Supporting European Aviation

Masterplan versions
The European experiences

ARISE+ - Support ASEAN ATM Master Plan – V2
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European Masterplan Versions

2009

2012

2015

2019*

Version 2009

Stakeholder commitment

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Master Plan 2009

EUROCONTROL

Preface
Executive Summary

1 Introduction
1.1 Purpose and Scope
1.2 Document Organisation

2 Building the Master Plan
2.1 Performance-Based Approach
2.2 ATM Performance Partnership
2.3 Structuring and Managing the Master Plan

3 Plan for Implementing the ATM Target Concept
3.1 Operational Evolutions Roadmaps
3.2 Supporting Changes
3.3 Stakeholder Deployment Roadmap

4 Benefits and Financing
4.1 Societal Benefits
4.2 Operational Benefits
4.3 Further benefits
4.4 Required Investment and Financing

5 Risk Management
5.1 Capturing and Analysing Risk
5.2 High Priority Risks
5.3 Key requirements for the SESAR future

6 List of References

7 List of Abbreviations and Terminology
7.1 Abbreviations
7.2 Terminology

8 List of Figures and Tables

9 Annexes
9.1 Background
9.2 Traceability Example
9.3 Participating Stakeholder Groups
9.4 SESAR Performance Framework
9.5 Relationship between SWIM and ATM Performance

Master Plan 2012

The main reasons for the update were:

- Significant changes in assumptions (especially due to the economic downturn)
- ICAO ANC Conference in Autumn 2012
- The need for a simplified Master Plan
- Further development of the Performance Driven Approach
- To address Global Interoperability (link with ICAO ASBUs)
- The need for Stakeholder specific deployment and business plans

Master Plan 2012

EUROCONTROL

Executive Summary

1 Introduction: What is the Master Plan
- 1.1 Focus on R&D Improvements and Initial Deployment View
- 1.2 First Edition of the Master Plan: 30 March 2009
- 1.3 The Maintenance of the Master Plan
- 1.4 The 3 Levels of the Master Plan
- 1.5 The 2nd Edition of the Master Plan: The First Significant Update

2 Performance View: What are the Performance Needs and Targets?
- 2.1 Single European Sky High-Level Goals
- 2.2 From SES Goals to the Performance Scheme and Strategic Performance Objectives
- 2.3 The Performance Needs: Performance Required in a Particular Environment
- 2.4 SESAR Contribution to SES Goals
- 2.5 Traffic Trends and Impact on SESAR Performance

3 The Deployment View I: What contributes to Performance?
- 3.1 The 3 SESAR Concept Steps
- 3.2 The 6 SESAR Key Features
- 3.3 The Essential Operational Changes
- 3.4 Focus on Deployment Baseline Essentials
- 3.5 Focus on Step 1 Essential Operational Changes and Highlights of Steps 2 and 3
- 3.6 Applicability of Essential Operational Changes According to Operating Environment
- 3.7 Mapping SESAR Changes to the ICAO Framework in order to enable Interoperability
- 3.8 Role of the Human

4 Deployment View II: How and when is Deployment Needed?
- 4.1 ATM Technology upgrades supporting Step 1 Essential Operational Changes
- 4.2 Deployment Roadmaps per Stakeholder
- 4.3 Infrastructure Roadmaps
- 4.4 Standardisation and Regulation

5 The Business View: What are the Costs and Benefits?
- 5.1 Benefits of SESAR Step 1 and Deployment Baseline
- 5.2 Costs of SESAR Deployment Baseline and Step 1
- 5.3 High-level Cost Benefit Analysis for Scheduled Airlines
- 5.4 Required Investments and Financing
- 5.5 The Business View Conclusions

6 Risk Management
- 6.1 Risk is Systematically Captured, Analysed and Mitigated
- 6.2 High-Priority Risks Identified

7 List of Abbreviations

8 Annexes
- 8.1 Annex A: Summary of SESAR Baseline and Step 1 Essential Operational Changes
- 8.2 Annex B: Mapping SESAR Operational Changes – ICAO Aviation System Block Upgrades

Master Plan 2015

- A Vision including new improvements such as **flight and flow centric ATM**
- **Infrastructure rationalisation** & enabling **new business models** (e.g. cross border service provision)
- Systematic coverage of the **Military perspective**
- Expanded section on **role of the Human** developed by the social partners
- Introduction of **RPAS** & **Cybersecurity**
- Standardisation & regulatory **roadmap** replaced by indication of **needs**
- **Holistic business** view
- Mature deployable solutions <-> less mature future solutions requiring further validation

Master Plan 2015

Master Plan 2015
Executive Summary

1 Introduction
- 1.1 Single European Sky High-Level Goals – overall performance ambition
- 1.2 ATM in a changing landscape
- 1.3 What is the European ATM Master Plan?
- 1.4 2015 edition of the Master Plan: significant updates
- 1.5 The ATM innovation lifecycle
- 1.6 Maintenance of the Master Plan

2 The SESAR Vision
- 2.1 Offering improvements across ATM
- 2.2 Supporting change in ATM
- 2.3 Common Support Services

3 Performance View
- 3.1 Enabling maximum performance gains
- 3.2 Cost efficiency to support ANS productivity
- 3.3 Operational efficiency
- 3.4 Environment
- 3.5 Capacity
- 3.6 Safety and security
- 3.7 Military performance requirements

4 Operational View
- 4.1 SESAR Target Concept
- 4.2 SESAR Key Features
- 4.3 SESAR Operational Changes
- 4.4 Safety nets
- 4.5 Remotely-piloted aircraft systems
- 4.6 Mapping to the global context
- 4.7 Role of the human

5 Deployment View
- 5.1 How and when the SESAR vision can be deployed
- 5.2 Deployment scenarios
- 5.3 ATM Technology Changes supporting Essential Operational Changes
- 5.4 Deployment roadmaps for each stakeholder
- 5.5 Infrastructure
- 5.6 Standardisation and regulatory view

6 Business View
- 6.1 Holistic view of SESAR benefits ambition and investment needs
- 6.2 Next SESAR deployment wave
- 6.3 Incentivisation strategy and possible areas of regulation

7 Risk Management
- 7.1 Capturing and analysing risk
- 7.2 Identified high-priority risks

8 Annexes
- Annex A: mapping SESAR Operational Changes – ICAO Aviation System Block upgrades
- Annex B: Avionics roadmap
- Annex C: List of abbreviations

Master Plan 2019
Digitalising Europe's aviation infrastructure

- Provides a clear and future-proof vision for the finalisation of the SESAR project as a whole, towards a **"digital European sky"** (2040)
- **Addresses integration of all air vehicles**, manned and unmanned, civil and military, **in all airspaces, controlled or not (first reference to U-space)**
- Integrates results and recommendations of the **Airspace Architecture Study (AAS)** addressing the "capacity crunch" and is aligned with key Wise Persons Group's findings and recommendations
- Combines improvements linked to **airspace** optimisation and reconfiguration and **technological** solutions (AAS)
- Synchronised with EASA's **European Plan for Aviation Safety** (EPAS)

The 2009 view

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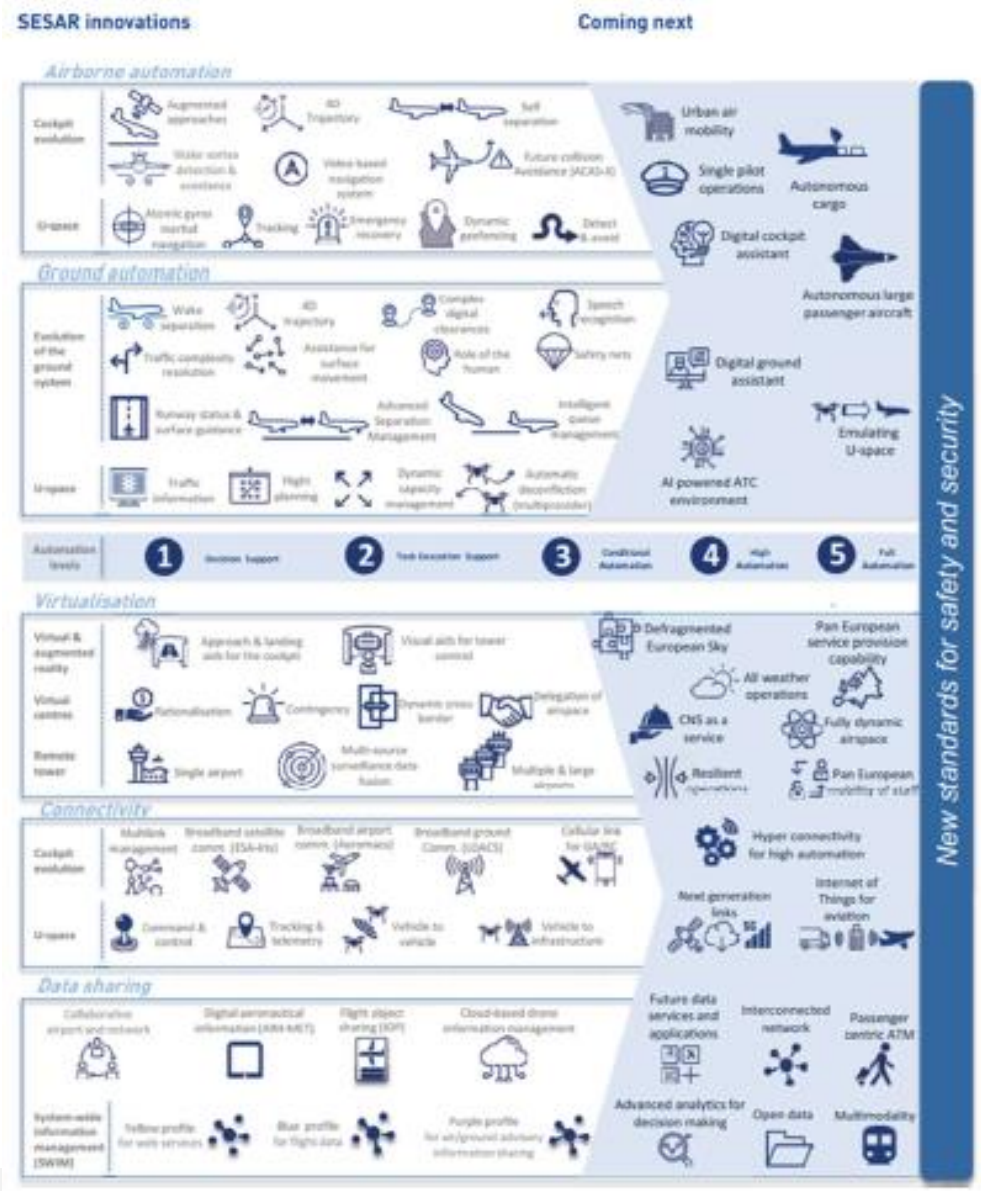
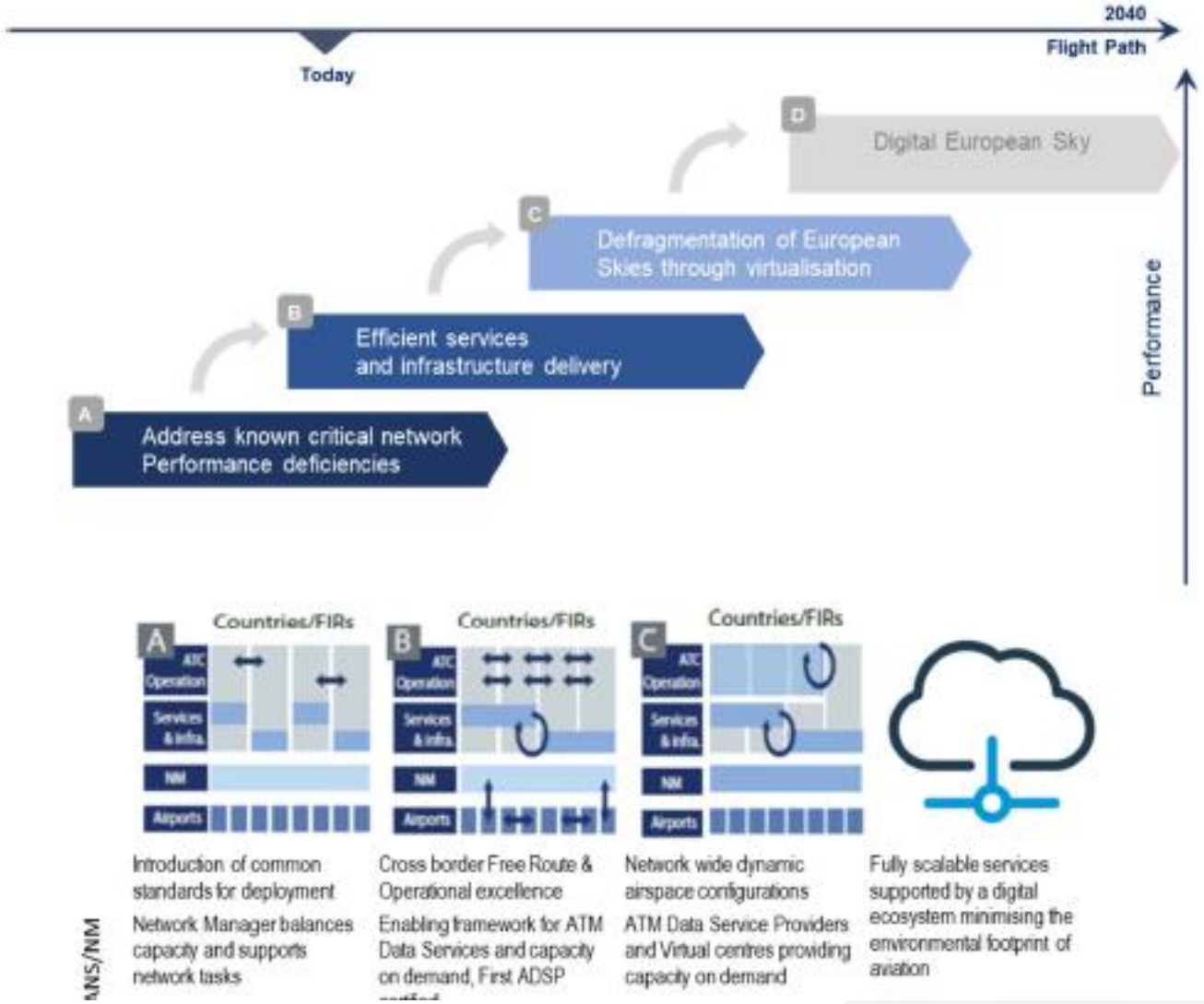
The 2019 View





Future European Masterplans

Conclusion

- Each version of the European Masterplan serves clear purpose(s)
  - R&D
  - Capacity
  - Cost-Efficiency
  - …

Most important for you is to select

‘Which problem are you trying to solve ?’