Safety KPA

Regional Performance Framework Workshop, Bishkek, Kyrgyzstan, 21-23 May 2013
• Doc 9854 Appendix D
  – Safety is the highest priority in aviation,
    • and ATM plays an important part in ensuring overall aviation safety.
  – Uniform safety standards and risk and safety management practices
    • should be applied systematically to the ATM system.
  – In implementing elements of the global aviation system,
    • safety needs to be assessed
      – against appropriate criteria and
      – in accordance with appropriate and globally standardized safety management processes and practices.
# Safety KPA – Overview

<table>
<thead>
<tr>
<th>KPA</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>Ensure the continuous improvement of safety through the reduction of ATM related safety occurrences and the implementation of uniform safety standards.</td>
</tr>
<tr>
<td><strong>Indicators</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Effectiveness of Safety Management (EoSM)</td>
</tr>
<tr>
<td>2</td>
<td>Level of State Just Culture (JC)</td>
</tr>
<tr>
<td>3</td>
<td>Application of a common methodology for classification of occurrences in terms of risk severity</td>
</tr>
</tbody>
</table>
Safety KPA – Origin of indicators

• These are the safety indicators already used by SES Reference Period 1 (RP1) since 2012
  – Note that these are leading indicators (measuring precursors to improved safety) and not lagging indicators (which are directly related to safety outcome).

• Based on detailed material published by EASA in 2011
  – Acceptable Means of Compliance (AMC)
  – Guidance Material (GM)
  – ICAO Guidance Material only summarises and explains this
Effectiveness of Safety Management (1)

• Indicator based on the annual completion of two questionnaires
  – A State level questionnaire (38 questions)
  – An ANSP level questionnaire (26 questions)
• Use of the answers
  – Sole purpose of generating recommendations and associated plans for improvement of the safety management
  – Not used to generate findings in the context of standardisation inspections/oversights
Effectiveness of Safety Management (2)

• Example question
  – Q1.6 There is a competent authority established to be responsible for safety in ATM/ANS
    • supported by appropriate and adequate technical and nontechnical staff
    • with safety policies, regulatory functions, roles, responsibilities and objectives in place.

• Answer
  – Level of maturity (multiple choice)
    • A – Initiating
    • B – Planning/ Initial Implementation
    • C – Implementing
    • D – Managing & Measuring
    • E – Continuous Improvement
  – Please provide justification for selected answer
    • Free text
Effectiveness of Safety Management (3)
Verification of answers

- ICAO EUR/NAT Office accreditation (56 States)
- ICAO EUR Region (52 States)
- ECAC (44) – Iceland (1) = 43 States
- EUROCONTROL (39) + Estonia (1) = 40 States
- SES Performance Scheme (29 States)

EU (27 States)
- Austria
- Belgium
- Bulgaria
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain

Other Countries
- Albania
- Armenia
- Bosnia and Herzegovina
- Croatia
- Macedonia
- Moldova
- Monaco
- Montenegro
- Serbia
- Turkey
- Ukraine
- Andorra
- San Marino
- Azerbaijan
- Georgia
- Kazakhstan
- Kyrgyzstan
- Russian Federation
- Tajikistan
- Turkmenistan
- Uzbekistan

Verification of answers
- ECAA Member
- by EASA
- by EUROCONTROL
- at State level only

<table>
<thead>
<tr>
<th>ECAA Member</th>
<th>by EASA</th>
<th>by EUROCONTROL</th>
<th>at State level only</th>
</tr>
</thead>
</table>

20 May 2013
Effectiveness of Safety Management (4)

- Questionnaires to be submitted to national coordinator (end of January of each year)
  - Includes a first review at national level
- Forwarded for independent verification and processing
  - By EASA, EUROCONTROL, or the State, depending on the State (see previous slide)
  - Computation of the indicator value: a score (expressed as a percentage) derived from a weighted scoring of the “Maturity level” answers to all questions
- ICAO only receives the indicator values, not the questionnaires themselves. Reporting table:

<table>
<thead>
<tr>
<th>Safety</th>
<th>Effectiveness of Safety Management (EoSM)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>B8</td>
<td>EoSM – overall score at State level</td>
<td></td>
</tr>
<tr>
<td>B9</td>
<td>EoSM – overall score at ANSP level</td>
<td></td>
</tr>
</tbody>
</table>
Level of State Just Culture (JC) (1)

• What is Just Culture?
  – “Just Culture” is an atmosphere of trust in which people are encouraged, even rewarded, for providing essential safety-related information, but in which they are also clear about where the line must be drawn between acceptable and unacceptable behaviour (eg deliberate unsafe acts not tolerated).
    • So it is not the same as a “no-blame culture”.
  – Just Culture supports learning from unsafe acts in order to improve the level of safety awareness
  – Just Culture can be regarded as an enabler, and even indicator of, (a good) Safety Culture.

Level of State Just Culture (JC) (2)

- Indicator based on the annual completion of two questionnaires
  - A State level questionnaire (20 questions)
  - An ANSP level questionnaire (24 questions)
- Questions cover the following topics:
  - Policy and its implementation
  - Legal/Judiciary
  - Occurrence reporting and investigation
- Use of the answers
  - Sole intent is to identify possible obstacles and impediments to the application of the just culture
  - Opportunity to give an indication of possible areas of improvement
Level of State Just Culture (JC) (3)

• Examples of questions
  – Policy and its implementation
    • **ST.P.1** Is there an explicit Just Culture policy, which is endorsed at appropriate State level and made public? (Yes/No)
  – Legal/Judiciary
    • **ST.L.3** Are there provisions in the law affording protection from prosecution to individuals involved in safety events, under the principles of Just Culture? (Yes/No)
  – Occurrence reporting and investigation
    • **ST.O.1** Does the State provide regular statistical feedback to the public based on safety reports received (e.g. annual reports)? (Yes/No)
Level of State Just Culture (JC) (4)

- Questionnaires to be submitted to national coordinator (end of January of each year)
  - Includes a first review at national level
- Forwarded for independent verification and processing
  - By EASA, EUROCONTROL, or the State, depending on the State (see earlier slide)
  - Computation of the indicator value: number of questions answered “Yes” and “No”
- ICAO only receives the indicator values, not the questionnaires themselves
## Safety

### Level of State Just Culture (JC) – State level

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>B10</td>
<td>Number of questions answered</td>
<td></td>
</tr>
<tr>
<td>B11</td>
<td>Number of ‘Justification and remarks’ fields filled in</td>
<td></td>
</tr>
<tr>
<td>B12</td>
<td>Number of questions answered with Yes</td>
<td></td>
</tr>
<tr>
<td>B13</td>
<td>Number of questions answered with No</td>
<td></td>
</tr>
<tr>
<td>B14</td>
<td>Number of areas of improvement identified</td>
<td></td>
</tr>
</tbody>
</table>

### Level of State Just Culture (JC) – ANSP level

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>B15</td>
<td>Number of questions answered</td>
<td></td>
</tr>
<tr>
<td>B16</td>
<td>Number of ‘Justification and remarks’ fields filled in</td>
<td></td>
</tr>
<tr>
<td>B17</td>
<td>Number of questions answered with Yes</td>
<td></td>
</tr>
<tr>
<td>B18</td>
<td>Number of questions answered with No</td>
<td></td>
</tr>
<tr>
<td>B19</td>
<td>Number of areas of improvement identified</td>
<td></td>
</tr>
</tbody>
</table>
Severity Classification (1)

• Objective
  – To motivate States to use a common methodology for the severity assessment of safety occurrences
    • Benefit: harmonise occurrence statistics

• Definition of the indicator
  – The percentage of occurrences for which the common methodology has been applied
    • “RAT methodology” (Risk Assessment Tool)
Severity Classification (2)

- Applied to individual safety occurrence reports:
  - Separation minima infringements
  - Runway incursions
  - ATM-specific technical occurrences
    - Affecting the ability to provide safe ATM services
- Only for severity A and B

<table>
<thead>
<tr>
<th>ESARR 2 Severity</th>
<th>ICAO Doc 4444 AIRPROX Classification</th>
<th>ATM-Specific technical occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident</td>
<td>Accident as per ICAO Annex 13</td>
<td>-</td>
</tr>
<tr>
<td>Serious Incident (A)</td>
<td>AIRPROX CAT A - Risk Of Collision</td>
<td>AA – total inability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A – serious inability</td>
</tr>
<tr>
<td>Major Incident (B)</td>
<td>AIRPROX CAT B - Safety Not Assured</td>
<td>B – partial inability</td>
</tr>
<tr>
<td>Significant Incident (C)</td>
<td>AIRPROX CAT C - No risk Of Collision</td>
<td>C – safe but degraded ATM services</td>
</tr>
<tr>
<td>Not determined (D)</td>
<td>AIRPROX CAT D - Risk Not determined</td>
<td>D – not determined</td>
</tr>
<tr>
<td>No safety effect (E)</td>
<td>-</td>
<td>E – no effect on ATM services</td>
</tr>
</tbody>
</table>
Severity Classification (3)

• Two severity scoring perspectives
  – “ATM ground”
    • Can be produced by ANSPs
  – “ATM airborne”
    • Should be used only in cases where ATC is not responsible for providing separation

• Both perspectives combined:
  – “ATM Overall” classification

• Reporting to ICAO:
  – Only “ATM ground” perspective
## Severity Classification (4)

### Reporting Table

<table>
<thead>
<tr>
<th>Safety</th>
<th>Adoption of a harmonized occurrence severity classification methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Separation minima infringements</strong></td>
</tr>
<tr>
<td>B20</td>
<td>Number of separation minima infringements</td>
</tr>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>B21</td>
<td>Number of separation minima infringements for which the severity classification ATM Ground has been determined using the RAT methodology</td>
</tr>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>B22</td>
<td>Percentage of separation minima infringements for which the severity classification ATM Ground has been determined using the RAT methodology (=B21/B20)</td>
</tr>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>B23</td>
<td>Number of separation minima infringements for which the severity classification ATM Ground has been determined using the RAT methodology, and which have been classified as Serious Incident (severity A)</td>
</tr>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>B24</td>
<td>Number of separation minima infringements for which the severity classification ATM Ground has been determined using the RAT methodology, and which have been classified as Major Incident (severity B)</td>
</tr>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Runway incursions</td>
<td>Idem</td>
</tr>
<tr>
<td>ATM-specific technical occurrences</td>
<td>Idem</td>
</tr>
</tbody>
</table>
Existing Data (safety KPA)


### SAFETY

**Separation Minima Infringements (SMI)**

(2012 data to be available in Sep./Nov. 2013).

**Runway Incursions (RI)**

(2012 data to be available in Sep./Nov. 2013).

### ATM Specific Technical Events (ATM)

(2012 data to be available in Sep./Nov. 2013).

### Effectiveness of safety management (E0SM) (Meta data)

**Effectiveness of Safety Management (State level)**

The results at ANSP level can be found at: [E0SM 2012](http://prudata.webfactional.com/Dashboard/eur_view_2012.html)

### Reporting of Just Culture (Meta data)

There are no results at European wide level.

The results at State and ANSP level can be found at: [Just Culture 2012](http://prudata.webfactional.com/Dashboard/eur_view_2012.html)

Source: EASA

Please note that the total number of “NO” answers may not reflect an absence of Just Culture.

### RAT methodology application (Meta data)

EU-wide average percentage of Separation Minima Infringements (SMI), Runway Incursions (RI), and ATM Specific Technical Events (ATM) for which severity was assessed with RAT methodology.

Preliminary results - final results to be available in Oct. 2013.

<table>
<thead>
<tr>
<th>EU</th>
<th>SMI (ground)</th>
<th>SMI (overall)</th>
<th>RI (ground)</th>
<th>RI (overall)</th>
<th>ATM tech. events (overall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>21%</td>
<td>31%</td>
<td>15%</td>
<td>23%</td>
<td>40%</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Safety KPA – Conclusions

• Three Indicators
  – These are leading indicators
    • measuring precursors to improved safety
  – And not lagging indicators
    • which are directly related to safety outcome

• Complex subject, but detailed guidance material is available
  – Fully described in EASA documentation
  – ICAO guidance material summarises and explains the EASA documentation

• Note:
  – Effectiveness of Safety Management (EoSM) for States
    • Highly correlated with the ICAO LEI (Lack of Effective Implementation) indicator
    • However, EoSM for ANSPs has no correspondence in existing ICAO safety indicators
Safety KPA – Discussion

• Do you see room for improvement of safety in your State?
  – Reduction of separation minima infringements
  – Reduction of runway incursions
  – Reduction of ATM-specific technical occurrences affecting the ability to provide safe ATM services
  – Other

• If yes, how do you make improvements?

• Current data collection and National indicators
  – Do you currently record safety related data?
  – Do you compute National safety indicators?

• Your views
  – Would you consider the proposed indicators as useful for your State?
  – Would you consider it useful if the proposed indicators would be reported for all States in the EUR Region?
  – What support would you expect or need to participate in this EANPG reporting process?