savings, but the details have to be further investigated to determine the possibilities