

# SMS IMPLEMENTATION THE EUROCONTROL PERSPECTIVE

*EASA Workshop On Safety Management Systems  
15 & 16 January 2008*

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EUROCONTROL

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Business Division Safety, Security & Human Factors

# European ATM Safety Framework

	<b>Safety Regulation</b>	<b>Safety Management</b>
	<ul style="list-style-type: none"><li>- ATM regulation</li><li>- Independent view</li><li>- Establish rules</li><li>- Monitor !</li></ul>	<ul style="list-style-type: none"><li>- Achieve</li><li>- Assure</li><li>- Promote</li></ul>
Pan-European	Safety Regulation Commission	EUROCONTROL Agency
National	Civil Aviation Authority (MoT)	Air Navigation Service Provider

**JAA/EASA co-ordination for Airborne regulations**

# International Regulations on ATM Safety

International Standards  
and Recommended Practices



**Annex 11**  
to the Convention on  
International Civil Aviation

## Air Traffic Services

**Air Traffic Control Service  
Flight Information Service  
Alerting Service**

This edition incorporates all amendments  
adopted by the Council prior to 13 March 2001  
and supersedes, on 1 November 2001, all previous  
editions of Annex 11.

For information regarding the application  
of the Standards and Recommended Practices,  
see Foreword.

Thirteenth Edition  
July 2001

International Civil Aviation Organization

EUROPEAN ORGANISATION FOR THE SAFETY OF  
AIR NAVIGATION



EUROCONTROL SAFETY REGULATORY REQUIREMENT  
(ESARR)

### ESARR 3

USE OF SAFETY MANAGEMENT  
SYSTEMS BY ATM SERVICE  
PROVIDERS

Version : 1.0  
Date : 17-07-2000  
Status : Released Issue  
Classification : General Public

21.12.2005 Official Journal of the European Union L 335/13

#### COMMISSION REGULATION (EC) No 2096/2005 of 20 December 2005

laying down common requirements for the provision of air navigation services  
(Text with EEA relevance)

COMMISSION OF THE EUROPEAN COMMUNITIES,

having regard to the Treaty establishing the European  
Community,

having regard to Regulation (EC) No 550/2004 of the European  
Parliament and of the Council of 10 March 2004 on the  
provision of air navigation services in the single European sky  
service provision Regulation<sup>(1)</sup>, and in particular Articles 4  
and 6 thereof,

has:

Pursuant to Regulation (EC) No 550/2004, the  
Commission is required to establish common  
requirements for the provision of air navigation services  
throughout the Community. A Regulation providing  
direct application is the most suitable instrument for  
this purpose.

The provision of air navigation services within the  
Community should be subject to certification by  
Member States. Air navigation service providers which  
comply with the common requirements should receive  
a certificate in accordance with Article 7 of Regulation  
(EC) No 550/2004. Those air navigation service providers  
which may operate without a certificate should  
endeavour to ensure maximum compliance with the  
common requirements as far as possible.

The application of the common requirements should be  
layed down pursuant to Article 10 of Regulation (EC) No  
550/2004. The Commission should ensure that the  
Member States' regulatory framework is adapted to the  
requirements of the single European sky. In order to  
order, public security and other matters, set out in  
Article 11 of Regulation (EC) No 549/2004 of the  
European Parliament and of the Council of 10 March  
2004 laying down the framework for the creation of  
the single European sky (the framework Regulation)<sup>(2)</sup>.

(<sup>1</sup>) 2004/550/EC, OJ L 10, p. 10.  
(<sup>2</sup>) 2004/549/EC, OJ L 10, p. 1.

The common requirements should not cover military  
operations and training within the scope of Article 1(2)  
of Regulation (EC) No 549/2004.

(4) The definition of common requirements for the  
provision of air navigation services should take due  
account of the legal status of air navigation service  
providers in the Member States. Furthermore, when an  
organisation pursues activities other than the provision of  
air navigation services, the common requirements to be  
laid down pursuant to Article 6 of Regulation (EC) No  
550/2004 should not apply to such other activities or to  
resources allocated to activities outside the provision of  
air navigation services, unless provision is made to the  
contrary.

(5) The application of common requirements to air navigation  
service providers should be proportional to the  
risks linked with the specific functions performed, such  
as the number of aircraft, the complexity of the  
processes involved, the number of air navigation service  
providers, the number of air navigation service providers  
involved in the provision of the services and  
thereby with the complexity of the tasks. Within  
the single European sky, the Commission should  
ensure that the common requirements are applied to  
certain categories of air navigation service providers  
and that the common requirements for the provision of air navigation  
services are adapted to the requirements for the  
provision of air navigation services. Consequently, the  
conditions attached to the certificate should reflect the  
nature and the complexity of the denotation.

(6) In order to ensure the proper functioning of the certifi-  
cation scheme, Member States should provide the  
Commission with all relevant information on the deno-  
tations granted by their national supervisory authority in  
the context of their annual reports.

(7) The different types of air navigation services are not  
necessarily subject to the same requirements. It is  
therefore necessary to adjust common requirements to  
the special features of each type of service.

(8) The onus of proving compliance should lie with the air  
navigation service providers, for the period of validity of  
the certificate and for all the services covered.



# Evolution of the Safety Work in EUROCONTROL



# Single European Sky Legislation: Transposition of ESARRs

**ESARR 1**  
**ATM SAFETY OVERSIGHT**



*Regulation*

**ESARR 2**  
**ATM SAFETY OCCURRENCES**



*EC Directives*

**ESARR 3**  
**SAFETY MANAGEMENT SYSTEMS**




*Common  
Requirements*

**ESARR 4**  
**RISK ASSESSMENT AND MITIGATION**



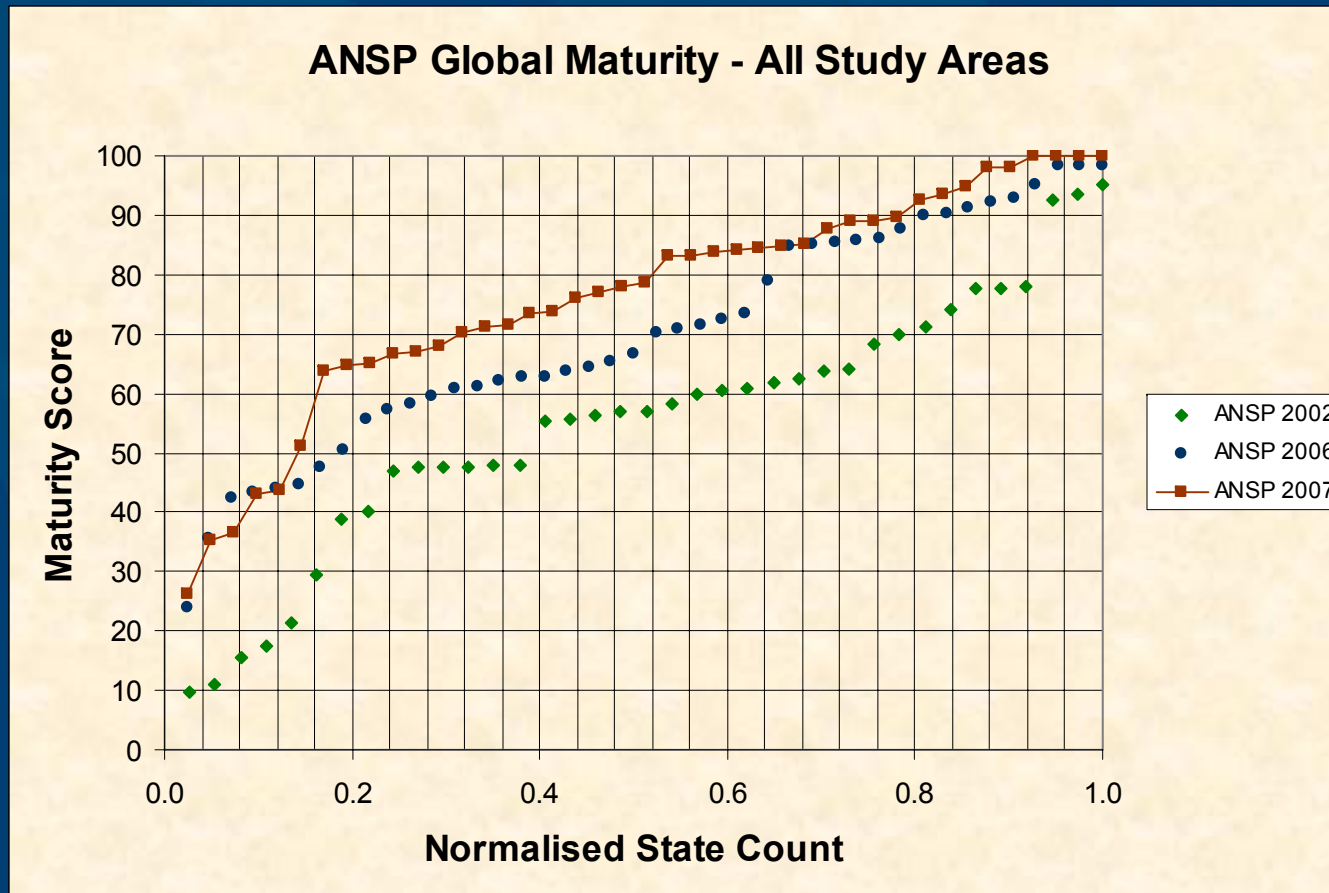
*Common  
Requirements*

**ESARR 5**   
**ATM PERSONNEL**  
*EC Directive &  
Common Requirements*

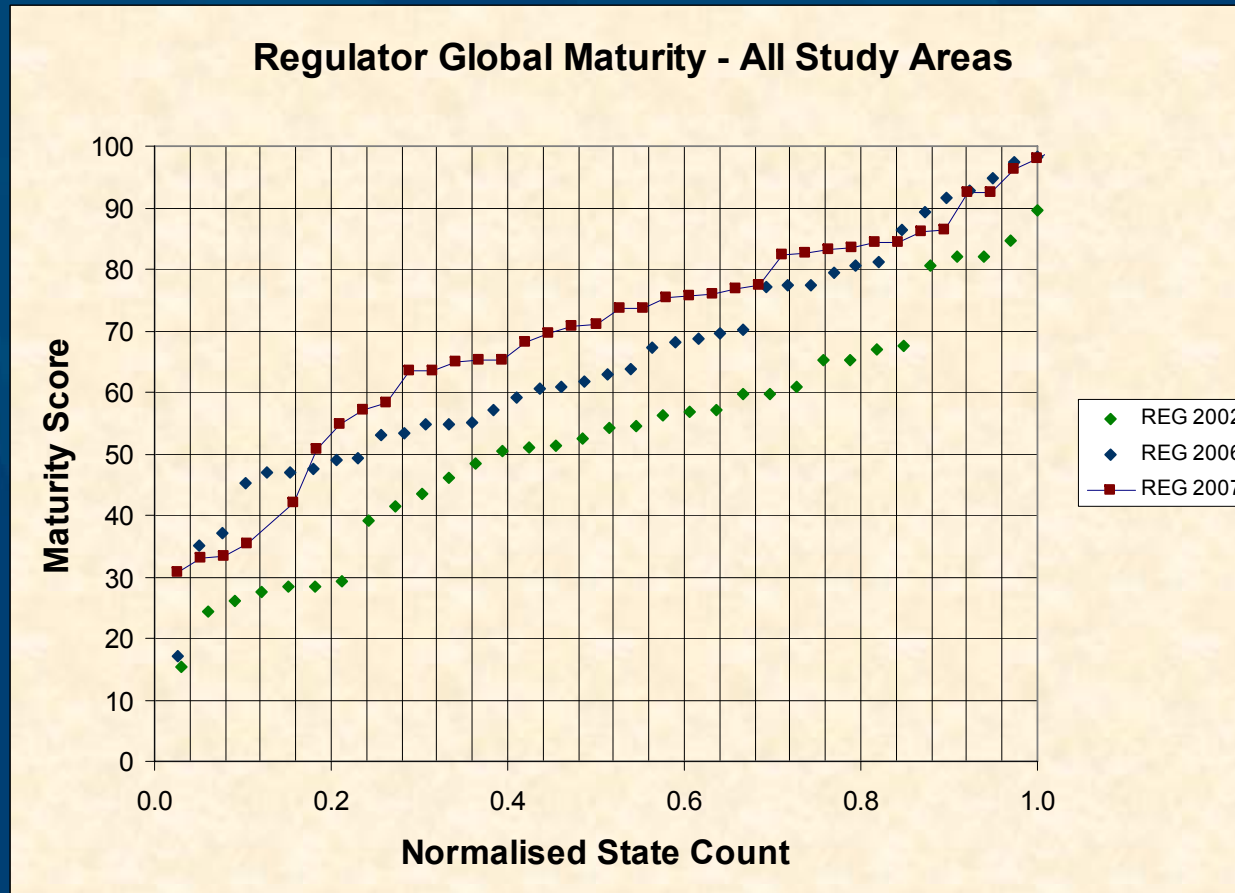
**ESARR 6**   
**SYSTEM SW**  
*Regulation*

**ESARR 7**  
**ATM PROCEDURES**

# SMS Maturity in ECAC for ANSPs



# SMS Maturity in ECAC for Regulators



# European Safety Programme for ATM (ESP)



- Rational:
  - Traffic increase requires sustainable effort
  - Safety Regulation and Safety Management combined for all stakeholders
  - Supports implementation of SES and CR's
- Formally launched 28 Feb 2006
- Short term action driven: 2006 – 2008
- Five areas:
  1. Implementation and Support to European Safety Legislation and Regulation
  2. Incident Reporting and Data Sharing
  3. Risk Assessment and Mitigation in Day-to-Day Operations
  4. System Safety Defenses
  5. Safety Management Enhancement

# Examples of the ESP

Needs from ANSPs	Programme scope
Support to help ANSPs understanding and delivering SES	Support module
Lack of skilled resources in safety management for ANPS Europe wide	ATM Safety Training
Better understanding of risks taken when changing ATM constituents ( equipment, procedures, airspace design, ..)	Guidance material and sharing best practices
Harmonization on operating ground based safety nets	Developing best practices, harmonization and educating ANSPs

Needs from NSAs	Programme scope
Support to help NSAs understanding and delivering SES	Support module
Lack of skilled resources in safety regulation for NSAs Europe wide	ATM Safety Regulation Training
Assessment of the safety oversight capability of NSAs	ESIMS visits ( now co-ordinated with IUSOAP )
Knowledge of the safety performance of the European ATM System	Collection of ATM Safety Data



# Support to SMS Implementation

## EUROCONTROL Generic Safety Management Manual



DAP/SAF

SASI Project

*Support to ANSPs  
for SMS Implementation*

EUROCONTROL



### EGSMM

EUROCONTROL Generic Safety Management Manual  
Part 1 Chapter 1

**SMS implementation development plan**

(DRAFT)



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# Safety Improvement Initiatives

Runway  
Incursion



Level Bust



Unauthorised Penetration  
of Airspace



Human Factors



## Level Bust Tool Kit

-  **Level Bust** - An introduction to the Level Bust issue
-  **Enter the Tool Kit**
-  **How to use this Tool Kit**

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**Air-Ground Communication Safety Study  
Causes and Recommendations**



# Focus: Incident Reporting and Data Sharing



- SAFREP Task Force and Report :
- Recommendations in 3 areas:
  - Improve ATM incident reporting culture by ATCOs and Pilots
  - Improve and deliver a high quality incident data flow
  - Develop Safety KPI's

# Lessons Dissemination, Training & Awareness

**EXPECT THE UNEXPECTED!**

**SAFETY ALERTS**  
Keeping Your Heads Up!

All EUROCONTROL Safety Alerts available on:  
[www.eurocontrol.int/safety-alerts](http://www.eurocontrol.int/safety-alerts)

Subscribe to: [tzvetomir.blajev@eurocontrol.int](mailto:tzvetomir.blajev@eurocontrol.int)



Eurocontrol IANS  
Institute of Air Navigation Services

**ians**

Training Activities 2008

**N°2 HindSight**  
January 2006

**COMMUNICATION**  
*"Hindsight" the ability or opportunity to understand and judge an event or experience after it has occurred.*

Win a free trip for two to Paris:  
See page 26

Report  
berg

**The Phonological WHAT?**  
See page 25



DAFSAF January 2006



# Skybrary: The Concept

“ The single point of reference in the network of aviation safety knowledge ”

The screenshot shows the Skybrary website interface. At the top left is the 'SKYbrary' logo. Below it is a search bar with 'Go' and 'Search' buttons. A navigation menu on the left lists categories like 'Main page', 'Operational issues', 'Enhancing safety', 'Safety regulations', 'Book reviews', and 'Accident reports'. The main content area features a 'Welcome to Skybrary' message, stating it is 'The single point of reference in the network of aviation safety knowledge' and contains '3457 articles in English'. Below this are logos for EUROCONTROL, ICAO/OACI/IFALP, and the Flight Safety Foundation. A 'Popular pages' section includes 'Operational Issues Portal', 'Enhancing Safety Portal', and 'Safety Regulations Portal'. A grid of featured categories includes Air Ground Communication, Airspace Infringement, Bird Strike, Controlled Flight Into Terrain, Fire, Ground Occurrences, Human Factors, Level Bust, Loss of Control, Loss of Separation, Runway Excursion, Runway Incursion, Wake Vortex Turbulence, Weather, and General. A 'Highlighted article' section features 'ATCO Work Load' with a description of the ATCO's role. A 'Skybrary Solutions' section lists 'All Clear? Toolkit', 'Level Bust Toolkit', 'Airspace Infringement Early Action Package', and 'Skybrary ICAO Search and Solutions Centre'.

Skybrary is an initiative of EUROCONTROL and ICAO with the sole purpose of safety knowledge exchange.

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# Skybrary: Further Development

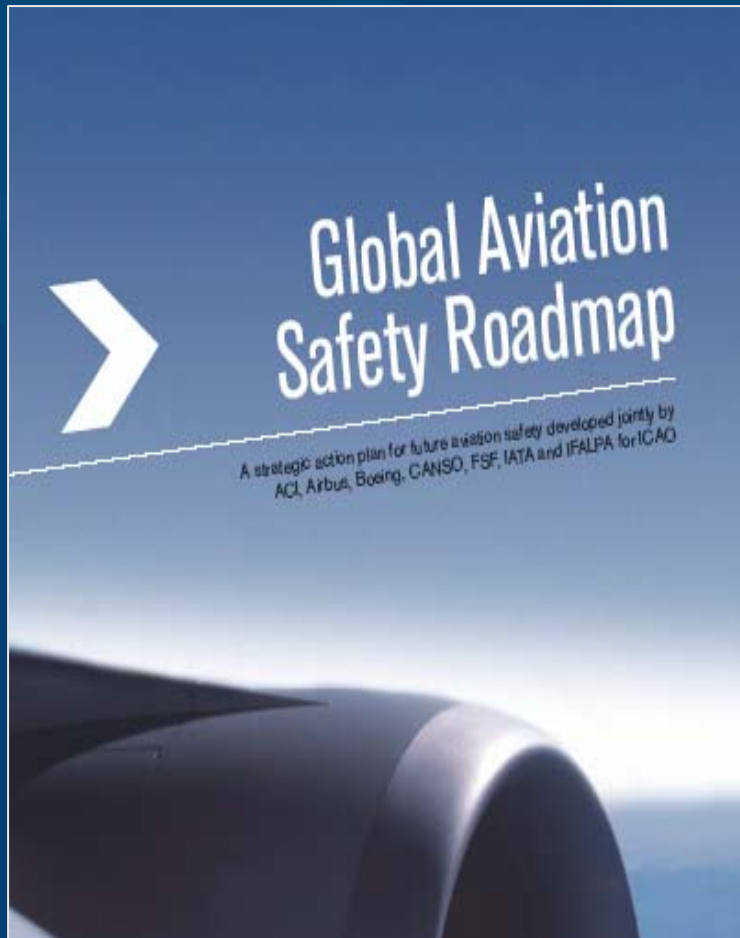
- The extensive prototyping is finished.
- ICAO joined as co-founder.
- A project is under progress to allow fast search in all ICAO SARPs and other ATM related documents.
- Flight Safety Foundation joined as co-founder and agreed their knowledge to be used.
- The population of knowledge is under progress.

[www.skybrary.aero](http://www.skybrary.aero)



[www.skybrary.aero](http://www.skybrary.aero)

## Next Steps ...



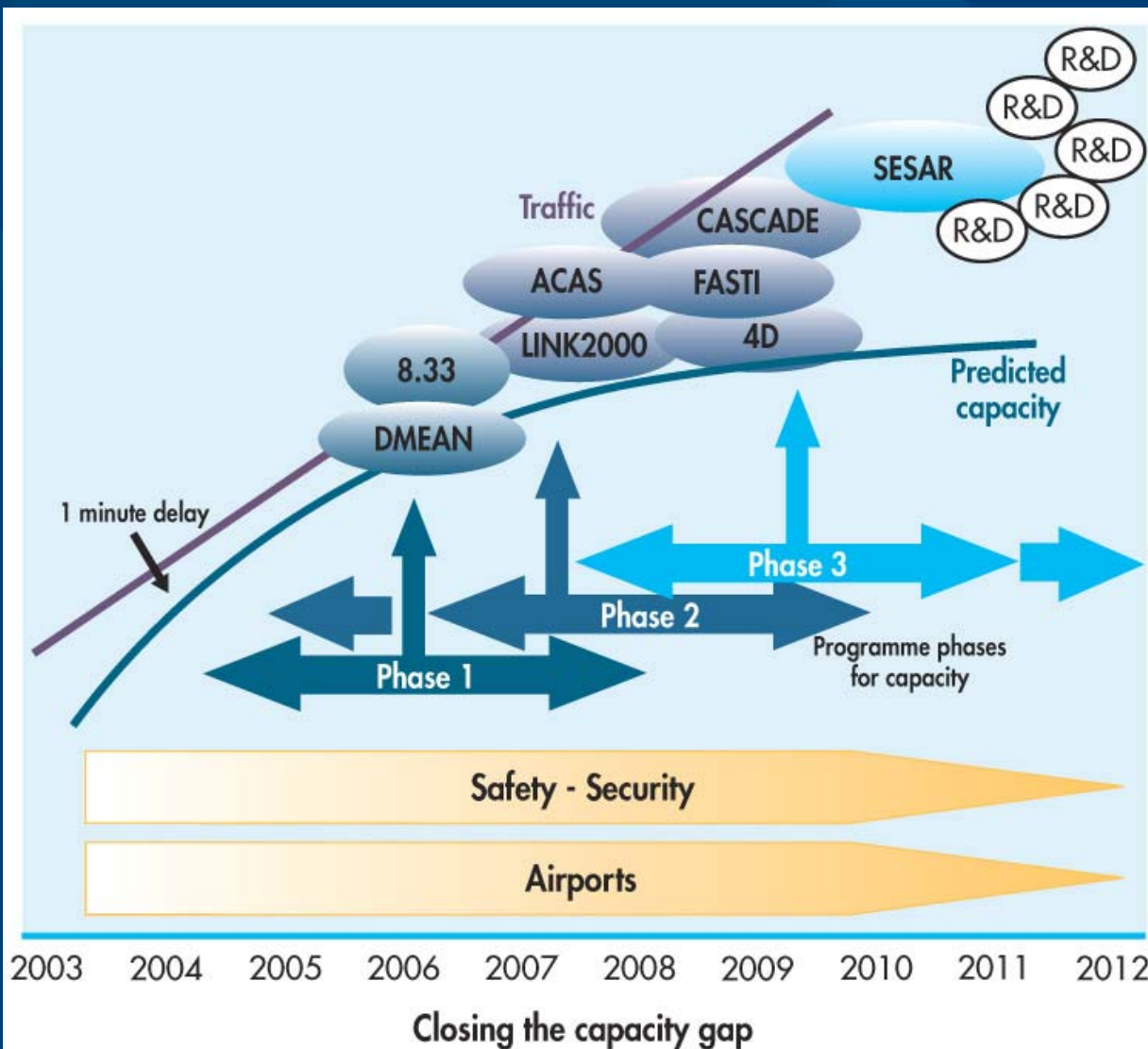
- Implementation of the ICAO Global Aviation Safety Roadmap
- Participation in the European Strategic Safety Initiative (ESSI)

# Example of Inconsistent Use of Safety Management Systems

Maturity Level	Capability
Level 1 – Developing	<ul style="list-style-type: none"> <li>• States – Current ICAO SMS requirements not implemented and not communicated to industry</li> <li>• Industry – SMS not implemented</li> </ul>
Level 2 – Areas Identified for Improvement	<ul style="list-style-type: none"> <li>• States – Current ICAO SMS requirements are communicated to industry sectors / disciplines</li> <li>• Industry – SMS implemented in those sectors and disciplines currently required to have done so</li> </ul>
Level 3 – Evolving – Changes in work	<ul style="list-style-type: none"> <li>• States – National Legislation / Regulations require all sectors and disciplines to implement an SMS.</li> <li>• Industry – SMS implementation programs developed for sectors and disciplines not previously covered by SMS requirements</li> </ul>
Level 4 – Highly Evolved	<ul style="list-style-type: none"> <li>• States – <ul style="list-style-type: none"> <li>○ ICAO USOAP audit process covers the topic of SMS.</li> <li>○ SMS is regulated according to ICAO provisions and industry best practices</li> <li>○ States and Regulatory Authorities facilitate the sharing of SMS best practice as it evolves</li> </ul> </li> <li>• Industry – <ul style="list-style-type: none"> <li>○ Organizations within all sectors and disciplines of the aviation industry including suppliers of goods and services that impact upon aviation safety have their own formal SMS.</li> <li>○ Both internal and independent Audits of the SMS take place.</li> <li>○ All sectors and disciplines work together effectively in an integrated manner to manage risk across boundaries.</li> <li>○ SMS best practice is shared across sectors as it evolves.</li> </ul> </li> </ul>

- Estimated Maturity: 3+
- Proposed Lines of Actions:
  - Identify those “sectors and disciplines” that need to implement a formal SMS and specify the associated SMS requirements.
  - Design mechanisms to share best practices on SMS across the various sectors of aviation.
  - Review Safety Management principles in the light of SESAR definition of the chain of responsibilities.

# ATM Programmes, SESAR and Safety



Any Questions ...

<http://www.eurocontrol.int/safety>

<http://www.eurocontrol.int/esp>

