Safety Performance: From Local to FAB to Network Approach

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2004: SES I adopted to improve safety and efficiency of air transport in Europe

2009: SES II package adopted to reinforce the European commitment on continuous safety improvements and more sustainable air transport by:

- Introducing a performance framework with quantified target setting;
- Creating a reference safety framework to enable harmonised development of safety regulations and their effective implementation;
- Enabling the implementation of new technologies, operational concept and increasing safety levels by a factor of ten;
- Improving management of airport capacity.
• **Goals:**
  - Handle 3 times more traffic
  - Improve *safety* by a factor of 10
  - Cut ATM management costs by 50%
  - Reduce the environmental impact per flight by 10%

• **Network perspective, i.e., EU-wide targets:**
  - Performance of the network: targets, integration (NM, FABs, airports)
  - Safety (*single safety framework*)
  - Technology (dynamic flow management, SESAR deployment)
  - Airports (capacity, efficiency, *safety*, planning, investments)
  - Humans (who make the network “work”)

• **Implementation through numerous actors:** EC, EUROCONTROL, FABs, ANSPs, Airports (Airport Package), National Governments, EASA, etc.
SES II Package toolbox/actors

SES II package

- Regulations
  - Performance scheme
  - FABs National-FAB targets
  - Network Mgt NM targets
- Safety
  - EASA EASA targets?
- R&D
  - SESAR R&D targets
- Airports
  - Airport Observatory

EU targets

Link with airport package
Consistency and coordination

Performance (Objectives):
- Safety
- Environment
- Capacity
- Cost-efficiency

SES II tools (actors):
- R&D/Technology Pillar (SESAR)
- Regulation Pillar (States, FABs, NM, ANSPs, Military, EC)
- Safety Pillar (EASA)
- Airport Pillar (Airports)

Definition & Accountability

Implementation & Accountability

Trade-offs
Since then ….

- The NM has been appointed
- PRB has started its work
- FABs implementation still in progress
- Significant downwards revision in medium term forecast … 2008 traffic level not before 2015!
- The implementation of RP1 Performance Scheme has started
- Consultation process for RP2 targets has been launched to be consolidated by the end of 2013
- We are now clearly in the world of Performance Regulation
- SES II+ … ??
RP2 Driving Principles

- Build on RP1 achievements:
  - KPIs need to be robust, tested and stable
  - Do not change KPIs that already work
- Secure adequate convergence with other SES tools (FABs, Network Manager, SESAR) and related policies (airport package)
Overriding safety objectives shall be protected against interdependencies/trade-offs of different KPAs at local and FAB level.

- Safety is the rationale of ATM and it is “non negotiable”!
- Safety and efficiency are positively linked
- Safety represents an efficiency driver for the overall ATM system
- Safety targets setting must not drive inappropriate behaviour (e.g. just focusing on targets achievement) or negatively affect safety culture or reporting culture
• Full **collaboration** among the different stakeholders to reach the expected safety performance targets

• SPIs shall be **effective, easy to measure and meaningful** across all States and within FABs

• Safety targets shall be **apportioned in a meaningful way** at FAB level and leading to focused actions

• From a safety perspective, each organisation must be able to focus, as appropriate, on the **most significant risks and mitigations** at local, FAB and Network level
Proposed EU-wide and Local RP2 SPIs

- PRB’s proposal for RP2 safety performance is to set EU-wide targets on the two indicators monitored during RP1.
- A lack of maturity for the selected SPIs has been noted due to a lack of validated data.

<table>
<thead>
<tr>
<th>Safety Performance Indicator</th>
<th>EU-wide</th>
<th>Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness of Safety Management (EoSM)</td>
<td>Target</td>
<td>Target</td>
</tr>
<tr>
<td>Application of the severity classification based on the Risk Analysis Tool (RAT) methodology to the reporting of occurrences, as a minimum, Separation Minima Infringements, Runway Incursions and ATM-specific occurrences at all ATS Centres and airports.</td>
<td>Target</td>
<td>Target</td>
</tr>
<tr>
<td>Just Culture</td>
<td>No</td>
<td>Target</td>
</tr>
</tbody>
</table>
• (EU) No 691/2010: “laying down a performance scheme for air navigation services and network functions”

• **Article 5, Para 1**: Where Member States decide to adopt a FAB performance plan they shall: ...(c) make appropriate arrangements to ensure that a **single target is established for each key performance indicator**;

• **Article 5, Para. 3**: Where Member States of a FAB do not adopt a performance plan with targets at FAB level, they shall communicate for information to the Commission **aggregated performance targets** highlighting the consistency at FAB level with the European Union-wide performance targets.
• **(EU) 176/2011:** “Information to be provided before the establishment and modification of a functional airspace block”

> **Annex Part 2:** With regard to the FAB safety case, the following information should be provided:

• A description of the arrangements dealing with **accident and incident investigation** and plans on how to address safety data collection, analysis and exchange;

• A description of the safety management system in place or planned to **avoid degradation in safety performance** within the FAB;

• A description of the arrangements clearly identifying and allocating the responsibilities and interfaces with relation to the **setting of safety targets, safety oversight** … in regard to the provision of air navigation services within the FAB.
Where do we stand today, together as a FAB?

Where do we go?

How do we get there?

Do we meet the regulatory requirements?

Do we have any new risks (due to the FAB)?

Are there any safety benefits to be gained?
FAB Safety Action Plan

...action plan aligned with the reference periods of the performance regulation...

2013 2014 2015+

2020

SHORT TERM
• FAB Safety Policy
• FAB SMS organisation
• Occurrence reporting and assessment
• Risk Management
• Setup of FAB Safety Performance monitoring
• FAB Safety Programme

MID-TERM
• Harmonisation of SMSs
• Implementation of FAB Safety Performance monitoring
• FAB-wide occurrence reporting and assessment
• Adoption of best practices
• Harmonisation of safety culture
• FAB Safety Report

LONG TERM
• One unique FAB SMS
• Continuous improvements through FAB-wide surveys
• Management of external services
• Ensure harmonised competence in all SMS areas
• FAB Acceptable levels of safety
• Going beyond FAB boundaries

Performance IR – First Ref. Period

Performance IR – Second Ref. Period
Safety Performance at FAB level (1/2)

• Agreement on a FAB-wide safety monitoring process

• Common monitoring tools/methodologies should be tested and adopted (e.g. APF)

• FAB safety performance further analysed and aggregated, through a combination of leading and lagging indicators (e.g. AHP - Analytical Hierarchy Process and APF – Aerospace Performance Factor)
• SES II compliant FAB-wide safety performance indicators defined
• EoSM measured at each ANSP level and aggregated with an agreed/validated methodology
• The FAB top 5 safety concerns/risks shall be defined, based initially on expert judgment and, subsequently, complemented by data.
• Additional tools for safety performance monitoring (e.g. ASMT Automatic Safety Monitoring Tool) may be considered for adoption, initially at ANSP level and then at FAB level.
The puzzle to solve at FAB level ...

- What will be the FAB Safety Performance Indicators?
- SPIs proposed by the regulation or additional ones?
- What safety data do we need to collect at FAB level?
- How do we collect the safety data?
- How do we overcome legal / confidentiality / compatibility issues with the collected safety data?
- How do we aggregate national safety targets into FAB ones?
### Safety Performance at NM level

<table>
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<tr>
<th>Ensure a safety approach to the network operations – <strong>SO 7</strong></th>
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<tr>
<td><strong>Identification of Network Safety risks</strong></td>
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<tr>
<td><strong>Improve the safety of operations in the ATM network</strong></td>
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<tr>
<td><strong>Improve Safety nets</strong></td>
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<tr>
<td><strong>Support to enhance and harmonise Safety Management Systems and Safety Culture Across the ATM network</strong></td>
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<td><strong>Reduce the human contribution to risk in operations</strong></td>
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- Does current performance-based regulation actually drive the expected safety performance improvements?
- If collaboration among the different stakeholders is the only way to reach the expected safety performance targets, then how can this be achieved under the current institutional framework?
- Will stakeholders concentrate on their own safety targets to the detriment of FAB or Network ones?
- Who is responsible for what?
- How can the stakeholders work effectively with the network manager?
- Who is the leader of this process? If any?
Thank you for your attention!

Questions