Performance Review Body
designed by
the European Commission

EUROCONTROL

PRB Annual monitoring report 2013
Volume 4 - Safety

Volume 4 – Safety

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1   Review Process of Performance Monitoring Reports

This Chapter describes the process used by the Performance Review Body (PRB), supported by the Performance Review Unit (PRU), and the European Aviation Safety Agency (EASA) to assess and review the National/FAB Performance Monitoring Reports (PMRs) from a safety perspective, as well as to provide feedback on safety performance, measured by Safety Performance Indicators (SPIs).

1.1   Background

The performance Regulations (EU) No 690/2010 and No 390/2013 establish a new mechanism to improve safety performance of national supervisory authorities (NSAs), air navigation services providers (ANSPs) and network functions through target setting and continuous monitoring at national/FAB and Union-wide level. Currently the Regulation defines a number of SPIs, which shall be monitored at both European and national/FAB levels and used for the safety performance assessment during the first Reference Period (RP1).

These are:

- the Effectiveness of Safety Management (EoSM) for ANSPs and NSAs;

- the 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 Air Traffic Control Centres and airports; and

- the reporting by Member States and their air navigation service providers the level of presence and corresponding level of absence of Just Culture (JC).

The Member States are required to submit their performance monitoring reports to the European Commission (EC) by 1st of June each year. During the summer, these reports, together with results of SPIs monitoring for 2012 are assessed by the PRB and EASA. The Member States are required to submit/populate EoSM and JC questionnaire by 1st February each year, while information on the RAT methodology application should be submitted by 21st April.

The output of this safety review together with identified risks will be submitted to the EC and shared within EASA.

1.2   Objectives of the PMR Safety Review

The review of PMRs in relation with the safety Key Performance Area (KPA) consists of an assessment of the safety aspects of the performance reports, in particular the reporting on performance indicators.

The general objective is to review and report on achieved safety performance of the NSAs and ANSPs to ensure an effective monitoring of the safety performance of ANS/ATM.

The review focuses on two distinct areas: those elements, which are addressed in the safety–related sections of the Performance Reports and those elements received through measurement of SPIs reported to and collected by EASA in February 2014.

In addition, this review of the PMRs includes adequately substantiated comments and recommendations to be followed by States.

1.3   General Organisation of the Review Process

The assessment of the PMRs is conducted by the PRU, in coordination with EASA. Verification activities were performed by EASA for EoSM and JC, whilst application of the RAT methodology was verified by the EUROCONTROL Directorate Pan-European Single Sky - Support to States and Regional Initiatives unit (DPS/SSR).

1.4   Verification Activities

1.4.1   Verification process of Effectiveness of Safety Management

BACKGROUND

The EoSM SPI measures, at a State level, the capability of States to manage the State Safety Programme (SSP) and, at a service provision level, the service provider's capability to manage an effective Safety Management System (SMS). The starting point was the ICAO State Safety Programme (SSP) and SMS framework while additional components and elements have been added to better reflect the European context.

The EoSM indicator is measured by calculating scores based on the verified responses to questionnaires respectively completed by the State/competent authorities (normally the NSA) and the ANSPs. This is done in accordance with Acceptable Means of Compliance (AMC) and Guidance Material (GM) for the Implementation and Measurement of Safety Key Performance Indicators (EASA Decision 2013/032/R).

VERIFICATION

The results of the States' EoSM questionnaires were cross-checked with the results of the EASA standardisation inspections ("thorough verification" - TV), or for those States not inspected yet through desktop reviews complemented with requests for clarification or additional information from the NSA as required ("light verification" - LV).

The coordination between EASA and the competent authority/authorities is done through the National Coordinator appointed by the State in accordance with Article 6 of Commission Regulation (EC) No 736/2006. The National Coordinator is responsible for coordination within the State authorities and for coordination with the ANSPs in order to provide EASA with the responses to the questionnaires (both competent authority and ANSP, aggregated where required).

The verification of questionnaires was conducted via two possible methods[1]. The "thorough verification" was used for States where a standardisation inspection has been conducted and more than one month has elapsed between EASA's Findings Classification Committee (FCC) and the start of the verification process. Where this is not the case, "light verification" was used, involving comparing the questionnaire responses with other sources of information and assessing the responses for internal consistency.

In the future, it is anticipated that light verification will be phased out as EASA conducts more standardisation inspections of the Competent Authorities.

Light verification was complemented by the review of other documents produced by States (e.g. National Performance Plans for RP1) and external sources (e.g. audit reports, Single European Sky Implementation reports or State Safety Plans) in order to improve the quality of the review.

CHANGES COMPARED TO THE PREVIOUS YEAR

The following changes have been implemented with the aim of improving the verification mechanism:

- Feedback to States: The EASA's opinion is that the SKPI RP1 reporting system would be improved and would be more transparent by providing feedback to the States on the previous year filled questionnaires. Therefore, as of the 2nd year of the RP1, the States that have been thoroughly verified will receive feedback at the end of their verification. The feedback would be sent to the SKPI RP1 Focal Point, who may coincide to be the National Coordinator for the ATM/ANS Standardisation visit or not. It is up to the State to establish the necessary internal mechanisms to link the EoSM replies assessed as "overrated" with the non-conformities identified in the course of the audit. By using this feedback mechanism, EASA is confident that the States will gain maturity on safety aspects. This mechanism is to be implemented this year.

- Updated methodology: The percentage of the questions to be reviewed has increased to the totality of the questionnaire (except the scores A/B).

1.4.2 Verification process for Just Culture

BACKGROUND

The JC SPI aims at measuring the level of presence and corresponding level of absence of just culture at State and at ANSP level. The main objective of the indicator and of the questionnaires is to identify possible obstacles and impediments to the application of JC at State and ANSP level. In that sense, the questions were elaborated taking into account elements specific to the State and to the ANSP.

The questionnaires for both the State and the ANSP level were divided into areas where JC elements are relevant, with an additional sub-division into key elements for each area. The three main areas are: policy and its implementation, legal/judiciary, and occurrence reporting and investigation.

For Year 2 of RP1, the questions in the State/ANSP questionnaires remained unchanged. The modifications to the AMC/GM introduced by Decision 2013/032/R of the Executive Director of EASA will be applicable as of the 3rd year of RP1 (monitoring 2014 performance). However, the clarifications provided regarding the justification to be provided could be (and were) used by States and ANSPs as guidance. As for last year, the drafted questions must be answered by "yes" or "no" and States and ANSPs were again encouraged to provide additional information and justification for their responses. This is in particular (but not only) important when answering "no" in their respective questionnaire (in the column "Justification and remarks") as it can provide elements to better describe the actual level of presence or corresponding level of absence of JC in a given State/ANSP.

In addition, it should be again highlighted that although the AMC/GM indicates that a positive reply gives an indication of a just culture context, while a negative reply indicates potential deficit/obstacles in just culture implementation, the key element which allows for an effective measurement of the level of just culture is not in the counting of the "yes" and "no" but in the explanation and justification provided by the State and the ANSP.

VERIFICATION

The process for the verification of the information provided by States and ANSPs relating to the SPI Just Culture is similar to the one used for the verification of RP1 – Year 1 data.

The State/ANSP responses were fully reviewed, similarly to last year, as a sampling of key questions would not provide sufficient information for the assessment of the level of JC present in the relevant State/ANSP.

In order to build on the verification of last year data, a gap analysis was made to identify the changes and developments from Year 1 to Year 2. This provides a valuable indication of the progress made and direction taken by the States and the ANSPs in the area of JC. This gap analysis was included in the summary of the responses presented in individual "fiches" for each State and ANSP under the State's responsibility.

Lastly, it is generally recognised that the Performance Scheme Regulation is currently the only vehicle in place to gather and circulate just culture information within the EU. Following last year's exercise, it was noted that the States and ANSPs had provided a significant amount of information relating to their approach to JC, but that the information published had been limited to the number of YES/NO answers in order to preserve confidentiality of responses. However, this approach did not allow drawing lessons learnt from the assessment of JC SPI. As a result, the PRB decided that in the interest of transparency and in order to share results of the assessment, EASA would group similar States/ANSPs in clusters of questions. These clusters would allow for the publication of feedback on the level of JC in States and ANSPs and possible identification of areas to improve.

For the assessment of the JC information for RP1 - Year 2, a clustering approach was used in order to highlight common features between national approaches to JC, at State and at ANSP level (see more details below).

CHANGES COMPARED TO THE PREVIOUS YEAR

This year clustering approach was applied to the analysis of JC responses. **Cluster analysis** or **clustering** is a statistical classification technique where cases, data or objects (events, people, things, etc.) are sub-divided into groups (clusters) so that the items in a cluster are very similar (but not identical) to one another and different from the items in other clusters.

As indicated above, the intention of this exercise is to highlight common features between national approaches to JC, be it at State (NSA) level or ANSP level. The objective of this exercise is to identify which of these common features is generally adopted by States and ANSPs and can be considered as good or even best practice in the area of JC, within the context of the Performance Scheme.

The aim therefore is not to derive conclusions on whether a specific national approach is better or worse than another but to draw some indication of what the current practice as described in the responses to the questionnaires reveal.

The clusters analysis follows the structure of the questionnaire, namely area and sub-divisions: Policy and its implementation (incl. policy elements/definition of roles and responsibilities/training), Legal/Judiciary (incl. primary legislation/judicial procedure and specific aviation legislation/formal agreement), and Occurrence reporting and investigation.

Three main categories have been identified:

- "high-density" clusters – which are the questions where a majority of States/ANSPs have provided a positive answer (i.e. over 19 positive State responses and over 25 positive ANSP responses). These are deemed to indicate a certain consensus on the elements identified in the JC questionnaire;

- "medium-density" cluster – which are the questions for which the States/ANSPs are divided on the approach to be followed (i.e. between 10-19 positive State responses and between 12-25 positive ANSP responses). These show a more diverse opinion on certain elements in the JC questionnaire; and

- "low-density" clusters – which are the questions for which there is no clear agreement or very different approaches (i.e. less than 10 positive State responses and less than 12 positive ANSP responses).

1.4.3 Verification of RAT methodology application

BACKGROUND

The application of the severity classification using the RAT methodology is measured on the individual occurrence level as "YES/NO" value of application of the RAT methodology for severity classifications of all Separation Minima Infringements (SMIs), Runway Incursions (RIs) and ATM Specific Occurrences (ATM-S) at ATS Centres and airports.

The indicator is expressed in terms of the percentage (%) of occurrences for which severity has been assessed using the RAT methodology in relation with the respective scope of the RAT derived severity assessment: ATM Ground and ATM Overall.

The EASA AMC 8 recommends that States use existing mechanisms for reporting the application of the Risk Analysis Tool (RAT) methodology application (e.g. . Annual Summary Template (AST) or the European Central Repository (ECR)). However, currently the Annual Summary Template (AST) is the only reporting mechanism which has been specifically adapted to report the application of the severity part of the RAT methodology.

Despite of the changes made to the European Co-ordination centre for Accident and Incident Reporting Systems (ECCAIRS) database to allow the reporting of the RAT methodology, the current status of developments still does not facilitate the reporting of the application of the methodology and its associated scope. Note that a detailed change proposal is being prepared in cooperation with EASA and EC/JRC to enhance the monitoring of RAT methodology application in ECCAIRS.

VERIFICATION

As the AST reporting mechanism is the main reporting mechanism available for reporting of RAT methodology application, the EUROCONTROL DPS/SSR has performed the following activities in order to measure performance of this SPI during 2013:

- Collected and processed the RAT derived severity score for each reported occurrence via the AST mechanism;

- Validated the correctness of the processed data with the national AST Focal Points to ensure the accuracy of the aggregated values;

- Advised the AST Focal Points to lease at national level with the entities in charge with the preparation of the PMRs to facilitate the consolidated RAT reporting by the Member State;

- In case differences are still identified between the RAT score (reported via the AST mechanism) and the PMRs, actions were taken with the AST Focal Points to address the issue.

It is to be noted that Estonia is not a EUROCONTROL Member State and is hence not obliged to submit an AST report. However, the RAT score was collected and verified for consistency with the ANSP Safety Manager who is also the representative of Estonia in the RAT User Group.

1.5 Union-wide safety occurrences analysis

The safety occurrences (lagging performance measurements) were analysed using the EASA worldwide safety occurrence database in addition to those of EUROCONTROL. This additional database brings added value to the performance review of safety, as it gives a better understanding of ANS safety related risks and it enhances review of safety data quality.

Currently, the best choice for European safety performance monitoring is to rely on the EASA database for the analysis of accidents and serious incidents and to rely on EUROCONTROL AST database for the analysis of ATM incidents. The quality and completeness of the three databases will continue to be monitored and this choice might change in the future. The PRB would like to thank EASA and EUROCONTROL DPS/SSR for their support in this work, and especially EASA for providing access to their safety occurrence database.

In summary, the review of ANS-related accidents and incidents is based on:

- Accident and serious incidents from the EASA database[2] (2003 - 2013); and

- Incidents data reported to EUROCONTROL via the AST mechanism (2003 - 2013 preliminary).

Note that final investigation reports for some accidents and incidents may be delayed more than two years, particularly when the investigation is complex. This might have an impact on the update of some graphics in future publications. In addition, the scope of the review may be changed in future reports depending on the added value for reviewing the ANS safety performance and on the improvement in data granularity and data quality.

The scope of the review of this chapter is indicated in Table 1.

	Analysis scope	Type	Category	Weight
Accident (EASA DB)	ANS related[3] ANS contribution[4]	Commercial Air Transport (CAT) General Aviation (GA)	Fixed wing Helicopters	>2250 Kg
Serious Incidents (EASA DB)	ANS related ANS contribution	CAT	Fixed wing	>2250 Kg
Incidents (EUROCONTROL AST)	ATM related	All	All	No limitation

Table 1: Scope of the review of this chapter

2 Union-wide Performance Report

This Chapter describes the Union-wide review of 2013 safety performance measured by both leading (EoSM, RAT methodology application and JC) and lagging indicators (occurrences statistics) for Member States subject to the Performance Scheme.

2.1 Effectiveness of Safety Management

All 29 States and 37 ANSPs filled in the self-assessment questionnaires used for the measurement of the EoSM SPI in accordance with Acceptable Means of Compliance (AMC) and Guidance Material (GM) for the Implementation and Measurement of Safety Key Performance Indicators (EASA Decision 2011/017R). In accordance with the AMC, the responses of the States have been verified by EASA while the responses of the ANSPs have been verified by the State Competent authorities.

Section 2.1.1 gives an analysis of the EoSM Scores provided by the States and ANSPs (self-assessment). Section 2.1.2 explains the outcomes of the verification performed by EASA ("light" and "thorough"). Results of this verification exercise on State level can be found in Volume 2.

Figure 1 shows the average effectiveness scores by the States and ANSP in 2013 and Figure 2 shows the number of times States and ANSPs achieved each effectiveness level (self-assessment). Figure 1 and Figure 2 also show the comparison of the 2012 and 2013 results for States and ANSPs respectively (self-assessment).

The minimum effectiveness score, by the individual States in 2013, is 35 with 21% of the States scoring below 50. This is an increase compared to the 2012 minimum effectiveness score of 29 with 41% of the States scoring below 50. The maximum effectiveness score at State level in 2013 is 85 - the same as in 2012.

The minimum effectiveness score, by the individual ANSPs in 2013, is 41 with 5% of the ANSPs scoring below 50. There is a slight decrease compared to the 2012 results when the minimum effectiveness score was 42 with 8% scoring below 50. The maximum effectiveness score at ANSP level has increased from 89 in 2012 to 90 in 2013.
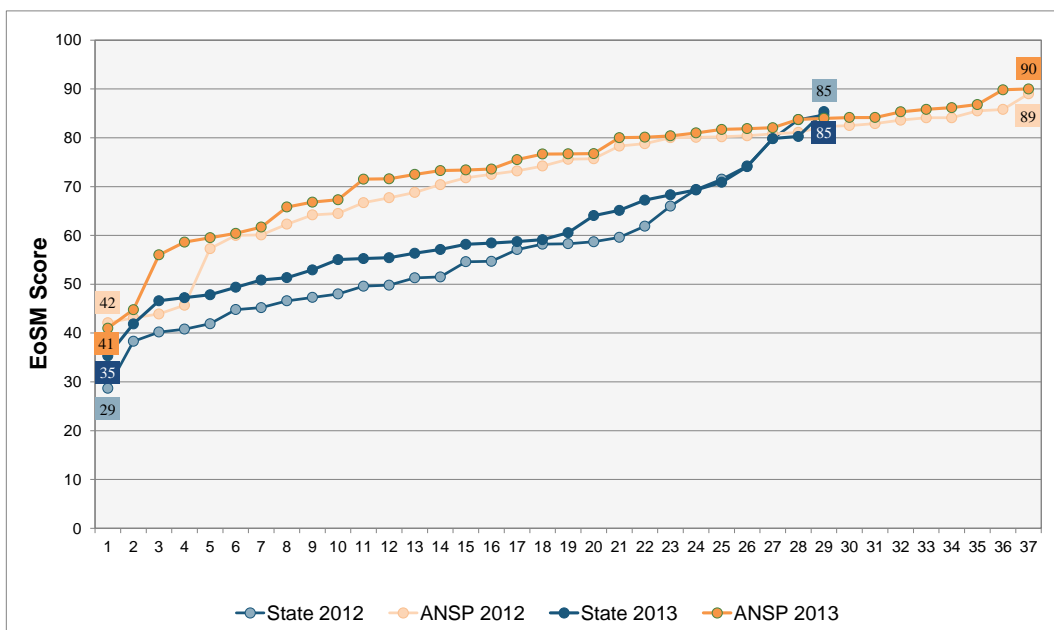
Figure 1: 2013 Effectiveness of Safety Management for States and ANSPs
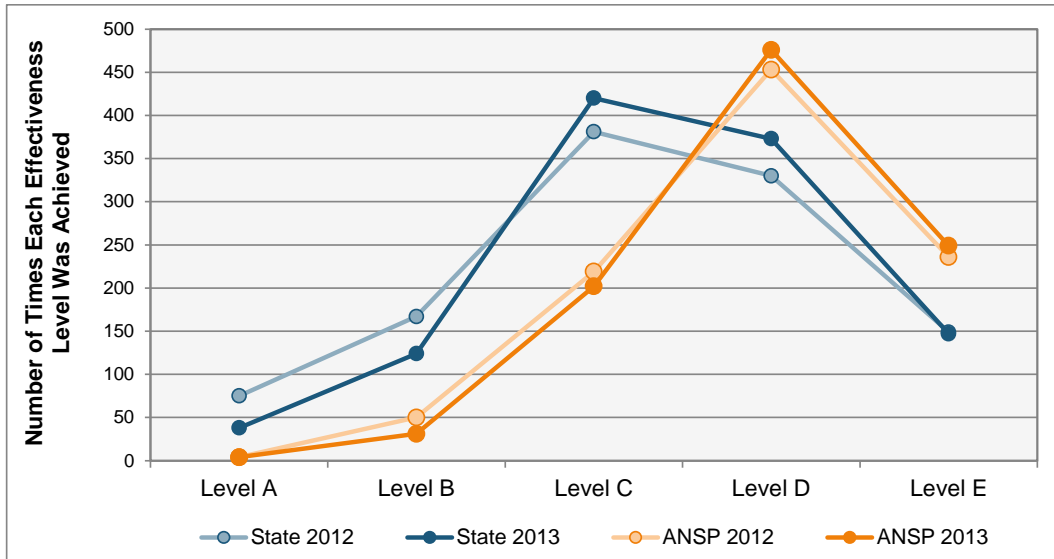
Figure 2: EoSM total maturity levels achieved for States and ANSPs

The increase of the minimum effectiveness score for both States and ANSPs is a very good outcome and shows continuous improvement. There is a decrease of the maximum scores for both the States and ANSPs for some Management Objectives (MOs). This trend could be explained with the more realistic view taken by the States and ANSPs of where they actually are in regard to meeting the individual MOs, better awareness of the requirements and understanding that all lower levels must be met before moving to the higher level. Similar trend could be observed in Figure 2, which shows that the number of times States and ANSPs achieved each effectiveness level (self-assessment) decrease in some cases.

EASA audits only reaffirm the message that establishing strong safety oversight systems is a necessary first step to ensure the successful transition to improved safety management. Hence, safety strategies must have the ability to consider the varying maturity levels of State's safety oversight systems. States that have not yet implemented the eight critical elements of a safety oversight system effectively must first resolve these deficiencies and develop a sound foundation upon which to build their State Safety Programmes (SSPs). Only those States having mature safety oversight systems will be able to realize the benefits associated with safety management principles, and achieve further improvements in safety performance overall.

As shown in Figure 3 and Figure 4, Component 1 (*Safety Policy and Objectives*) is still the strongest area for the States while, this year, Component 2 (*Safety Risk Management*) is the strongest area for the ANSPs. Component 5 (*Safety Culture*) is still the weakest area at both State and ANSP level. Note that these results are based on self-assessment.
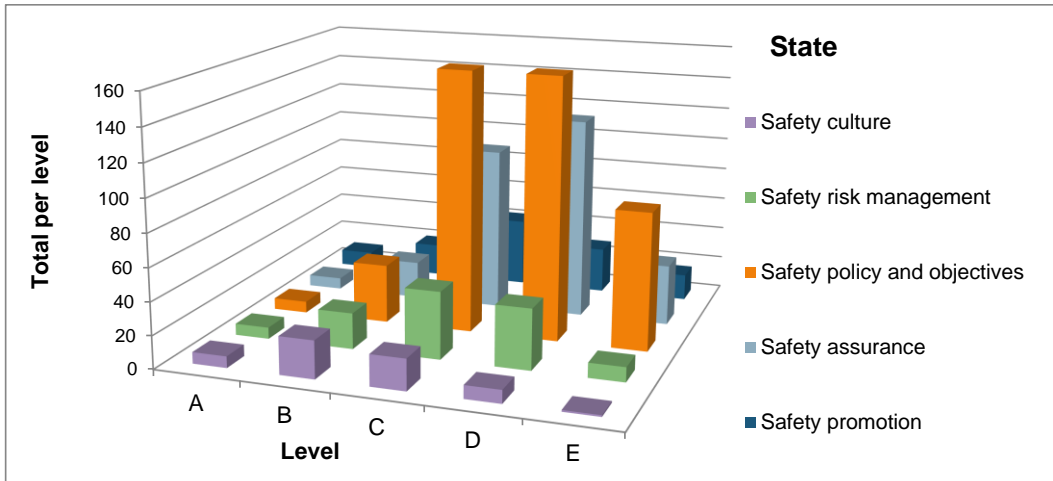
Figure 3: EoSM Maturity Levels achieved for States
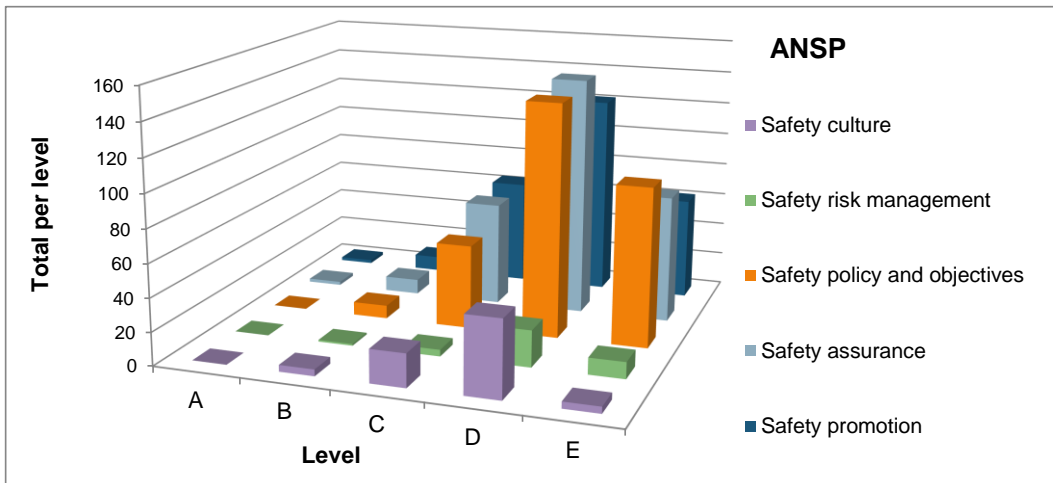
Figure 4: EoSM Maturity Levels achieved for ANSPs

Maturity Levels are defined as (see EASA AMC for detailed information):

- Level A which is defined as "Initiating" — processes are usually ad hoc and chaotic;

- Level B which is defined as "Planning/Initial Implementation" — activities, processes and services are managed;

- Level C which is defined as "Implementing" — defined and standard processes are used for managing;

- Level D which is defined as "Managing & Measuring" — objectives are used to manage processes and performance is measured;

- Level E which is defined as "Continuous Improvement" — continuous improvement of processes and process performance.

2.1.1   State Level

Figure 5 shows 2013 EoSM scores for all Member States. Further sections provide more detailed analysis of each EoSM Component, with an emphasis on the worst and best achieved Management Objective (MO) within each.

Note that analysis in this section is based on State provided scores (self-assessment).
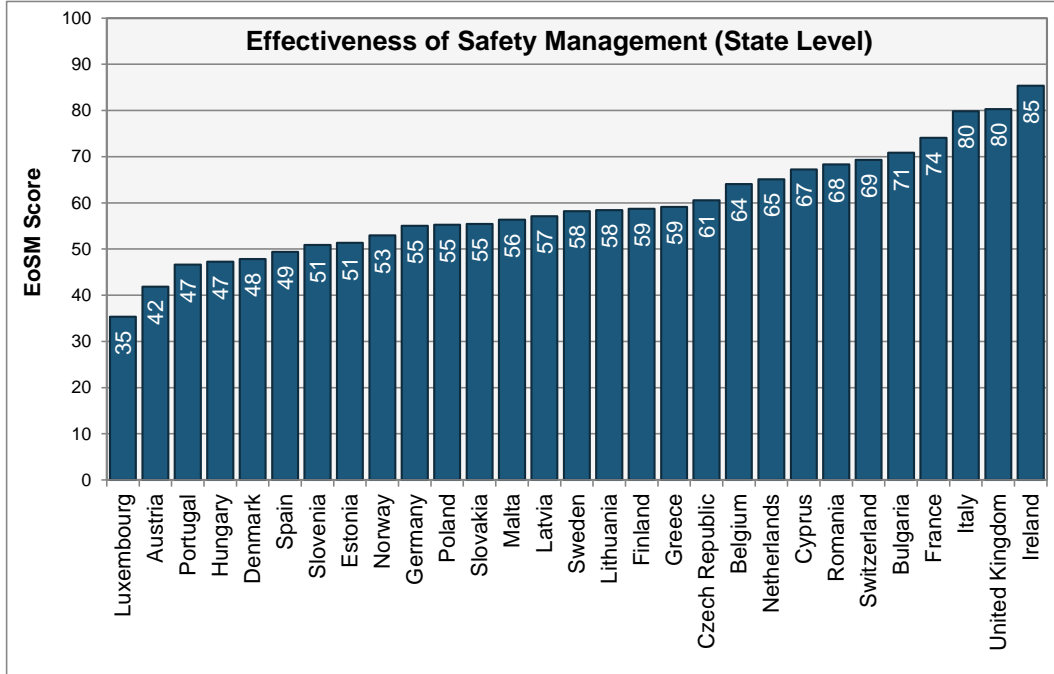
Figure 5: 2013 Effectiveness of Safety Management (State level)

IMPLEMENTATION LEVEL SUMMARY FOR COMPONENT 1 - STATE SAFETY POLICY AND OBJECTIVES

The minimum effectiveness score achieved by the States for Component 1 is 32. This is a significant increase compared to 2012 when it was 19. The maximum effectiveness score has decreased by 1 point to 91 (92 in 2012). The average score of 65 is the same as in 2012.

Figure 6 shows the number of times States achieved each effectiveness level (left) and the effectiveness scores (right) in response to the MOs of Component 1 in 2013 and comparison with the results of 2012.
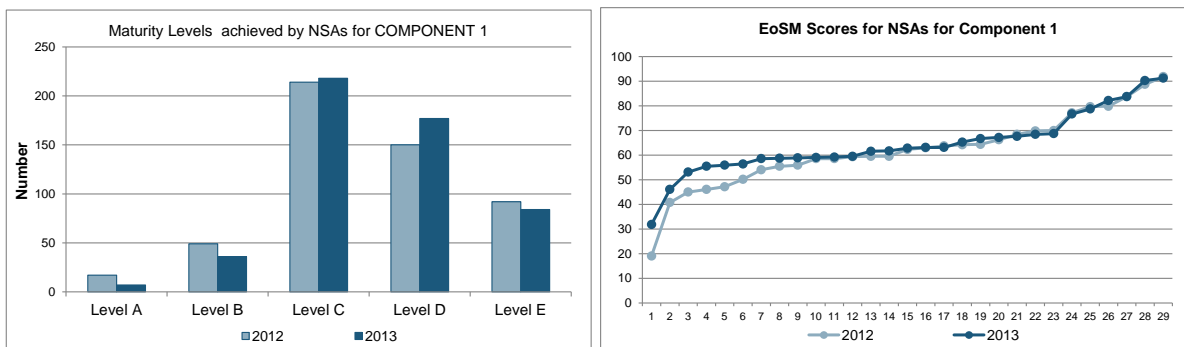
Figure 6: State safety policy and objectives

Management objective 1.3a - Establish and maintain the independence of the civil aviation safety investigation authorities, including necessary resources.

MO 1.3a is still the strongest area for Component 1 with an average effectiveness score of 79 (77 in 2012).

- All States have established an independent and effective entity for safety occurrence investigation (Level C);

- Four (4) more States assess that the entity is recognised by the national civil aviation community for providing added value for safety (Level D);

- 10 instead of 11 compared to 2012 have also established a mechanism for continuous improvement of the safety occurrence investigation (Level E).

Management objective 1.5a - Ensure adequate management of the internal interfaces within the NSA.

MO 1.5a is still the weakest area for Component 1 with an average effectiveness score of 48 (45 in 2012).

- One State (2 in 2012) still indicates that the internal safety interfaces are managed on an informal basis (Level A);

- Four (4) States (7 in 2012) report the process for formalising them is still at the initiating phase (Levels B);

- Four (4) more States report that all safety related internal interfaces are managed in a formal manner with the necessary documentation in place which brings the total number to 24 States (Level C);

- As in 2012, five (5) States report that the safety interfaces are managed and measured to assess their effectiveness (Level D);

- One State (2 in 2012) is conducting surveys on a regular basis to identify weaknesses in the processes (Level E);

- Three (3) States, two (2) less than in 2012, are applying ad-hoc integration of the internal management systems (Level A);

- As in 2012, eight (8) States are still at the initiating phase of the alignment of internal management systems and have defined formal plans for further alignment.

- Most of the States are at the stage of on-going integration of the internal management systems;

- Five (5) States (one less than in 2012) have implemented fully integrated management systems across their organisation (Level D);

- Three (3) States, the same number as in 2012, are applying a review process to ensure continuous improvement (Level E).

IMPLEMENTATION LEVEL SUMMARY FOR COMPONENT 2 - SAFETY RISK MANAGEMENT

The minimum effectiveness score achieved by the States for Component 2 is 29. There is an increase compared to 2012 when the minimum average score was 21. The maximum effectiveness score of 92 is the same as in 2012. The average effectiveness score has increased by 5 points to 60 (55 in 2012). Figure 7 shows the number of times States achieved each effectiveness level within this Component (left) and shows the effectiveness scores in response to the management objectives of Component 2 in 2013 and comparison with the results of 2012.
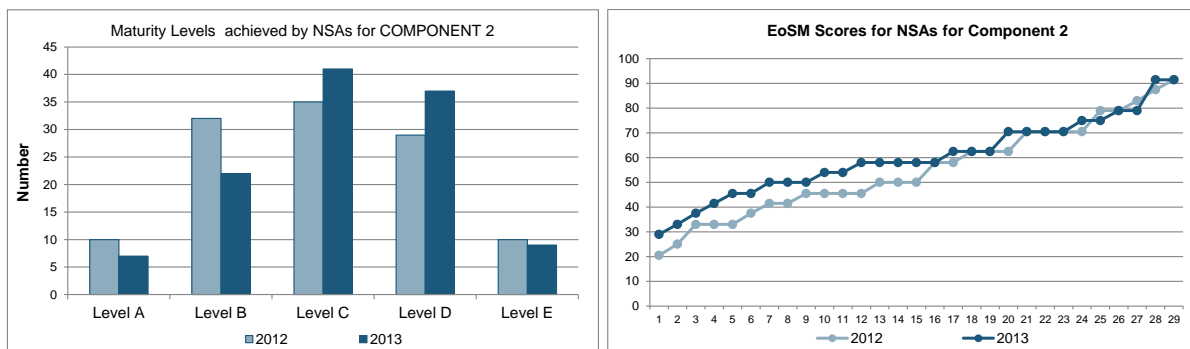
Figure 7: State Safety risk management

Management Objective 2.1 - Establish control which governs how service provider's safety management systems (SMS) will identify hazards and manage safety risks.

MO 2.1 is still the strongest area for Component 2 with average effectiveness score of 72 (68 in 2012).

- One State has prepared a formal procedure for continuous oversight of the risk assessment process of the service provider but it has not been approved or implemented yet (Level B);

- 28 States, one more since 2012, reported that formal procedures for continuous oversight of the risk assessment processes of service providers have been implemented (Level C);

- 21 States, two (2) more since 2012, systematically apply oversight procedures (Level D);

- As in 2012, six (6) States indicate that oversight procedures are constantly reviewed for continuous improvement.

Management Objective 2.2 - Agree on safety performance of an individual, national or FAB service provider.

MO 2.2 is again the weakest area for Component 2 with an average effectiveness score of 48 (43 in 2012).

- As in 2012, all States but one have a plan in place to establish and formalise acceptable safety levels for the ATM system and some implementation activities have been initiated (Level B);

- Three (3) States less compared to 2012 are reporting that formalised acceptable safety levels have been established through the implementation of the State Safety Programme (Level C);

- Four (4) States, one less since 2012, carry out an evaluation of the acceptable safety levels on a regular basis (Level D);

- One (1) State (two (2) in 2012) indicates that acceptable safety levels are linked to potential safety-critical hazards and events through the State Safety Plan (Level E);

- Three (3) States, one (1) less than 2012, are still carrying ad-hoc monitoring and limited assessment and determination with the regulatory requirements (Level A);

- Five (5) States, three (3) less than 2012, indicate that implementation activities of the approved plans are just commencing (Level B);

- 21 States, three (3) more than in 2012, report that a formalised and effective system for safety level monitoring and assessment is in place (Level C);

- Seven (7) States (five (5) in 2012) are using validated safety targets and thresholds and issuing safety recommendations (Level D);

- There are no States indicating that the results of the monitoring and assessment of acceptable safety levels are used for improvement of the European regulatory benchmarking and oversight aspects of ATM or that there are well established internal and external benchmarking activities (Level E);

- Three (3) States, one less than 2012, consider safety performance-related information confidential (Level A);

- Three (3) States (six (6) in 2012) provide a limited amount of information to the public (Level B);

- 23 States, four (4) more compared to 2012, report that the appropriate ATM safety-related information is made available to the public (Level C);

- Five (5) more States compared to 2012 are performing systematic review (Level D);

- As in 2012, two (2) States report that a feedback process has been implemented (Level E).

IMPLEMENTATION LEVEL SUMMARY FOR COMPONENT 3 – SAFETY ASSURANCE

The minimum effectiveness score achieved by the States for Component 3 has increased to 42 (from 39 in 2012). The maximum effectiveness score of 86 shows a slight decrease (from 89 in 2012). However, the average effectiveness score has increased from 61 in 2012 to 64 in 2013. Figure 8 shows the number of times States achieved each effectiveness level (left) and the effectiveness scores in response to the MOs of Component 3 in 2013 and comparison with the results of 2012.
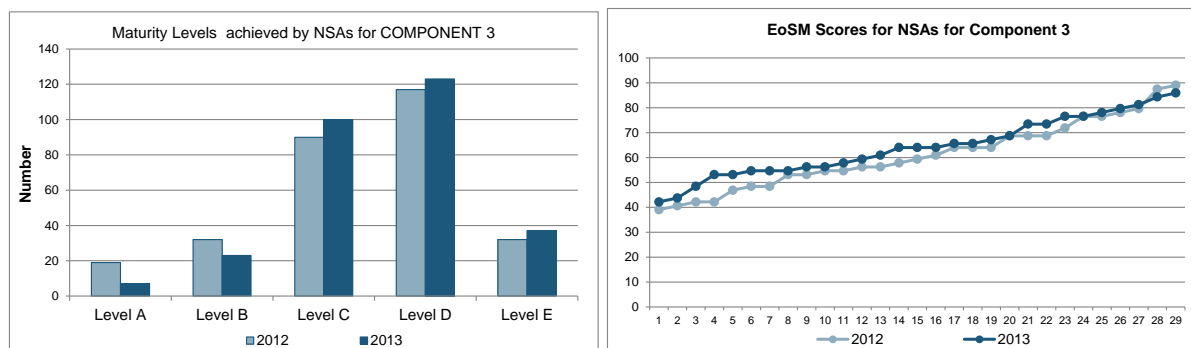
Figure 8: State Safety Assurance

Management Objective 3.1a - Attribution of power to the NSA responsible for safety oversight of air navigation service providers.

MO 3.1a is still the strongest area for Component 3 with an average effectiveness score of 83 (80 in 2012). This is again the strongest area of the whole EoSM KPI (State Level).

- As in 2012 all States report that the legislation nominating the competent authority/NSA as responsible for safety oversight of the ANSP is well established (Level C);

- There is also no change in the number of States (i.e. 24, same as 2012) indicating that they apply systematically the procedures for safety oversight and have introduced risk-based safety oversight procedures (Level D);

- Three (3) more States have reported that they are reviewing the safety oversight procedures to ensure continuous improvement (Level E).

Management Objective 3.3 - Establishment of procedures to prioritise inspections, audits and surveys towards the areas of greater safety concern or need or in accordance with the identified safety risk.

MO 3.3 is again the weakest area for Component 3 with average effectiveness score of 47 (same as 2012).

- One (1) State (two (2) in 2012) reports that inspections are conducted on ad-hoc basis when particular safety issues have been raised (Level A);

- Eight (8) States, one (1) less than 2012, indicate that the procedures are not yet formalised although there is a plan in place to do so (Level B);

- 20 States, two (2) more than 2012, have formal procedures for planning and prioritization of inspections, audits and surveys towards the areas of greater safety concern (Level C);

- Five (5) States, four (4) less than 2012, report that the procedures are applied systematically and constantly reviewed (level D);

- One (1) State (none in 2012) reports that there is continuous improvement of the procedure and means of prioritizing of inspections, audits and surveys towards areas of greater safety concerns (Level E).

IMPLEMENTATION LEVEL SUMMARY FOR COMPONENT 4 - SAFETY PROMOTION

The minimum 19 and maximum 88 effectiveness score achieved by the States for Component 4 are the same as 2012. The average score of 54 has increased from 49 in 2012.

Figure 9 shows the number of times States achieved each effectiveness level (left) and shows the effectiveness scores in response to the MOs of Component 4 in 2013 and comparison with the results of 2012.
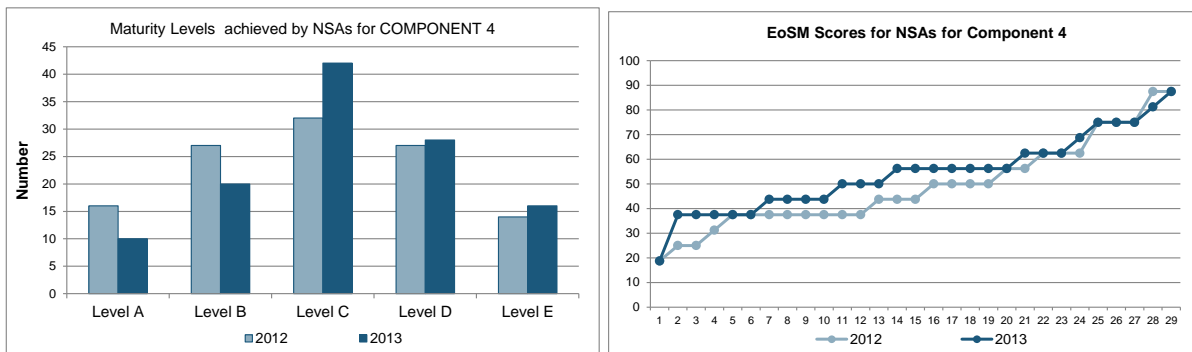

Figure 9: State Safety Promotion

Management Objective 4.2a - Education/training of ANSP personnel and air traffic controllers (ATCO) training organisations on applicable legislative and regulatory framework.

MO 4.2a is again the strongest area for Component 4 with average effectiveness score of 78 (76 in 2012).

- All 27 States (26 in 2012) have implemented a formal procedure for systematic oversight of the ANSP personnel training of both training programmes and training content with respect to the legislation/regulation (Level C);

- 22 States, same as 2012, indicate that the procedure is systematically applied (Level D);

- 11 States, two (2) more compared to 2012, report that they are performing a continuous review (Level E).

Management Objective 4.2b - Promotion of awareness of safety information and communication and dissemination of safety-related information with external stakeholders.

MO 4.1b and 4.2b are the weakest areas for Component 4 with average effectiveness score of 39 (32 in 2012).

- Seven (7) States, five (5) less than 2012, indicate that information is gathered on ad hoc basis (Level A);

- Five (5) States (six (6) in 2012) report that the implementation of information gathering mechanism is at planning or initial implementation level (Level B);

- There is a significant increase in the number of States (17, compared to 8 in 2012) reporting that a robust and effective mechanism is in place for the collection, evaluation and dissemination of best practices and lessons learnt with a few performing periodical reviews (Level C);

- Six (6) States (five (5) in 2012) report that the information gathering mechanism is periodically reviewed (Level D);

- There are no States (only one (1) in 2012) indicating that there is a systematic process in place to proactively review and improve the information gathering mechanism (Level E);

- Three (3) States, one (1) less than 2012, report that they share best practices and safety lessons with other parties on ad-hoc basis (Level A);

- 13 States, four (4) less than 2012, are planning to develop a network to enable this sharing and have started implementation activities (Level B);

- The number of States reporting that national policy has been published with regard to sharing of safety-related best practices and lessons learnt with other parties and that a document process is in place to support its implementation has increased to 13, which is four (4) more than in 2012 (Level C);

- As in 2012, four (4) States indicate that best practices and safety lessons learnt are systematically shared internally, regionally, nationally, and with international bodies with the aim of establishing remedial actions, as appropriate (Level D);

- Two (2) States (same as 2012) report that the process is reviewed regularly and incorporated within the competent authority at all levels with the aim of continuous improvement (Level E).

IMPLEMENTATION LEVEL SUMMARY FOR COMPONENT 5 - SAFETY CULTURE

The effectiveness score achieved by the States for Component 5 ranges again from a minimum of 0 to a maximum of 63 as in 2012, with an average score of 38 (31 in 2012). Figure 10 shows the number of times States achieved each effectiveness level (left) the effectiveness scores in response to MOs of Component 5 in 2013 and comparison with the results of 2012.
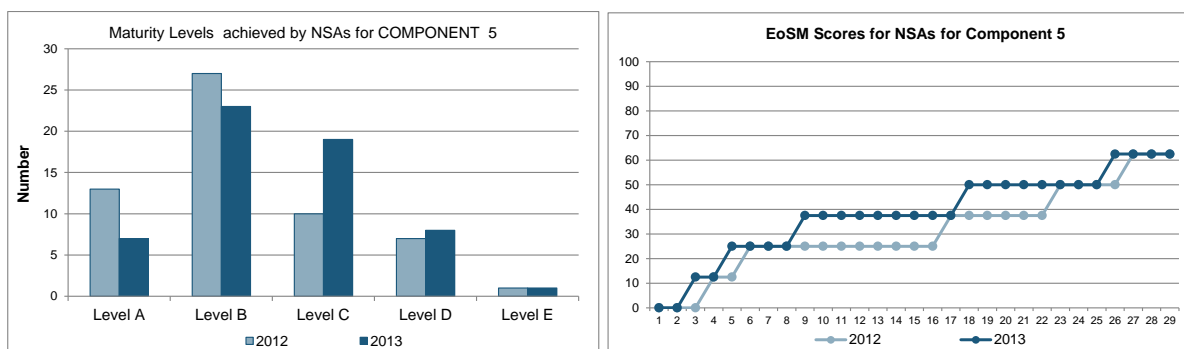
Figure 10: State Safety Culture

Management Objective 5.1 - Establishment and promotion of safety culture within the competent authority/NSA.

MO 5.1 is still the strongest area for Component 5 with an average effectiveness score of 50 (45 in 2012).

- Two (2) States (three (3) in 2012) believe that there are few shared beliefs, assumptions and values across the organisation (Level A);

- Six (6) States (nine (9) in 2012) indicate there is growing commitment and efforts towards establishing a safety culture (Level B);

- 21 States, six (6) more than 2012, assess that they have safety culture in place but it is not yet mature and further work is needed to ensure that staff engages in a proactive manner (Level C);

- Nine (9) States, one (1) more than 2012, consider that safety related experiences are openly exchanged internally and externally (Level D);

- As in 2012, one (1) State assesses that the Competent Authority's safety culture is led by the senior management and the organisation's safety culture is well organised within the industry (Level E).

Management Objective 5.2 - Establishment of procedures to measure and improve safety culture within the competent authority/NSA.

MO 5.2 is again the weakest area for Component 5 with average effectiveness score of 27 (18 in 2012). This is again the weakest area of the whole EoSM KPI – State Level.

- The number of States, indicating that the need to have safety culture measurement is not yet recognised, has decreased from 10 to five (5) (Level A);

- 17 States, same as 2012, report that although there is recognition of the need and that improvement plans are in place, the measurement of safety culture still has to be defined (Level B);

- Seven (7) States, five (5) more compared to 2012, measure the safety culture and have agreed improvement plans in place (Level C);

- There are no States reporting that safety culture enablers and disablers have been identified or that improvement plans have been set to ensure that staff are aware of and support the competent authority's shared beliefs, assumptions and values regarding safety (Levels D and E).

2.1.2 EASA verification

As explained in Section 1.4 "Verification Activities", the results of the States' EoSM questionnaires were cross-checked with the results of the EASA standardisation inspections ("thorough verification"), or for those States not inspected yet through desktop reviews complemented with requests for clarification or additional information from the authority as required ("light verification").

Below is the list of "light" (LV) and "thorough" (TV) verified States (within the scope of Performance Scheme in RP1) in 2013:

- LV: Estonia, France, Hungary, Ireland, Latvia, Lithuania, Romania, Sweden, Slovak Republic, Slovenia and United Kingdom.

- TV: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, Germany, Greece, Italy, Luxembourg, Malta, the Netherlands, Poland, Portugal and Spain.

The following conclusions can be drawn based on performed verification:

"Light" verified States

- The majority (8) of the 11 States have adapted their scores to the assessment made by EASA last year. Two have significantly changed the scores to better and some others for lower scores in different components, with no conclusive outputs.

- Only one State has downgraded from C to A/B, and its answers were found reliable.

- The positive aspect is that the percentage of States with inconsistent replies or lacking of adequate justification is only 33%.

A substantial improvement on the level of reliability of the questionnaires is expected as long as the States are being inspected by EASA.

"Thorough" verified States

- 4 out of the 16 inspected States have downgraded/kept their scores, but still do not reflect what was found during the audit. The preliminary conclusion would be that they have adjusted the scores to the input provided by EASA last year but the "lessons learnt" from the inspection have not been taken into account. Hence, the scores are still found overrated and do not correspond to the outcome of the inspection.

- In spite of the audit, 3 States keep very conservative scores, with no improved targets or a slight upgrade of the scores. The majority of answers are honest about the status of development within the competent authority.

Overall conclusion is that after the EASA's audit the majority of States have adjusted their scores to reflect the situation found during the EASA's inspections. With the exception of the four (4) out of 16 inspected States (which scores seem to be overrated), the replies correspond with the situation observed. In terms of percentages, 75% of the answers are generally correct.

It has been noted however, that safety culture scores do not necessarily indicate the correct level of maturity of a system (e.g. some States having a mature safety culture have no measurements in place). As a result, scores for those States artificially indicate a lack of maturity, as a Level A has been attributed in the absence of measurement. Similarly, States who have a less mature safety culture but where measurements are in place achieved higher scores for this MO.

2.1.3   ANSP level

Figure 11 shows 2013 EoSM scores (self-assessment) for all ANSPs that have reported. Further sections provide more detailed analysis of each EoSM Component, with an emphasis on the worst and the best achieved MOs within each.

Note that analysis in this section is based on ANSP provided scores (self-assessment with State verification).
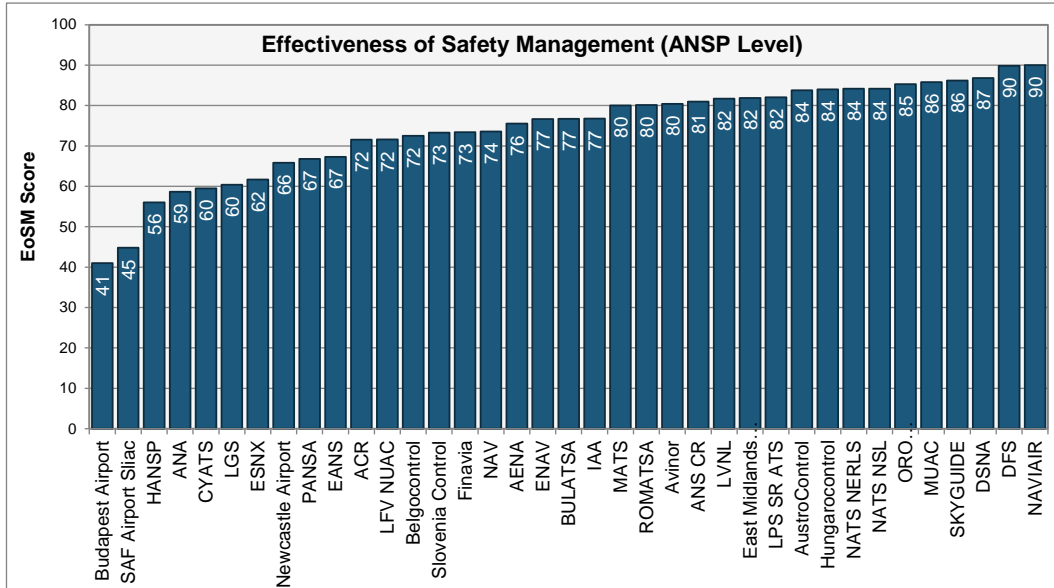
Figure 11: 2013 Effectiveness of Safety Management (ANSP level)

IMPLEMENTATION LEVEL SUMMARY FOR COMPONENT 1 - ANSP SAFETY POLICY AND OBJECTIVES

The minimum effectiveness score achieved by the ANSPs for Component 1 has increased to 46 from 43 in 2012. The maximum effectiveness score of 96 is the same as in 2012. The average effectiveness score has increased slightly to 77 from 76 in 2012. Figure 12 shows the number of times the ANSPs achieved each effectiveness level (left) and the effectiveness scores in response to the MOs of Component 1 in 2013 and comparison with the results of 2012.
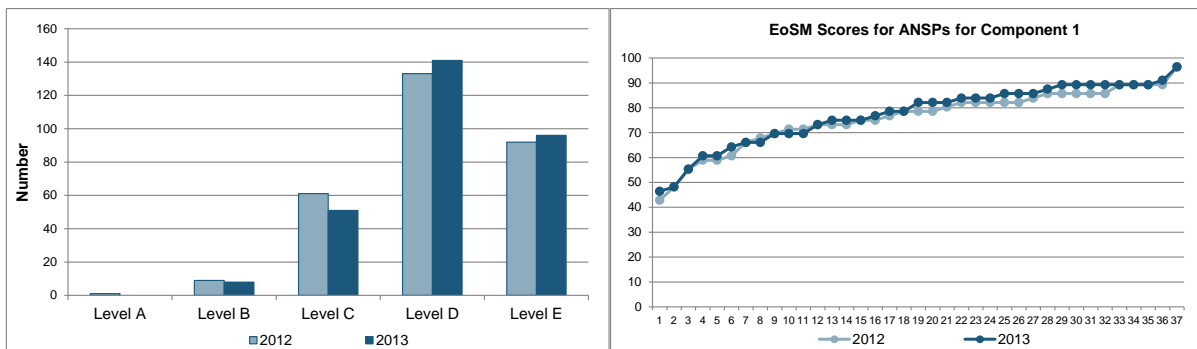
Figure 12: ANSP Safety Policy and Objectives

Management objective 1.5 - develop and maintain the relevant SMS documentation that defines the ANSP's approach to the management of safety.

MO 1.5 is still the strongest area for Component 1 with average effectiveness score of 86 (87 in 2012). This is also again the strongest area of the whole EoSM KPI - ANSP Level.

- As in 2012, there are no ANSPs at Level A or B;

- All 37 ANSPs report that the documentation of the essential parts of the SMS processes and procedures is complete, so no difference from 2012 (Level C);

- 16 ANSPs, one more since 2012, consider that there is a clear evidence that safety and safety management documentation is readily available to all personnel in the organisation and it meets or exceeds the applicable safety and regulatory requirements (Level D);

- One (1) ANSP (two (2) in 2012) reports that processes are in place to ensure continuous improvement of safety and safety management processes and procedures within the organisation (Level E).

Management Objective 1.6b - Ensure adequate management of the external interfaces which may influence directly safety of their services.

MO 1.6b is the weakest area for Component 1 in 2013 with average effectiveness score of 70. MO 1.1 (define the ANSPs' safety policy in accordance with Regulation (EU) No 1035/2011) was the weakest area in 2012 with average effectiveness score of 68. However, this year the average effectiveness score for MO 1.1 has increased to 74.

- There are no ANSPs at Level A (1 in 2012);

- Three (3) ANSPs (two (2) in 2012) report that safety-related external interfaces are managed on an informal or ad hoc basis (Level B);

- As in 2012, 34 ANSPs assess that staff and contractors are aware of how their actions impact the safety of the wider operations and how the actions of others impact safety (Level C);

- 24 ANSPs, two (2) more since 2012, consider that staff and contractors are actively promoting and improving safety (Level D);

- Four (4) ANSPs, one (1) less since 2012, indicate that the organisation regularly reviews and assesses documented safety management responsibilities (Level E).

Implementation Level Summary for Component 2 - Safety Risk Management

The maximum and minimum effectiveness scores (25 and 100 respectively) achieved by the ANSPs for Component 2 are the same as in 2012. However, the average effectiveness score of 78 shows a minor increase from 76 in 2012. Figure 13 shows the number of times the ANSPs achieved each effectiveness level (left) and the effectiveness scores in response to the MOs of Component 2 in 2013 and comparison with the results of 2012.
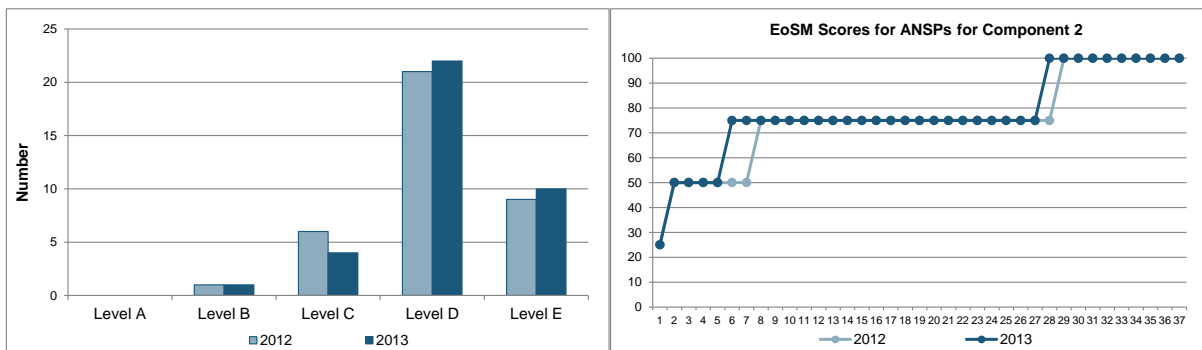
Figure 13: ANSP Safety Risk Management

Management objective 2.1- Develop and maintain a formal process that ensures the management of safety risks

Component 2 has only one MO with average effectiveness score of 78 (76 in 2012).

- There are no ANSPs at Level A;

- As in 2012, one (1) ANSP reports that there is an approved plan in place to implement the risk management process however the principles of risk management are documented and understood (Level B);

- 36 ANSP have approved and structured process in place for the assessment of current and potential risks with 4 ANSPs (6 in 2012) indicating that the process is not yet mature and training in risk assessment is on-going (Level C);

- 32 ANSPs (30 in 2012) consider that the risk management is embedded within the organisation and identified safety risks are managed and controlled (Level D);

- 10 ANSPs, one (1) more since 2012, indicate that they have methods in place to predict and mitigate future safety risks, the risk management processes are reviewed and improved on a periodic basis and best practice guidelines are developed and shared with other ANSPs (Level E).

Implementation Level Summary for Component 3 - Safety Assurance

The minimum effectiveness score achieved by the ANSPs for Component 3 has increased from a minimum of 36 in 2012 to 42 in 2013. The maximum effectiveness score of 92 is one point higher than 2012. The average also shows a minor increase to 75 from 74 in 2012. Figure 14 shows the number of times the ANSPs achieved each effectiveness level (left) and the effectiveness scores in response to the MOs of Component 3 in 2013 and comparison with the results of 2012.
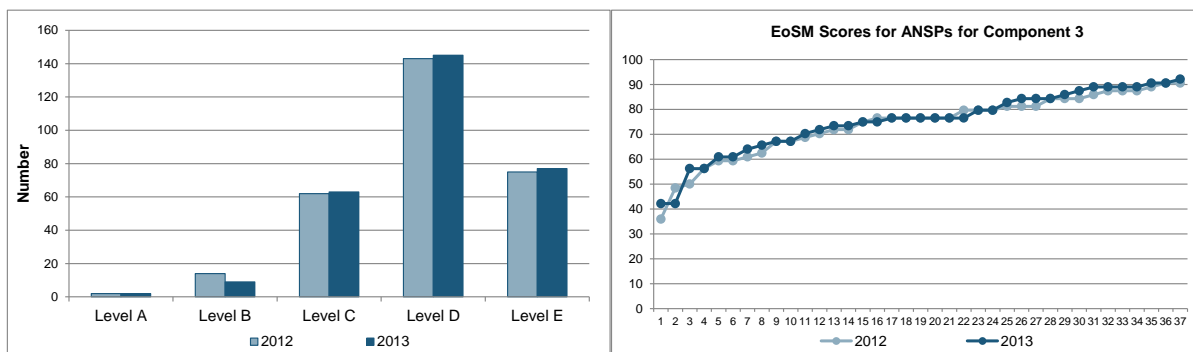
Figure 14: ANSP Safety Assurance

Management objective 3.2 - Establish a formal process to identify changes and to ensure that safety risk assessment and mitigation are systematically conducted for identified changes.

Management objective 3.4 - Ensure that ATM operational and/or technical occurrences are reported and those which are considered to have safety implications are investigated immediately, and any necessary corrective action is taken.

MO 3.2 and 3.4 are the strongest areas for Component 3 with average effectiveness score of 78. In 2012 MO 3.4 was the strongest area with average effectiveness score of 79.

- There are no ANSPs at Level A;

- All ANSPs believe that safety data sharing and publication policies are supported by the staff (Level C);

- 25 ANSPs (27 in 2012) assess that the line between acceptable and unacceptable mistakes is established and known by staff; just reporting and investigation culture principles are in place and systematically applied (Level D);

- Four (4) ANSPs, one (1) less since 2012, indicate that there is clear and published policy on how dialogue with judicial authorities and media is established and followed (Level E);

- One (1) ANSP (none in 2012) reports that there is a plan to formalise the existing reporting and investigation system and there is a commitment from the management to allocate resources for the implementation (Level B);

- 36 ANSPs, one (1) less since 2012, consider that they have a complete and formal system in place that:

  i. is commensurate with the size of the organisation,

  ii. records all reported information relevant to the SMS, including incidents and accidents, and

  iii. ensures corrective and preventive actions are taken in response to event analysis;

- 33 ANSPs, three (3) more since 2012, indicate that identified safety-related risks and deficiencies are actively and continuously monitored and reviewed for improvement (Level D);

- 21 ANSPs, three (3) less than 2012, assess that personnel who report safety occurrences, risks and problems are empowered to suggest corrective action and there is a feedback process in place (Level E).

Management objective 3.1 - Establish means to verify the safety performance of the ANSP and the effectiveness of safety risk management.

MO 3.1 is still the weakest area for Component 3, however the average effectiveness score of 71 shows a minor increase from 69 in 2012.

- There are no ANSPs at Level A;

- One (1) ANSP (3 in 2012) indicates that the implementation of a monitoring system is at planning stage, however a limited set of indicators has been implemented (Level B);

- 36 ANSPs, two (2) more since 2012, report that a safety monitoring system has been implemented and documented with 6 ANSPs (same as 2012), indicating that indicators and targets have been set but limited to meeting the safety requirements (Level C);

- 30 ANSPs, two (2) more since 2012, specify that additional indicators are defined and monitored, all indicators are tracked against thresholds/targets on a regular basis and trends are analysed for safety improvement purposes (Level D);

- Five (5) ANSPs, one (1) less since 2012, consider that safety indicators covering all aspects of the system/operations are mature and are used to measure safety improvement. In addition they have comprehensive metrics in place to measure and monitor indicators and thresholds throughout the system (Level E);

- Two (2) ANSPs (4 in 2012) indicate that the implementation of some qualitative and quantitative techniques in certain parts of the organisation has started but there is insufficient data to analyse (Level B);

- 35 ANSPs, three (3) more since in 2012, have qualitative techniques in place with nine (9) ANSPs, two (2) more since 2012, reporting that the implementation of quantitative techniques has started (Level C);

- As in 2012, 26 ANSPs measure safety performance using statistical and other quantitative techniques, perform internal comparative analysis and have begun external comparative analysis (Level D);

- Five (5) ANSPs, one (1) more since 2012, assess that the reporting, operational safety surveys and SMS auditing programmes are integral parts of the management and operational processes and that the results are used to drive further safety improvement across the organisation (Level E).

Implementation Level Summary for Component 4 - Safety Promotion

The minimum effectiveness score achieved by the ANSPs for Component 4 has increased from a minimum of 29 in 2012 to 35. The maximum effectiveness score of 96 has also increased from 94 in 2012. The average effectiveness score is 73 (72 in 2012). Figure 15 shows the number of times the ANSPs achieved each effectiveness level (left) and the effectiveness scores in response to the MOs of Component 4 in 2013 and comparison with the results of 2012.
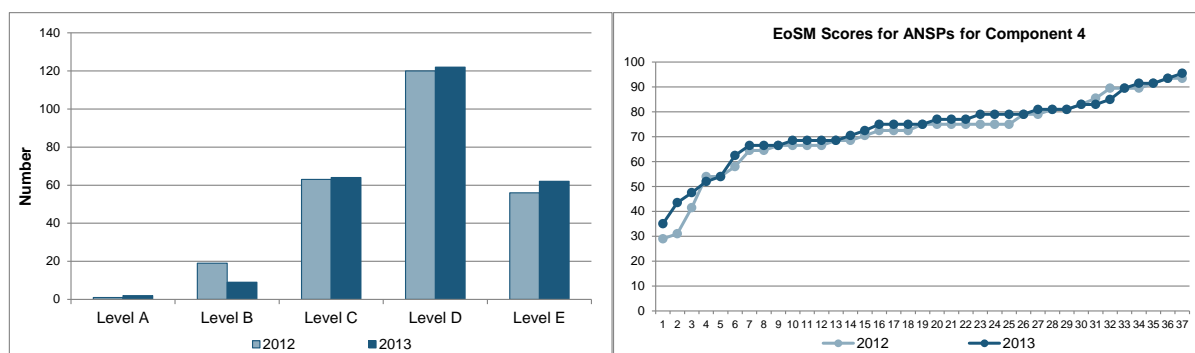
Figure 15: ANSP Safety Promotion

Management objective 4.1 - Establish a safety training programme that ensures that personnel are trained and competent to perform SMS-related duties.

MO 4.1 is still the strongest area for Component 4 with average effectiveness score of 75 (74 in 2012).

- No ANSP is at Level A;

- One (1) ANSP (two (2) in 2012) reports that the documentation of SMS processes and procedures has started and is progressing as planned (Level B);

- 36 ANSPs, one (1) more since 2012, report that competency methods and an annual planning process for training are in place;

- As in 2012, 28 ANSPs indicate that there is a process for the training providers to receive feedback on the effectiveness of the training programmes (Level D);

- 10 ANSPs, one (1) more since 2012, report that they are reviewing periodically the competency methods to ensure continuous improvement (Level E).

Management objective 4.2 - Establish formal means for safety promotion and safety communication.

MO 4.2 is again the weakest area for Component 4 with average effectiveness score of 72 (69 in 2012).

- All 37 ANSP apply a documented process to maintain all safety and management procedures (Level C);

- 34 ANSPs, one (1) more since 2012, have a formal process in place to periodically review safety and safety management procedures to ensure that they are effective and up to date (Level D);

- 14 ANSPs (16 in 2012) report that organisational changes which could affect safety and/or safety management framework are subject to formal review (Level E);

- All 37 ANSPs, two (2) more since 2012, have a process in place for lessons learnt sharing (Level C);

- 30 ANSPs (27 in 2012) also indicate that safety lessons learnt are systematically shared across the organisation and corrective actions are taken (Level D);

- Seven (7) ANSPs, two (2) more since 2012, assess that the process is embedded in the organisation and is periodically reviewed (Level E);

- All 37 ANSPs, one (1) more since 2012, indicate that they share safety data and information internally, nationally and with international bodies when required by regulation (Level C);

- As in 2012, 22 ANSPs consider that they have a clear and published policy that encourages the proactive sharing of safety-related information with other parties (Level D);

- Eight (8) ANSPs, two (2) more since 2012, indicate that they actively share safety data and information internally and externally and have a process in place to receive and act on safety data and information from external stakeholders (Level E);

- Three (3) ANSPs, three (3) less since 2012, report that a limited amount of safety-related information is made available, but only to selected authorities (Level B);

- 34 ANSPs (31 in 2012) indicate that they make high-level safety-related performance information available according to applicable requirements (Level C);

- 18 ANSPs, two (2) more since 2012, report that safety performance information not governed by applicable requirements is also made available to the public (Level D);

- As in 2012, four (4) ANSPs indicate that this includes also achieved safety levels and trends (Level E);

- One (1) ANSP, two (2) less since 2012, considers that there is not yet systematic structure for internal safety promotion, however ad hoc processes are in place and some initial implementation has begun (Level B);

- 36 ANSPs (34 in 2012) report that an organisational approach has been established to promote safety, lessons learnt and the SMS (Level C);

- As in 2012, 29 ANSPs indicate that formal methods are in place to capture safety knowledge and promote it internally (Level D);

- Seven (7) ANSPs, one (1) more since 2012, assess that staff are encouraged to share lessons learnt, strategies to promote safety and its management are developed by senior levels and implemented (Level E);

- As in 2012, one (1) ANSP reports that there are no plans to release or share best practices with industry stakeholders (Level A);

- 4 ANSPs, one (1) less since 2012, indicate that best practices are shared in response to requests for assistance from industry stakeholders (Level B);

- 32 ANSPs (31 in 2012) share best practices with industry stakeholders as required by regulation (Level C);

- 23 ANSPs, two (2) more since 2012, indicate that they actively share best practices with industry stakeholders and that it has improved safety performance (Level D);

- 10 ANSPs, two (2) more since 2012, also indicate that they pro-actively share SMS-related best practices with the aim of improving safety standards (Level E).

Implementation Level Summary for Component 5 - Safety Culture

The minimum effectiveness score achieved by the ANSPs for Component 5 has decreased to 25 from 38 in 2012). The maximum of 88 is the same as in 2012. However the average effectiveness score of 67 shows an increase compared to 63 in 2012. Figure 16 shows the number of times the ANSPs achieved each effectiveness level (left) and the effectiveness scores in response to the management objectives of Component 5 in 2013 and comparison with the results of 2012.
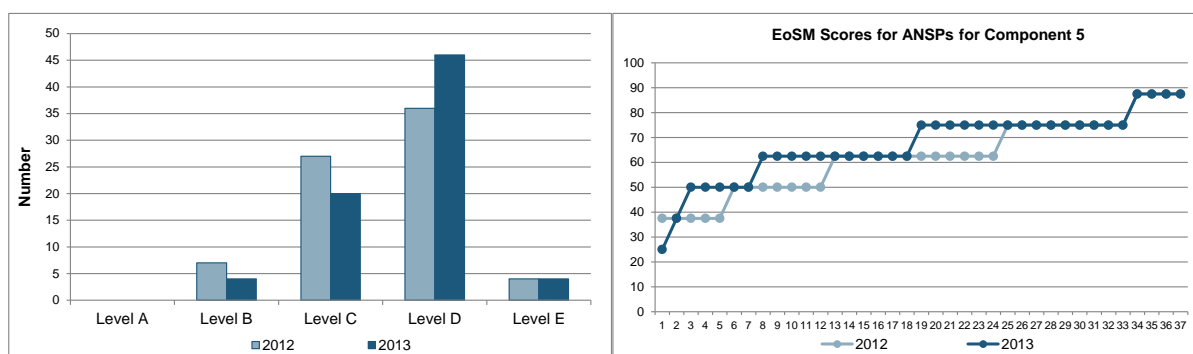
Figure 16: ANSP Safety Culture

Management objective 5.1 - Establish and promote safety culture within the ANSP

MO 5.1 is still the strongest area for Component 5 with average effectiveness score of 71 (69 in 2012).

- As in 2012, there are no ANSPs at level A;

- One (1) ANSP (none in 2012) indicates that the organisation is at the initial stages of the implementation of systemic safety management (Level B);

- 36 ANSPs indicate that a positive safety culture is being developed although it is still immature (Level C);

- 31 ANSPs, five (5) more than 2012, assess that staff are proactively involved in planning and implementing systematic safety management and that the organisation operates informed learning and reporting cultures, as well as just culture (Level D);

- As in 2012, one (1) ANSP considers that experiences are openly exchanged internally and externally and within the organisation there is a complete alignment between what is said, what is done and what is believed (Level E).

Management objective 5.2 - Establish procedures to measure and improve safety culture within the ANSP.

MO 5.2 is the weakest area for Component 5 with average effectiveness score of 63 (56 in 2012). This is again the weakest area of the whole EoSM KPI – ANSP Level.

- There are no ANSPs at level A;

- Three (3) ANSPs, four (4) less than 2012, consider that although the organisation is aware of the need to have periodic measurements of safety culture in place as well as an improvement plan, it is still at definition phase (Level B);

- 34 ANSPs (30 in 2012) report that safety culture is measured, results are available and an improvement plan is in place to support individual awareness (Level C);

- 19 ANSPs, six (6) more than in 2012, assess their safety culture on a regular basis and implement improvements to any identified weaknesses. In addition, they have identified safety culture enablers and barriers and have implemented solutions to reduce barriers (Level D);

- As in 2012, three (3) ANSPs also indicate that all personnel are pro-active and committed to improving safety and that organisational management approves a continuous improvement plan (Level E).

2.2   Application of RAT methodology

In accordance with Commission Regulation (EU) No 691/2010, Member States are required to report the proportion of SMIs, RIs and ATM-S for which severity classification was assessed using the RAT methodology.
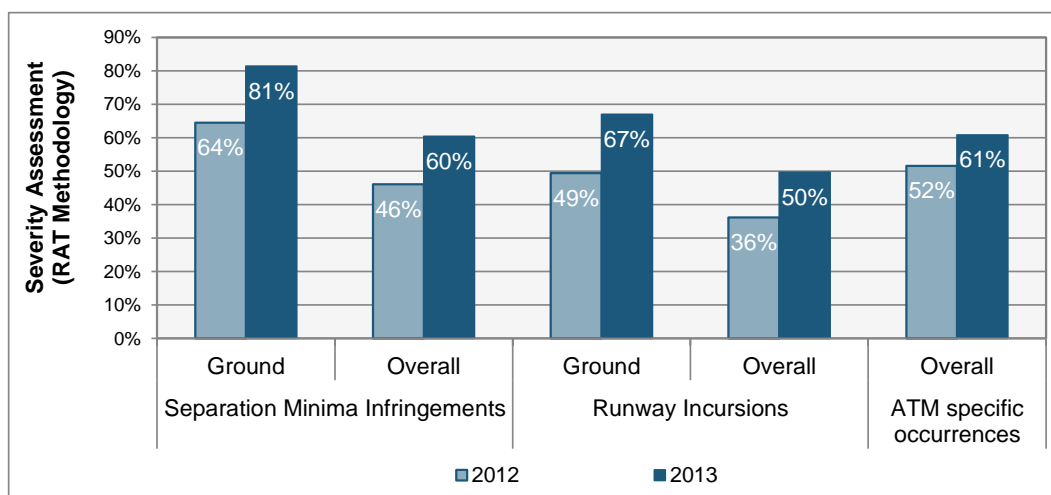
The collection and verification of the application of the RAT methodology is currently performed through the existing safety data reporting system - AST. Despite the recent updates of ECCAIRS to allow the reporting of the RAT methodology application, further updates are still required (the required field is only available to ECCAIRS 5 users).

Figure 17: 2013 EU averages for severity assessment using RAT methodology

The EU averages for the application of RAT severity methodology for each type of occurrence (SMIs, RIs and ATM-S) show slight improvement in the second year of RP1. However, improvements are still rather small at State level. The RAT methodology for severity assessment of RIs at State level is applied in only half of the cases. While SMIs and ATM-S ATM Overall (State level) score is only provided in approximately 60% of the cases. Similarly to the previous year, many CAA/NSA entities still indicate that they lack either the information required to complete the RAT Overall score or the knowledge/capability to enable such scoring and reporting, or in some cases both elements.

Note: For the calculation of the Union-wide average, where no occurrences of a specific type have been reported; these were not included in the calculation of an average but if they had been, they would reduce the percentages shown in Figure 17.

Over the last year, the EUROCONTROL safety analysis team (DPS/SSR) has supported a number of Member States to put in place the necessary arrangements at national level for the successful implementation of the RAT methodology in accordance with the provisions of the Performance Scheme Regulation (e.g. Bulgaria, Germany, Malta, Norway, Poland, Spain

and Nordic States). Similar activities are planned for 2014 to better prepare the relevant Member States to meet the targets considered for the next reference period (RP2), both for the severity for ATM Ground and ATM Overall.

In addition, EASA has conducted an additional survey with States in order to get a better view of what is the current implementation level for RAT methodology and who is using it (Accident Investigation Boards, Competent Authorities and certified ANSPs). In addition, States were asked to indicate for which type of occurrence investigation they have applied the RAT methodology.

All 29 Performance Scheme Member States and 37 ANSPs have responded to this survey. Table 2 shows usage of RAT application for each organisation separately. Table 3 shows how many occurrences were assessed using the RAT methodology within all reporting ANSPs.

	AIB	Competent Authority	ANSP
Number of organisations using RAT methodology	5	9	29
%	17	31	100

Table 2: Number of organisations using RAT methodology

	RI	SMI	ATM STE
Number of ANSPs using RAT methodology	35	35	31
% of ANSPs using RAT methodology	95	95	84

Table 3: Number of ANSPs using RAT methodology

2.3   Just Culture

This assessment is based on the responses given to the questionnaires on Just Culture as defined under Regulation (EC) N° 691/2010. The questionnaires for both States and ANSPs were divided into three areas:

- Policy and its implementation;
- Legal & Judiciary;
- Occurrence reporting and investigation.

Under each area, the questions vary from the State to the ANSP questionnaire. The aim of review was to identify certain tendencies and approaches in place in the context of measuring the presence and corresponding level of absence of Just Culture.

A total of 29 States and 37 ANSPs filled in the self-assessment questionnaires used for the measurement of the JC SPI in accordance with Acceptable Means of Compliance (AMC) and Guidance Material (GM) for the Implementation and Measurement of Safety Key Performance Indicators, (EASA Decision 2011/017R). In accordance with the AMC the responses have been verified by EASA, based on the methodology described above (Section 1.4.2).

The descriptive assessment below reflects the results obtained in terms of percentage of positive responses provided by the States or ANSPs in each of the areas identified.

Note: Netherlands requested that MUAC Just Culture replies are downgraded/corrected to the previous year equivalent. The corrected data was not used in the preparation of this document.

2.3.1 "High-density" clusters

"High-density" clusters reflect the questions to which a majority of States/ANSPs have provided a positive answer (i.e. over 19 positive State responses and over 25 positive ANSP responses), these are deemed to indicate a certain consensus on the elements identified in the JC questionnaire and a possible "best practice".

State (over 19 "yes" responses)

POLICY & ITS IMPLEMENTATION

Cluster #1 (ST.P.6)	States
The State has a clear definition at State-level of the role of different State authorities and ANSPs in handling safety reports and the flow of information.	*YES: 28 – NO: 1*
The definition of the roles in handling safety reports and the flow of information is generally adopted in national legislation at State-level, except for one State, which does not provide additional information.	

Cluster #2 (ST.P.7)	States
The State ensures that, within the State, safety investigation and/or analysis process is entirely independent from any judicial authority.	*YES: 28 - NO: 1*
This cluster reflects a requirement under Regulation (EU) No 996/2010, set out in articles 4 and 5 and in the Preamble (15) and (16). This cluster reflects that nearly all States have ensured that the independence of the safety investigation process is also ensured in national legislation. In one State (SK), the negative response is justified by noting that the judicial authority has a power to assess/review investigation outputs from a judicial point of view.	

LEGAL/JUDICIARY

Cluster #3 (ST.L.1)	States
The State's Freedom of Information (FOI) legislation, where in place, provides for exemptions applicable to safety information.	*YES: 21 – NO: 8*
Exemptions applicable to safety information are either explicitly contained in national legislation or are provided for in more general legislation. In States answering "no", either no FOI legislation exists or FOI legislation exists but it does not provide for an exemption.	

Cluster #4 (ST.L.6)	**States**
The State has fully and effectively implemented into national law the provisions of Directive 2003/42/EC, in particular Art. 8 on protection of information.	*YES: 27 – NO: 2*

A vast majority of States have confirmed that the provisions of Directive 2003/42/EC on occurrence reporting in civil aviation, in particular article 8, are fully and effectively implemented into national law.
Two States have responded negatively, one indicating that JC was not implemented into national law, another not providing additional indication.

Cluster #5 (ST.L.8)	**States**
The State has an agreed process to deal with aviation incident matters between the aviation and judicial/police authorities.	*YES: 22 – NO: 7*

This cluster reflects a requirement under article 12.3 of Regulation (EU) No 996/2010, which provides for the establishment of advance arrangements between safety investigation authorities and other authorities likely to be involved in safety investigations, such as judicial authorities and/or the police.
Aviation and judicial/police authorities cooperate and coordinate aviation incident matters.
In some States there is no formal arrangement but cooperation is ensured informally. In others no agreed process is in place and in one State the procedure is being put in place.

OCCURRENCE REPORTING AND INVESTIGATION

Cluster #6 (ST.O.1)	**States**
The State provides regular statistical feedback to the public based on safety reports received.	*YES: 27 – NO: 2*

Feedback is provided by publication in reviews and/or on the web.
In two States, feedback is generally provided, but has not yet been provided for 2013.

Cluster #7 (ST.O.2)	**States**
The State involves Subject-Matter experts in taking decisions in cases where personnel licences/ratings could be affected.	*YES: 24 – NO: 5*

The involvement of Subject Matter experts are in most States foreseen by law.
In some States, experts are not involved, or not yet. In other States, the experts are involved but indirectly or on a case-by-case basis. In one State only the Director-General may alter, revoke, suspend personnel licences/ratings but no indication is given on possible expert support.

ANSPs (over 25 "yes" responses)

POLICY & ITS IMPLEMENTATION

Cluster #1 (ANSP.P.1)	ANSPs
The ANSP has an explicit JC Policy, endorsed by management and staff representatives and made public.	*YES: 26 – NO: 11*

Most ANSPs indicated that a JC Policy is in place, in some instances as a stand-alone document, whilst in others as part of the Safety Policy or the SMS Manual and internal procedures. The JC Policy is generally made public by management decision but not always endorsed specifically by staff representatives.

In the ANSPs having responded negatively, most present the same justification as above, namely there is no specific JC Policy but that JC is a part of the ANSP's Safety Policy or SMS. In other cases, the ANSP highlights the long tradition and experience in applying the principles of JC without having a specific policy in place. Lastly, some ANSPs indicated that a JC Policy is being finalised.

Cluster #2 (ANSP.P.2)	ANSPs
The ANSP's JC Policy describes what is considered as "unacceptable behaviour".	*YES: 27 – NO: 10*

In most cases, the ANSPs indicated that the JC Policy contains a definition and examples of what is considered as "unacceptable behaviour", in some cases based on the definition of Just Culture as set out in EU Regulation with reference to "gross negligence and wilful violations". The same is applicable to the ANSPs answering "no", where the policy is in draft form but will contain a similar description.

In some instances, ANSPs indicated that even without a specific JC Policy the concept and examples of "unacceptable behaviour" would be covered through training of staff.

Cluster #3 (ANSP.P.3)	ANSPs
The ANSP's JC policy guarantees no disciplinary action will be taken for self-reported occurrences (except cases of "unacceptable behaviour")	*YES: 30 – NO: 7*

Most ANSPs have confirmed that no disciplinary action would be taken as a result of self-reported occurrences which do not fall under "unacceptable behaviour". In some instances, the ANSPs indicated that the principle would be integrated in the future JC Policy or was already present in ANSP internal SMS Manual and internal procedures, with a clear indication that ANSP staff was encouraged to report under JC principles which presumed a certain protection against disciplinary action. However, one ANSP indicated that there could be no guarantee that no action would be taken as a result of a report. The intention of the question will be clarified in the question for Year 2 - RP1 to address this point.

Cluster #4 (ANSP.P.4)	ANSPs
The ANSP provides legal support to its staff in case of prosecution related to safety occurrence.	*YES: 28 – NO: 9*

Most ANSPs have confirmed that legal support is available to staff in case of legal action taken against them in the follow-up of a safety occurrence.

Where the response was negative, there are three cases: the ANSP is planning or considering the provision of legal support in the future; the ANSP does not provide legal support to staff; and lastly, the ANSP provides legal advice to staff but no support or legal representation in litigation.

Cluster #5 (ANSP.P.5)	ANSPs
The ANSP has an established and well-known CISM programme.	*YES: 29 – NO: 8*

A majority of ANSPs have established a CISM programme. Where the response was negative, it is being implemented or is partially available in all but two ANSPs. However, the latter ANSP has crisis management provisions in its internal procedures.

Cluster #6 (ANSP.P.6)	ANSPs
The ANSP ensures that safety actions taken in respect to staff after an occurrence have no impact on the pay of the staff member concerned until the end of the investigation.	*YES: 32 – NO: 5*

In most ANSPs, safety actions have no impact on the pay of the staff member involved.

However, in one State the Government Civil Service Commission has the authority to impose penalties. In another, safety actions are not taken. In one instance one State responded negatively, without further indication, in another, the State indicated that decisions taken in the case of occurrences investigated had no impact on staff pay.

Cluster #7 (ANSP.P.7)	ANSPs
The ANSP's safety investigators are fully independent from any line, competency and ops management.	*YES: 26 – NO: 11*

Most ANSPs have indicated that the safety investigators are fully independent and that this is usually ensured by having them in separate units with direct reporting lines. In cases where the safety investigator is under a line management for some of the activities, the investigative activities would be fully independent.

In some instances, it was noted that independence was possible in most cases, but that for smaller units this was not feasible. In some cases, the ANSPs specified that certain investigators would necessarily remain under some ops management but the safety department investigators would remain independent. Lastly, one ANSP noted that since the safety investigators were active ATCOs and formed an essential part of the process, a total separation would not be a positive thing.

Cluster #8 (ANSP.P.8)	ANSPs
The ANSP ensures that the safety investigators have full, unimpeded access to all relevant data for investigations.	*YES: 37 – NO: 0*
All ANSPs have confirmed that the ANSPs' safety investigators have full and unimpeded access to relevant data for investigations. Most ANSPs specified that this access was ensured through provisions set out in the SMS manual.	

Cluster #9 (ANSP.P.9)	ANSPs
The ANSP ensures that access to safety data is clearly defined and kept confidential.	*YES: 34 – NO: 3*
Access to safety data and confidentiality is in general preserved by national legislation (e.g. decrees), SMS Manual or internal procedures of the ANSPs. In some instances there is no clear definition regarding access to data and if/how confidentiality of that data is preserved. In others, however, confidentiality of safety data is not stated in a policy but is implicitly recognised and access to data is generally restricted to nominated personnel.	

Cluster #10 (ANSP.P.10)	ANSPs
The ANSP staff providing CISM are known and adequately trained.	*YES: 29 – NO: 8*
Linked with cluster #5 above, where the ANSP has established a CISM programme, the ANSP indicates that the staff is known and adequately trained. For ANSPs answering negatively, the nomination will follow the establishing of CISM. In one instance, the ANSP added a justification that CISM staff are provided externally as part of the employee support program.	

LEGAL/JUDICIARY

Cluster #11 (ANSP.L.1)	ANSPs
The ANSP has fully transposed the spirit of Directive 2003/42/EC (art. 8 - protection of information) into its internal procedures.	*YES: 37 – NO: 0*
All of the ANSPs have fully transposed the spirit of the occurrence reporting Directive into their internal procedures, SMS manuals.	

Cluster #12 (ANSP.L.3)	ANSPs
The ANSP has an agreed process in place between the ANSP and its NAA to deal with incident matters.	*YES: 33 – NO: 4*

ANSPs have for the most confirmed that is an agreed process between the ANSP and its NAA in place. The form that the process takes is varied: through national legislation, internal procedures, cooperation through working arrangements, informal or oral procedures, SMS Manual.

In some cases, there is no agreed process in place but an understanding that the NAA will coordinate with the ANSP in incident matters. One ANSP indicated that such a process is not yet available.

OCCURRENCE REPORTING AND INVESTIGATION

Cluster #13 (ANSP.O.1)	ANSPs
The ANSP ensures the protection of the identity of staff involved in occurrences through staff regulations.	*YES: 33 – NO: 4*

The identity of staff involved in occurrences is protected in most ANSPs under provisions of the SMS manual and other internal ANSP procedures.

In the negative responses, one ANSP indicated that there were confidentiality provisions in law, but these are not consistently applied. Another ANSP indicated it had no explicit procedure guaranteeing the protection of the staff's identity, but that this protection would however be implicitly guaranteed. Lastly, an ANSP noted that the identity of staff is only recorded for internal investigation.

Cluster #14 (ANSP.O.2)	ANSPs
The ANSP ensures that staff subject to investigation based on occurrence reports has access to information related to the investigation.	*YES: 34 – NO: 3*

Most ANSPs have provided in their SMS Manuals and/or internal procedures that staff subject to investigation has access to the information related to it. In most cases, the information is stored in the ANSP's database.

In one ANSP, the staff member can be informed by the investigators but will not have direct access, whilst in others access to information is strictly regulated and staff only has access in exceptional circumstances.

Cluster #15 (ANSP.O.4)	ANSPs
The ANSP has a formal procedure in place to inform staff having reported an occurrence of the progress of the investigation.	*YES: 26 – NO: 11*

Most ANSPs have indicated that staff is informed of the progress of an investigation as part of the investigation process, which is, in most cases, set out in the SMS or internal procedures.

Three ANSPs responded negatively without further justification, but all other cases, the ANSPs indicted that although there was no formal procedure the staff having reported an occurrence is kept informed of the progress of the investigation, in some cases through an automated tool, in others through direct contact.

Cluster #16 (ANSP.O.5)	ANSPs
The ANSP provides regular feedback to staff based on occurrence reports.	*YES: 37 – NO: 0*

All ANSPs provide regular feedback to all staff based on occurrence reporting. In most cases, the ANSPs will use the occurrence reports feedback in training course and provide in-depth feedback.

In most cases, the feedback is provided through periodical internal letters, bulletins, debriefings, meetings, ANSP newsletters and intranet pages.

Cluster #17 (ANSP.O.6)	ANSPs
The ANSP's public annual report provides statistical feedback on occurrence reports.	*YES: 29 – NO: 8*

A majority of ANSPs indicated they provide statistical feedback on occurrence reports in their public annual report.

Some ANSPs have indicated that this is done by the CAA and not the ANSP, others indicate there is no publication of occurrence report feedback in annual reports, and the last category indicates others where such an initiative is underway. One ANSP responded negatively but provides information relating to the publication of statistical feedback on all occurrence reports.

2.3.2 "Medium-density" clusters

"Medium-density" clusters are the ones where States/ANSPs are divided on the approach to be followed (i.e. between 10-19 positive State responses and between 12-25 positive ANSP responses) and these show a more diverse opinion on certain elements in the JC questionnaire.

State (between 10 – 19 "yes" responses)

POLICY & ITS IMPLEMENTATION

Cluster #1 (ST.P.1)	States
The State has an explicit JC Policy, endorsed at appropriate State-level and made public.	*YES :16 - NO : 13*
A majority of States have an explicit JC policy either contained in a single legal act or spread in several legal acts, with elements of JC in different texts. Where the States have answered 'no', there are several reasons: elements of Just Culture Policy are present in other State-level instruments, such as the State Safety Program or in some cases in a State declaration. Other States have not yet established it clearly at State level or at the right level in national law. One State indicated that a State level policy was in draft form.	

Cluster #2 (ST.P.2)	States
The State's JC Policy will describe what is considered as 'unacceptable behaviour'.	*YES :15 - NO:14*
The States that gave a positive answer include a description, in general, in their national legislation. In some cases, the description is contained in a CAA declaration, in others certain behaviours are provided as examples of unacceptable behaviour. In one instance, the State is waiting for the EU regulation on occurrence reporting. In the remaining States, unacceptable behaviour is not described.	

Cluster #3 (ST.P.3)	States
The State's JC policy refers to legal provisions which guarantee no punishment for self-reported occurrences (except for cases of 'unacceptable behaviour')	*YES: 19 - NO : 10*
Most States indicated that the JC Policy referred to provisions in national order (e.g. aviation act, national law) which guarantee no punishment for self-reported occurrences, outside of cases of unacceptable behaviour. Some of the States answering negatively indicated that there was no support for this type of provision in law. In one case, the State further noted it would be against constitutional law to provide protection of this sort to a specific group of people. For the other States, the protection was partly in place and would be further developed.	

Cluster #4 (ST.P.5)	States
The State requires a JC Policy in the ANSP.	*YES :12 - NO :17*

The States requiring a JC Policy in the ANSP choose different means: national law, SMS Manual, handbooks, State Safety Programs, etc.

Regarding the States that do not require a JC Policy in the ANSP, some provide additional information as follows: one State requires it on a voluntary basis; others have no formal policy but know the ANSP implements JC ; some States indicate that pending the future EU Regulation on occurrence reporting, no regulatory requirement exists; one State indicates there is an oral agreement between CAA and ANSP on JC implementation.

Cluster #5 (ST.P.8)	States
The State actively strives to implement JC in the legislative framework.	*YES :18 - NO :11*

Most States have indicated that there are several actions taken at State level to increase awareness and better understanding of JC principles.

In some cases, States have indicated that although JC principles are known there are no specific actions taken at State level to implement it in the legislative framework. In other cases, activities are planned but not yet implemented. In one instance, a State noted that JC has been effectively implemented in practice for a long time without a legislative framework.

Cluster #6 (ST.P.10)	States
The State ensures that qualifications and training requirements as regards Just Culture for State safety investigators are clearly defined.	*YES : 11 - NO: 18*

Most States that gave a negative answer also indicated that there was no requirement as such but that JC was included in State safety investigator courses as part of the regular training received. This was in general included in training manuals of the national AIBs.

In all instances, the States indicated awareness of the importance to ensure appropriate training for safety investigators in line with the requirements of Regulation (EU) No 996/2010.

LEGAL/JUDICIARY

Cluster #7 (ST.L.3)	States
The State has provisions in national law, affording protection from prosecution to individuals involved in safety events, under the JC principles.	*YES :13 - NO :16*
Most States providing a positive answer have indicated that there are provisions affording protection to individuals involved in safety events in their national aviation law, in application of JC principles. The other States do not have such provisions in place.	

Cluster #8 (ST.L.4)	States
The State ensures there is an entity, supported by Subject-Matter Experts, with clearly defined rules, which decides whether relevant safety events are a matter for prosecution.	*YES: 10 – NO: 19*
In most of the States where the response was positive, the process was that an independent expert or group of experts (e.g., legal and aviation experts, AIB personnel) would recommend an action to the public prosecutor. On the other hand, some States indicated that the Prosecutor was the only one to decide whether a safety event is a matter for prosecution, though in most cases the Prosecutor would be supported by Subject-matter experts.	

Cluster #9 (ST.L.5)	States
The State has a judicial procedure in place to ensure that, in case of aviation accident/incident prosecution, Subject-Matter experts will be involved.	*YES :18 - NO :11*
The States answering positively, in most cases, specify that a judicial procedure to ensure the involvement of Subject-Matter experts in cases of aviation-related prosecutions is included in national criminal procedure codes and laws. For the other States, in most cases, it is noted that although there is no specific provision in criminal law or procedure at national level, the involvement of experts takes place in practice. In one case, this will be addressed in a general agreement between the authorities and parties involved in aviation cases.	

Cluster #10 (ST.L.7)	States
The State has concluded an advance agreement to guarantee appropriate use of safety information.	*YES :17 - NO :12*
Those States having adopted an advance agreement laid it down in national legislation. The States that lack an advance agreement refer partly to national and EU Regulation (EU) No 996/2010 and ICAO standards as well as State Safety programs, indicating that the use of safety information is covered under these instruments.	

ANSPs (between 12 – 25 "yes" responses)

POLICY & ITS IMPLEMENTATION

Cluster #1 (ANSP.P.11)	ANSPs
The ANSP has regular training and/or briefings on relevant legislation for safety in the context of Just Culture.	_YES : 22 - NO : 15_

Most ANSPs have included JC principles and relevant legislation in their training courses, in most cases in initial training. In some cases, such briefings are also given as part of a wider Safety Culture update through regular seminars and conferences.

For the ANSPs answering negatively, some indicated there is no regular training or briefing without further justification.

In other cases, the ANSPs indicate that this is not done on a regular basis but where needed or is not fully in place yet.

Cluster #2 (ANSP.P.12)	ANSPs
The ANSP has included principles of JC in all training curricula (ab-initio and recurrent).	_YES : 24 - NO : 13_

A majority of ANSPs have included JC principles in all training curricula, either as stand-alone courses or part of a general course on Safety culture. For the ANSPs answering negatively, in most cases it is included but only in some training and not always on a systematic basis. In other cases it is not included, or not yet included.

Cluster #3 (ANSP.P.13)	ANSPs
The ANSP has clearly defined the qualifications and training requirements of ANSP safety investigators.	_YES:20 - NO :17_

Most ANSPs have indicated that safety investigators have clearly defined qualifications and training requirements, usually included in internal manuals and procedures specifically addressing ANSP safety investigators.

In the other cases, some ANSPs indicated a negative answer without further detail. In other cases the ANSPs indicated that this would be done with the development of the ANSP's JC Policy. In one instance, it was noted that since the function of a safety investigator is performed by applying JC principles, having such a qualification or requirement would not be needed.

Occurrence reporting and investigation

Cluster #4 (ANSP.O.3)	ANSPs
The ANSP has a requirement for staff subject to investigation to sign their agreement/disagreement with the findings of investigations.	*YES : 13 - NO: 24*

From the responses, it appears that no ANSP has a strict requirement for staff to sign in agreement/disagreement of the findings of an investigation. The ANSPs answering yes, for the most part, indicate that there is no requirement as such. However, most ANSPs (including most of the 'no' responses) indicate that staff subject to an investigation will be involved in the investigation and asked to comment, in agreement or disagreement, with the draft findings. This is usually foreseen in the internal ANSP procedures and SMS.

This result reflects the intention of the question, which will be clarified for the Year 3 – RP1 verification exercise.

Cluster #5 (ANSP.O.7)	ANSPs
Automated reporting accepted by staff and implemented by the ANSP.	*YES : 14 - NO: 23*

Most ANSPs reported that automated reporting was not in place at the ANSP, in some instances it was under consideration, or initiated but not fully in place.

For the ANSPs answering positively, some indicated that a system of automated reporting through different tools has been in place for some time in the ANSP.

Cluster #6 (ANSP.O.8)	ANSPs
The ANSP has a separate body, involving Subject-Matter experts, making a decision on whether a case is an 'honest mistake' or it falls under 'unacceptable behaviour'.	*YES : 15 - NO : 22*

Some ANSPs responded that there was no separate body taking a decision on the nature of the case.

For the ANSPs which answered positively, the approach varies. In some instances, the ANSP JC Policy foresees the procedure for an expert committee review in some detail. In others, the assessment is part of the functions of an existing committee which calls for expert support as needed. Lastly, some ANSPs do not have a separate body but would ensure that the investigators are supported by the appropriate experts in the decisions.

2.3.3 "Low-density" clusters

"Low-density" clusters correspond to the questions for which there is no clear agreement or very different approaches (i.e. less than 10 positive State responses and less than 12 positive ANSP responses).

State (less than 10 "yes" responses)

POLICY & ITS IMPLEMENTATION

Cluster #1 (ST.P.9)	States
Have a regulatory requirement to include elements and/or courses on Just Culture in the training programmes for staff working in the competent authority and service providers.	*YES: 7 – NO: 22*
Most States responded negatively, indicating that there was no regulatory requirement but emphasising that courses were included in training programmes. For the States answering positively, there were different approaches; most indicated that JC principles were included in training although not always as a stand-alone course. In some instances it was specified that the requirement was intended for ANSPs and that for staff working at the CA there was no specific mention. In this instance, the overall feedback is that, as a minimum, elements of JC are present in training programmes, but in most cases that is applicable to ANSP staff rather than CA staff.	

ANSPs (less than 12 "yes" responses)

LEGAL/JUDICIARY

Cluster #1 (ANSP.L.2)	ANSPs
Have an agreement between ANSPs and judicial/police authorities to ensure protection of reported incident data and involved individuals.	*YES: 7 – NO: 30*
For a wide majority of ANSPs there is no agreement in place as described above. In some, the ANSP indicated that such an agreement would not be possible under national law. However, most noted that the protection of incident data and individuals involved is in any case ensured through national legislation. In one instance, the ANSP noted that collaboration between the ANSP and the police/judicial authorities was underway and in another response, the ANSP indicated that regular meetings took place between the bureau processing incident reports, the prosecutor and aviation actors, based on an agreement with the judiciary.	

3   ANS-related Accidents and Incidents

In this Chapter, Sections 3.1 and 3.2 show the trends in ANS-related accidents and incidents between 2004 and 2013 (preliminary incident data for 2013). The completeness and quality of safety data reporting and investigation are addressed in Section 3.3.

3.1   ANS accidents

> **ANS-related vs. ANS contribution**
>
> "**ANS related**" means that the ANS system may not have had a contribution to a given occurrence, but it may have a role in preventing similar occurrences in the future.
>
> "**ANS contribution**" means that at least one ANS factor was in the causal chain of events leading to an occurrence, or at least one ANS factor potentially increased the level of risk, or it played a role in the occurrence encountered by the aircraft.

The figure below shows the number of accidents involving commercial air transport (CAT) aeroplanes above 2,250 kg maximum take-off mass (MTOM), categorised as fatal and non-fatal accidents, and whether the accident had an ANS contribution or was only ANS related. Whereas the number of ANS related accidents has remained low and stable over the ten-year period, the number of ANS contribution accidents has decreased; in the most recent two years, there were no ANS contribution accidents.
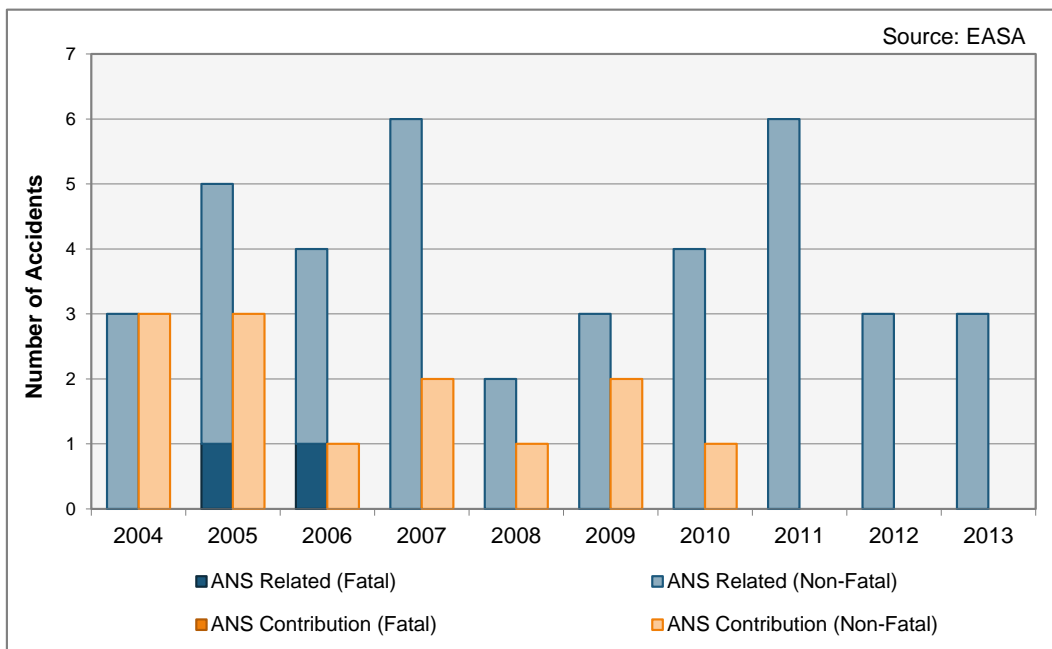
Figure 18: ANS fatal and non-fatal accidents

Occurrence categories are used as a means of describing and categorising occurrences. The categories shown in Figure 19 and Figure 21 were developed by the CAST-ICAO Common Taxonomy Team and are used around the world, providing a common means of identifying accident types and sharing analysis information. Figure 19 shows the occurrence categories assigned to ANS related and ANS contribution CAT aeroplane accidents over the last three years (2011-2013) and it can be seen that turbulence is a key factor in ANS-related/contribution accidents[5]. Multiple occurrence categories can be assigned to each accident, so some accidents, such as runway excursions, have also had the abnormal runway contact code assigned. Equally, where ground collision has been assigned, in some cases the ATM/CNS code was assigned. ANS contribution accidents have the ATM/ANS

category assigned, following which, the most common accident type is ground collision during taxi. These accidents are typically a combination of aerodrome infrastructure, capacity and ATM issues.
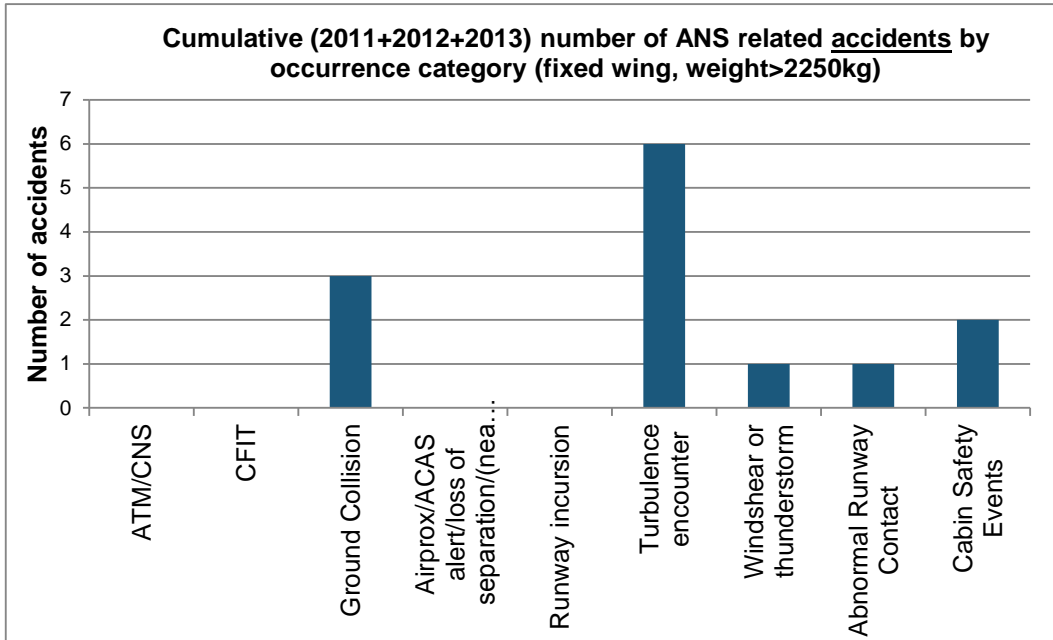

Figure 19: Number of ANS related accidents by occurrence category

3.2 Serious incidents

Commercial Air Transport Aeroplanes with a MTOM above 2,250 kg, were involved in 348 serious incidents between 2004 and 2013. The number per year is shown in Figure 20 and it can be seen that there is decreasing trend in both the ANS-related or ANS contribution categories.
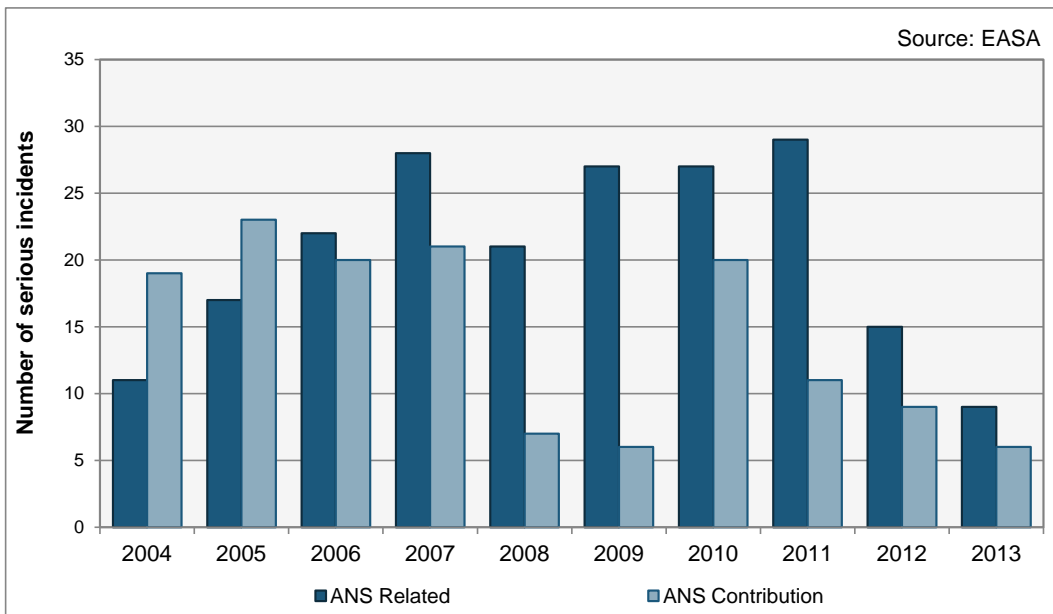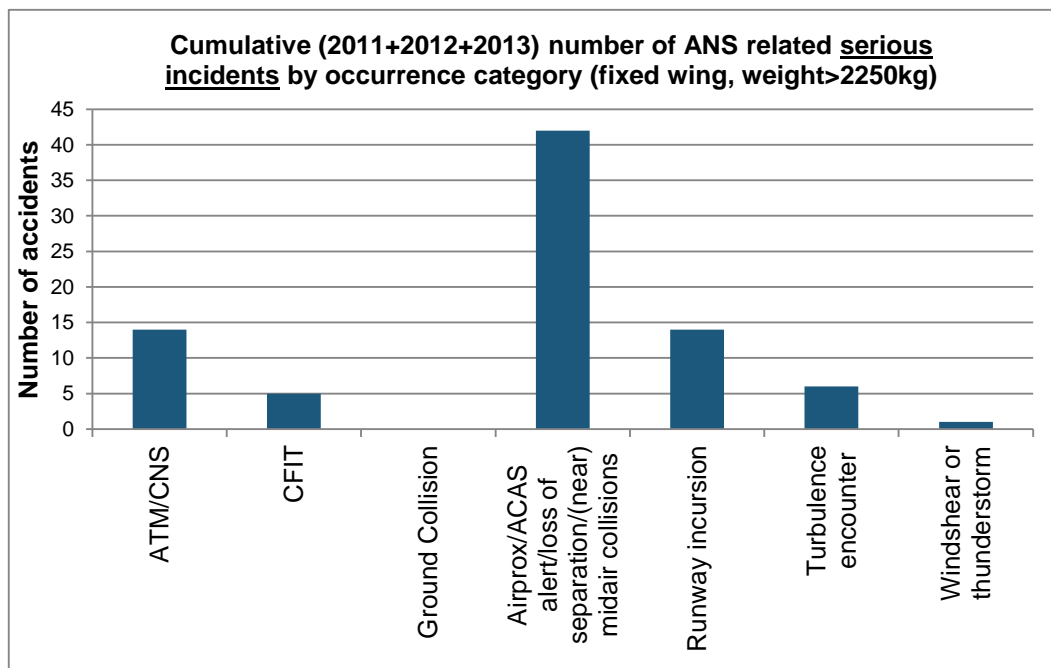

Figure 20: Serious incidents per year

Figure 21 shows the top five occurrence categories assigned to ANS related and ANS contribution CAT aeroplane serious incidents over the last three years (2011-2013) and it can be seen that near mid-air collisions is a key factor in these serious incidents. These are closely followed by ATM/CNS factors and then by runway incursion serious incidents. The implementation of automated warning systems, such as ACAS, has been proven to be extremely effective in preventing aircraft collisions and this is reflected in the relative positions of the mid-air collision and runway incursion categories in the accident and serious incident figures.

Figure 21: Number of ANS related Serious Incidents by occurrence category

Note that EASA ADREP database is limited to serious incidents reported by SIAs only.

3.2.1 Incidents

This section provides a review of ATM-related incidents reported through the AST mechanism based on the provisional 2013 data reported by the relevant Member States during the March 2014 reporting session. The report covers the EU 27 Member States, Norway and Switzerland.

The severity categories referred to in this section are in line with the ones defined in the EUROCONTROL Guidance Material to EASRR2 (EAM2/GUI1) and fully compliant with the provisions of the ICAO Annex 13.

Although reporting via the AST mechanism is a responsibility of the Member States, the severity classification of occurrences is based on the input received from the ANS provider(s), SIAs and/or CAAs depending on the institutional and/or operational arrangements implemented at national level.

3.2.2 Airspace - Separation Minima Infringements

Figure 22 shows the number of reported risk-bearing (Severity A and B) SMIs in Members Airspace. The number of occurrences reported in this category represents 12% of the total number of reported SMIs. This is a slight decrease when compared with the 2012 data (16%).
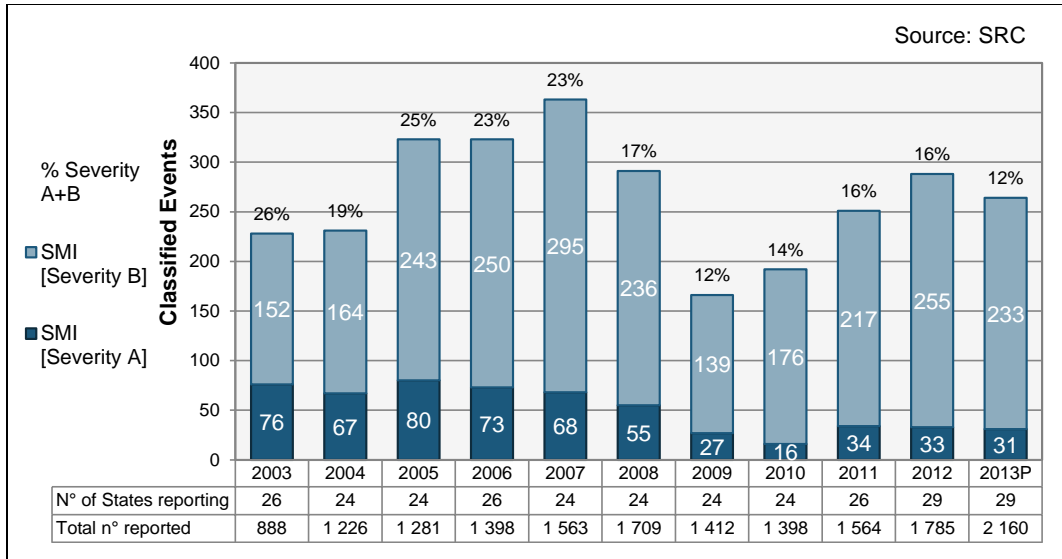
Source: SRC

% Severity A+B

■ SMI [Severity B]

■ SMI [Severity A]

| N° of States reporting | 26 | 24 | 24 | 26 | 24 | 24 | 24 | 24 | 26 | 29 | 29 |
| Total n° reported | 888 | 1 226 | 1 281 | 1 398 | 1 563 | 1 709 | 1 412 | 1 398 | 1 564 | 1 785 | 2 160 |

Figure 22: Reported SMIs in Member States (2003-13P)

Concerning the risk-bearing SMIs, in absolute numbers, the 2013 provisional data shows also a small decrease compared with the data reported in 2012 (final AST data):

- Serious incidents (severity class A) decreased in absolute numbers from 33 to 31.

- Major incidents (severity class B) decreased in absolute numbers from 255 to 233.

However, the total number of SMIs reported in all severity categories in 2013 has increased (17%).

Note that 6.5% of incidents reported in this category are still under investigation.

3.2.3 Airspace - Unauthorised Penetration of Airspace

Figure 23 shows an overview of the Unauthorised Penetrations of Airspace (UPAs), also known as Airspace Infringements (AIs), reported in Member States during 2003-2013.
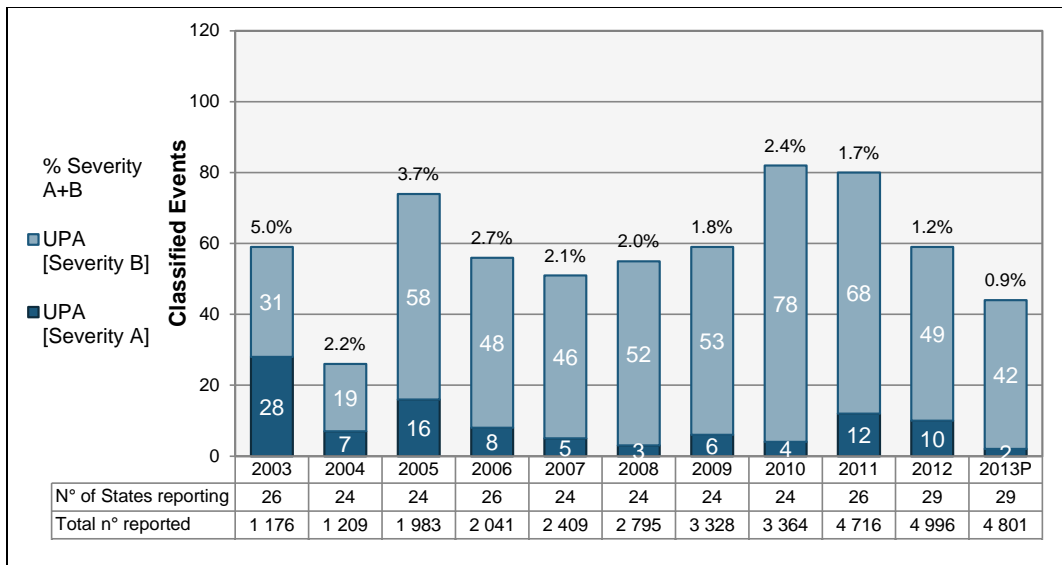
% Severity A+B

■ UPA [Severity B]

■ UPA [Severity A]

| N° of States reporting | 26 | 24 | 24 | 26 | 24 | 24 | 24 | 24 | 26 | 29 | 29 |
| Total n° reported | 1 176 | 1 209 | 1 983 | 2 041 | 2 409 | 2 795 | 3 328 | 3 364 | 4 716 | 4 996 | 4 801 |

Figure 23: Reported UPAs in Member States (2003-2013P)

The number of risk-bearing UPAs (Severity category A and B) represents 0.9% of the total number of reported UPAs. The total number of occurrences reported in this category during 2013 decreased by less than one percent compared with the previous year's figures.

Concerning the risk-bearing UPAs, in absolute numbers, the 2013 provisional data shows also a small decrease compared with the data reported in 2012 (final AST data):

- Serious incidents (severity class A) decreased in absolute numbers from 10 to 2.

- Major incidents (severity class B) decreased in absolute numbers from 49 to 42.

3.2.4   Airports - Runway Incursions

Figure 24 shows the number of reported risk-bearing (Severity A and B) RIs reported in 2013 in Member States. The number of occurrences reported in this category represents 5% of the total number of reported RIs. This is a slight increase when compared with the 2012 data (4%).

The total number of RIs reported in 2013 increased by around 9% compared with the previous year.

In absolute numbers, the 2013 provisional data shows also a small decrease compared with the data reported in 2012 (final AST data):

- Serious incidents (severity class A) increased in absolute numbers from 12 to 13.

- Major incidents (severity class B) increased in absolute numbers from 37 to 59.

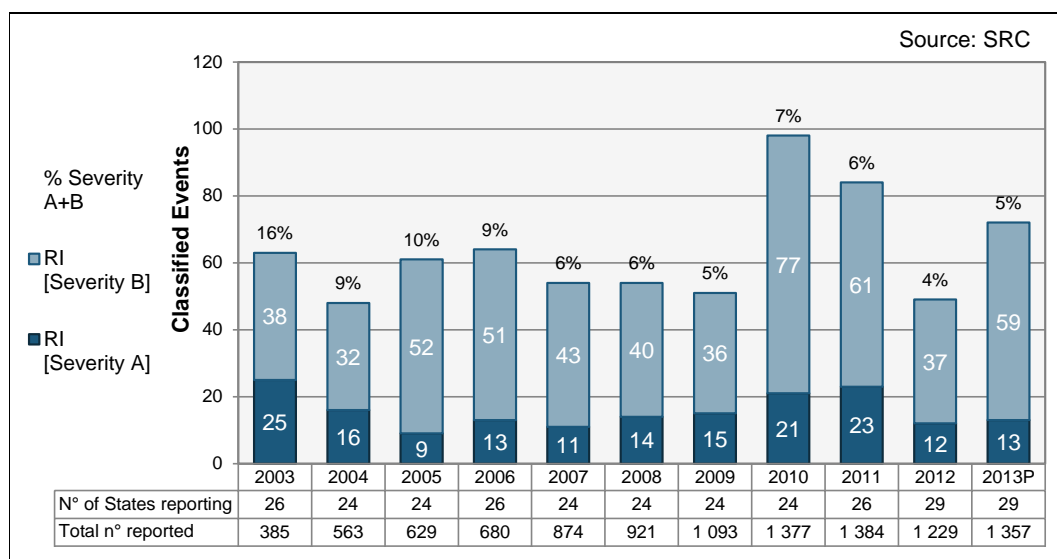Note that 8.5 % of the RIs reported in 2013 are still under investigation.

Figure 24: Reported RIs in Member States (2003-2013P)

3.2.5   ATM Specific Occurrences

This section provides a review of ATM specific occurrences reported through the AST, as updated in March 2013 based on the preliminary data for 2013.

ATM specific occurrences encompass those situations where the ability to provide safe ATM services is affected. ATM specific occurrences typically include failure of ATM/CNS technical systems which could have an impact on the safety of air navigation.
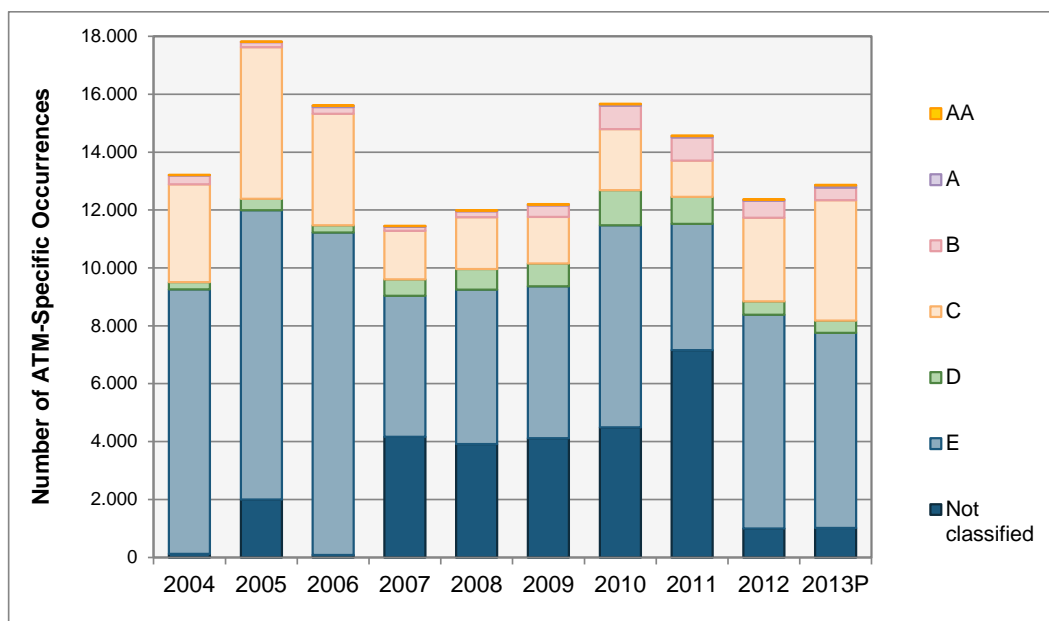
Figure 25: Reported ATM Specific Occurrences in Member States (2004-2013P)

The total number of occurrences reported in 2013 increased by almost 4% compared with the previous year's figures.

The number of occurrences that had a serious impact on the ANS Providers to supply ATM services has evolved as follows compared with the previous year:

- Severity class AA (total inability to provide ATM Services) increased from 10 to 18;

- Severity class A (serious inability to provide ATM Services) increased from 34 to 83;

- Severity class B (partial inability to provide ATM Services) decreased from 588 to 428.

It is notable that the number of ATM specific occurrences not severity classified increased by approximately 2.5% compared with the previous year's data.

Observed increasing trends in reporting of all three types of occurrences monitored by Performance Scheme can possibly suggest improvement in the reporting moral of the States. However, as this observation is based on preliminary 2013 data, firm conclusions cannot be made, nevertheless this observation will be closely monitored in the future.

3.3 Reporting and Investigation

This section provides a review of quality and completeness of ATM safety occurrences (incidents and ATM specific occurrences) reported through the AST mechanism in March 2013.

3.3.1 Level of Reporting

The number of States reporting safety occurrences to EUROCONTROL has shown a slow but steady improvement over the past years. As such, in 2013, all the 27 EU Member States (within the scope of RP1) together with Switzerland and Norway reported the AST covering the 2013 reporting year in time. This is quite a success that was made possible by the endeavour of the nominated Member States AST Focal Points.

3.3.2   Total Number of Human Reports

Based on 2013 preliminary data, the number of severity not classified or severity not determined (category D) for the above categories of occurrences has overall decreased by 20% compared with the previous year's data.
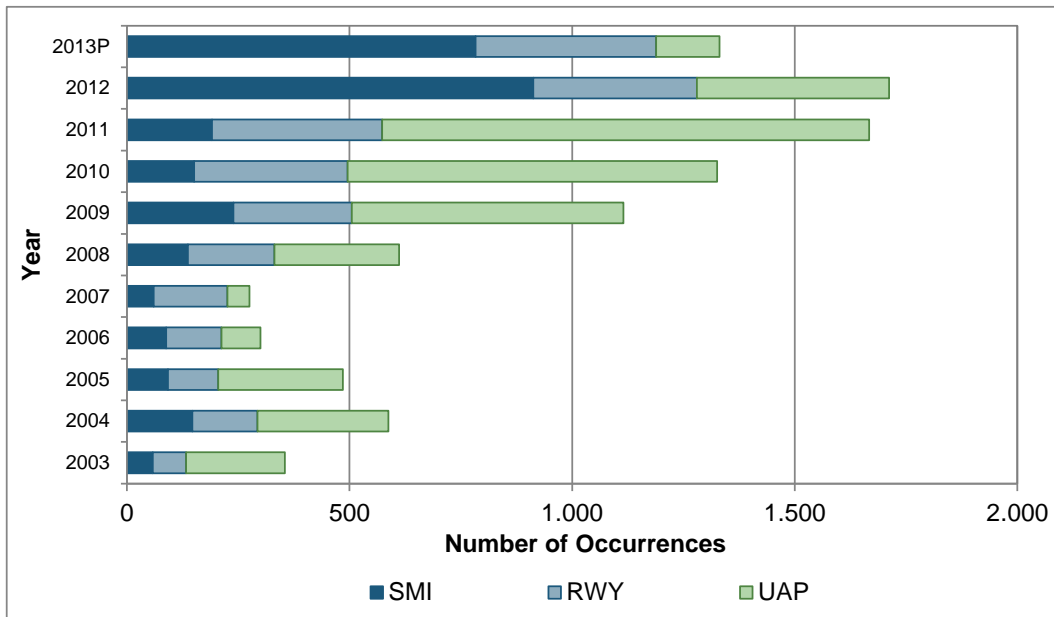

**Figure 26: Severity NOT Classified or NOT Determined (2003-2013P)**

It is to be mentioned that, whilst the number of severity not classified or not determined UPAs and SMIs have decreased, an increase can be observed in case of RIs.

The current situation is generated by the limited resources available at national level for the conduction of the severity assessment and reporting via the AST mechanism. The situation is monitored as part of the September 2014 AST reporting session.

3.3.3   Completeness of safety data reported via the AST mechanism

A thorough analysis of the completeness of the safety data reported via the AST mechanism is going to be conducted after the September 2014 AST reporting session that will consider the final data covering the 2013 reporting year.

The analysis below covers the final data reported via the AST mechanism for 2012.
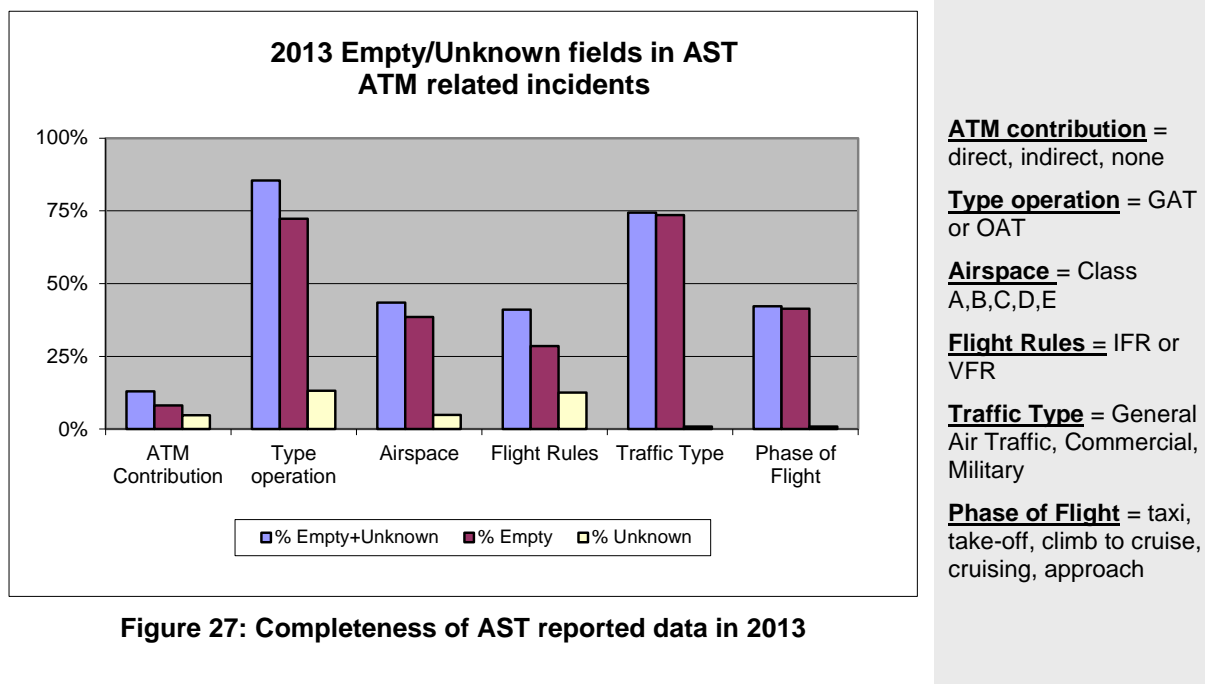
Figure 27: Completeness of AST reported data in 2013

The amount of fields left blank is much higher than the field where the word "unknown" was inserted.

ATM contribution to the occurrence is the most relevant data for determining the performance of the ATM system. This is left blank in case of over 8% of the reported incidents (which represents a decrease from the previous year, when it was over 25%).

In addition, data related to the aircraft involved (e.g. type of Operation, Flight Rules, Phase of Flight and Traffic Type) is not available for roughly 50% of the reported operational occurrences. This type of data is not sensitive and do not fall under the issue of Just Culture. Therefore, it is evident that built-in lack of interest from data providers appears as a more realistic reason for incomplete reporting. As a consequence, this lack of completeness of AST data diminishes the capability of safety analysis at European level.
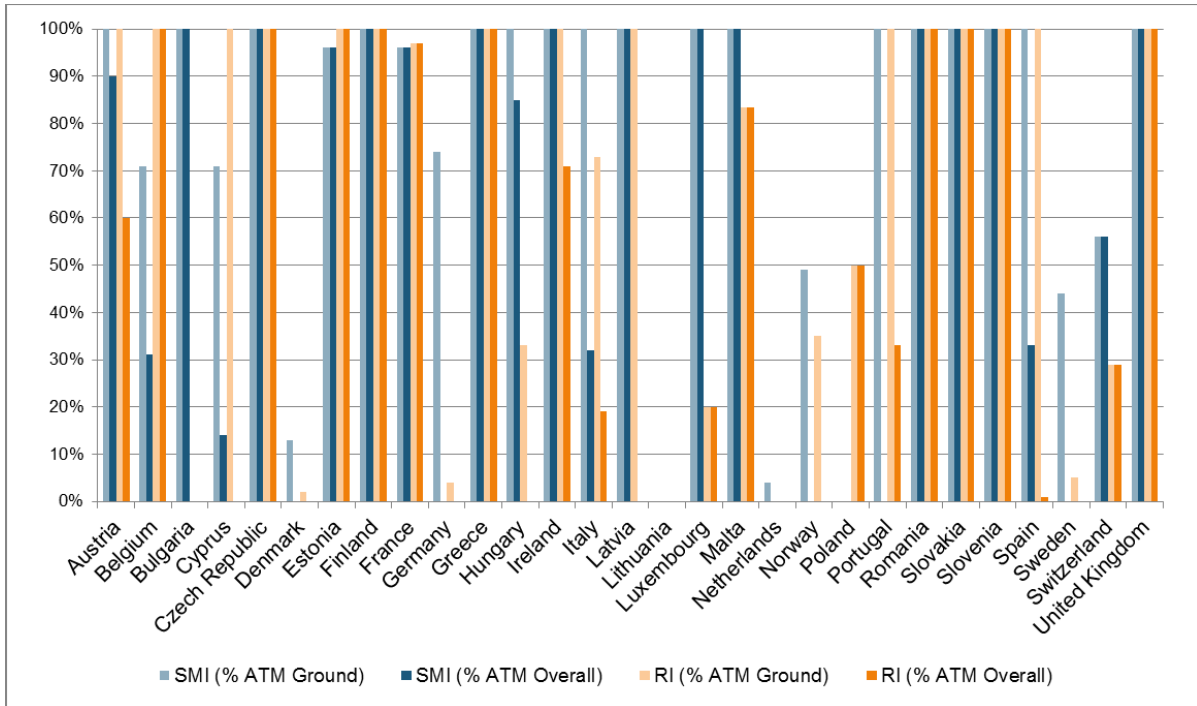
3.3.4   RAT methodology application for severity classification

The AST mechanism was the chosen vehicle for the reporting of the application of the RAT methodology in the context of the Performance Scheme Regulation (EC) 691/2010.

It is to be mentioned that a blank return stands for cases where no such occurrence was reported by the respective Member State (e.g. ANSP below the 50,000 movements threshold established by the Regulation), the RAT methodology was not applied or no data was made available.

Figure 28 and Figure 29 provide an insight in the application of the RAT methodology in the Member States during 2013 based on the data reported by the States in March 2014, for SMIs, RIs and ATM Specific Occurrences respectively. The scope of the assessment should be ATM Overall. However, it is acknowledged that, in most of the Member States, this task was performed by the ANS providers involved in the occurrence on behalf of the State, hence the scope was in most of such cases restricted to ATM Ground.

As such (see Figure 28), there are only seven Member States that used the RAT methodology for the severity assessment of the reported SMI in 100% of the cases (one less than last year). In case of RIs, according to the same figure, there are only seven Member States that used the RAT Methodology for the severity assessment of the reported RI in 100% of the cases (one more than last year).

Figure 28: RAT methodology application for severity classification of SMIs and RIs

In case of ATM Specific Occurrences the scope of the severity assessment is ATM Overall only. There are 13 Member States that used the RAT Methodology for the severity assessment of the reported ATM Specific Occurrences in 100% of the cases (Figure 29).
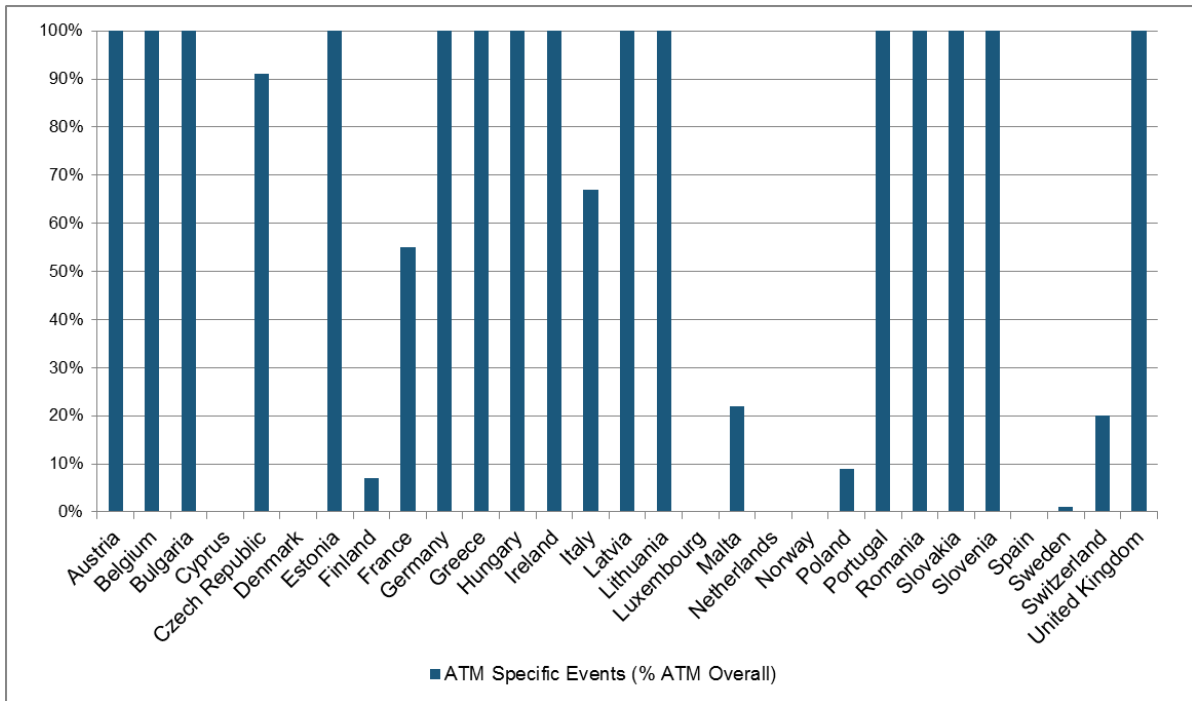
Figure 29: RAT methodology application for severity classification of ATM Specific

Please note that the data concerning the verification of the RAT application is based on preliminary 2013 information. Therefore, updates are expected during the September 2014 AST reporting session. The PRB will update the Dashboard with final 2013 data on the application of RAT severity classification during October 2014.

4   Conclusions and Recommendations

The following is the list of the key conclusions and recommendations made after the review of the National/FAB Monitoring Reports and verified results of monitoring of SPIs for the second year of the first Reference Period of the Performance Scheme:

- The EoSM scores (based on self-assessment) by the individual States indicate that there has been potential improvement in their safety management since last year, with approximately 80% of the States scoring above 50, which is more than in 2012 (i.e. only six (6) States are below score 50).

- After the verification done by EASA, the overall conclusion is that the majority of States have taken into account the results of the EASA's inspection, adjusting their scores to reflect the situation found during the visit. With the exception of four (4) States out of 16 inspected States, the replies correspond with the situation observed (in general 75% of the self-assessed replies are generally correct).

- The PRB acknowledges improvements made, however, urges States to put additional effort in the final year of RP1 to achieve higher levels of safety management, as verified results of the EoSM questionnaires still show that implementation of safety management principles at State level are below implementation levels of ANSPs.

- The PRB notes with dismay that safety is still taken lightly by the States; the main reasons possibly being the lack of adequate resources (or resources overall) necessary to put in place safety elements required by the Performance Scheme. The PRB believes that this might have serious consequences especially in light of RP2 safety targets.

- Moreover, the PRB is of opinion that the fact that some States, despite EASA audit visits, might have ignored results of those is creating a flawed performance scheme (situation noticed in 4 out of 16 States inspected).

- Safety Culture is again the weakest area at both State and ANSP level. Most of the States again have reported that the need to have a process for implementing and putting in place the measurement of safety culture is not yet recognised. States are urged to put additional effort and speed up the process of implementing and putting in place the measurement of safety culture.

- The EU averages for application of RAT severity methodology (for SMIs, RIs and ATM-S) show improvement in comparison with the first year of reporting, however improvements are rather small on the State level as the RAT methodology for severity assessment of RIs is applied in less than half of the cases (for SMIs and ATM-S approximately 60%). Therefore, States are encouraged to continue additional efforts to enable further enhancements in reporting and application of RAT methodology by seeking, planning and applying training on this matter. States requiring support in applying severity classification using the RAT methodology should contact EUROCONTROL DPS/SSR.

- Observed increasing trends in reporting of all three types of occurrences monitored by Performance Scheme can possibly suggest improvement in the reporting moral of the States. However, as this observation is based on preliminary 2013 data, firm conclusions cannot be made, nevertheless this observation will be closely monitored in the future.

- As for the completeness of data received through AST mechanism, it can be observed that the ATM Occurrences contribution data is left blank in case of 8% of the reported incidents, which is an improvement from previous year (it was 25% in 2012). In addition, data related to the aircraft involved is not available for roughly

50% operational occurrences. Therefore, it can be observed that as a consequence, this lack of completeness still diminishes the capability of safety analysis at European level. Therefore, the PRB recommends States to improve the completeness of safety data reported via the AST mechanism.

- With regards to the reporting by Member States and their ANSPs the level of presence and corresponding level of absence of JC, the PRB notes that the reports have shown some improvements in the reporting of the level of JC from RP1, Year 1. However, the PRB recommends that States devote the necessary investment to the effective implementation of the JC policy that has been put in place. In particular, the PRB stresses the importance to give more importance to systematically including JC elements in the training curricula.

- Finally, the PRB notes with concern that a vast majority of ANSPs have reported there is no agreement in place with the judicial/police authorities to ensure the protection of reported incident data and the individuals involved. The PRB advises the EC to urges the States to make every possible effort to encourage the conclusion of the necessary arrangements in order to have cooperation between the relevant actors involved in safety investigation. The agreements will allow the States and the ANSPs to clarify their responsibilities and ensure the adequate protection of a reporter or a person mentioned in occurrence reports, thereby ensuring compliance with Regulation (EU) No 376/2014 and Regulation (EU) No 996/2010.

Endnotes

[1]   In accordance with the methodology agreed by all stakeholders during the 2nd EASA/PRB meeting on Performance SKPIs.

[2]   The EASA database captures the following: Accidents & serious incidents within EASA Member States (all mass categories), accidents to aircraft with MTOM > 2250kg (worldwide); serious incidents to aircraft with MTOM > 5700kg (worldwide).

[3]   "ANS-related" means that the ANS system may not have had a contribution to a given occurrence, but it may have a role in preventing similar occurrences in the future.

[4]   "ANS contribution" means that at least one ANS factor was in the causal chain of events leading to an occurrence, or at least one ANS factor potentially increased the level of risk, or it played a role in the occurrence encountered by the aircraft.

[5]   Note that ARC and CABIN categories were included in the scope as ANS had contributory factor in this occurrence.