

ESP[✈] STAKEHOLDERS' REPORT

December 2006 - European Safety Programme for ATM Stakeholders' Report



EUROPEAN SAFETY PROGRAMME FOR ATM (ESP) STAKEHOLDERS' REPORT





CONTENTS

Editorial by Co-Chairmen of ESP Implementation Coordination Group	2
ESP Programme Manager's Introduction	3
ESP ACTIVITY FIELD 1 Implementation and Support to European Safety Legislation/Regulation	4
ESP ACTIVITY FIELD 2 Incident Reporting and Data Sharing	7
ESP ACTIVITY FIELD 3 Risk Assessment and Mitigation in Day-to- Day Operations	9
ESP ACTIVITY FIELD 4 System Safety Defences	11
ESP ACTIVITY FIELD 5 Safety Management Enhancement	12
ESP Research and Development Activities	14
ESP Implementation Reporting and Monitoring	15
ESP Photography Competition	17

EDITORIAL



Alexander Skonieczki (DAP/SSH)
Co-Chairman ESP Implementation Coordination Group



Peter Stastny (SRU)
Co-Chairman ESP Implementation Coordination Group

Welcome to the first European Safety Programme for ATM (ESP) Stakeholder Report. Launched at EUROCONTROL HQ on 28 February 2006, the ESP aims to build on the success of its predecessor, the European Strategic Safety Action Plan (SSAP) by continuing to enhance the maturity of the safety frameworks of the European ATM network across the 42 ECAC states. With the predicted growth in air traffic and the considerable challenges set by the introduction of the SES, it is essential that the momentum gained during the implementation of the SSAP is taken forward. Whilst the SSAP was, by necessity, a reaction to the tragic events at Linate and Ueberlingen in 2001 and 2002, the ESP provides a proactive approach to safety enhancement which will bring identifiable benefits across a range of safety regulation and safety management requirements.

The success of ESP will rely on continuing the development of the relationships established between the various stakeholders. Indeed, stakeholders were consulted extensively during the development phase of the Programme and the recommendations and deliverables in the ESP reflect their priorities. Also, in accordance with stakeholders'

wishes, the implementation and monitoring processes have been streamlined to reduce the burden of work. ESP activities are pitched at a higher level than those in the SSAP. Consequently, whilst the SSAP had 386 work packages, there are only 70 ESP recommendations and of these 12 are aimed at State Regulators and 16 at ANSPs. The recommended actions are contained within 5 ESP Activity Fields and progress in each area will be described later in this Report.

ESP activities are being managed by an internal EUROCONTROL steering group, the ESP Implementation Coordination Group (ICG). The ICG ensures coherency of actions within and between the Agency and SRC and in turn reports to the Safety Team (ST) and the SRC. These fora provide a voice for external stakeholders in the safety management and safety regulatory areas respectively. Other bodies such as the CESC, SCG, CMIC and PC will also be kept informed of developments throughout the lifetime of the ESP.

The ICG is co-chaired by the Head of the SRU, Peter Stastny, and his new counterpart from the Safety, Security & Human Factors Division (DAP/SSH), Alexander Skonieczki. Alexander is a welcome addition to the ESP fold and he has signaled his whole-hearted support to the aims and objectives of the Programme. The former ICG co-chair, Dr Erik Merckx, has recently taken up the appointment as Deputy Director EATM Programmes within the Agency. Whilst he has relinquished his day-to-day involvement in the Programme, he remains committed to the ESP and his appointment will ensure its continued high profile within EATM. He will also, for the time being, continue to chair the Safety Team (ST). He will be helped in this role by Hans-Jürgen Morscheck from DFS who has been elected

by the ST members as vice-chair to facilitate a direct service provider input to the workings of the Team. This change in the ST's constitution accords with stakeholders' requests and is an example of how recent changes to EUROCONTROL structures is enabling it to shift its focus and be more service oriented. The ESP Programme Manager, Tony Licu, and his team of Thread Leaders from the Agency and SRU, and specialist support staff will also provide the necessary guidance to stakeholders to ensure the timely implementation of the ESP recommendations.

Thus, the foundations for a successful outcome are in place. We are confident that the ESP will make a difference to ATM safety in Europe. The early signs are encouraging and we look forward to your continued support and commitment to this vital safety initiative.

We welcome any comments you may have on the contents of this Report or of the ESP in general via, esp@eurocontrol.int.



INTRODUCTION

by Tony Licu, ESP Programme Manager, November 2006



Dear Stakeholders,

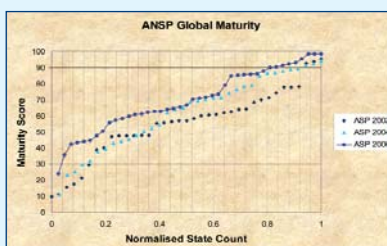
I would like to welcome you to this first European Safety Programme for ATM (ESP) Stakeholder Report. The Programme has been active for about 8 months and it is our intention to present the first steps that have been accomplished since its formal launch in February 2006.

The principal objective of ESP is to raise the maturity of ATM safety frameworks in all ECAC States to a common minimum level of 70% maturity by the end of 2008. The results of the 2006 Safety Framework Maturity Survey will act as a baseline for the ESP and as the slides show although there has been significant improvement since 2002 there is still a considerable way to go if we are to meet our target.

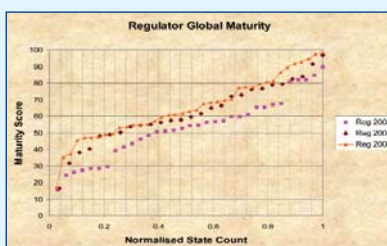
Safety is more than the absence of accidents. Safety has the goal of transforming the levels of risk that are inherent in all human activity, while its interdisciplinary nature extends its influence far into most corporate management and regulatory actions. Like the ancient God Janus, "safety"

has 2 facets: backward to the past and forward to the future. In ESP we like to think that we are now in a forward looking mode, getting away from the tendency to communicate future risk based only on the analysis of past accidents. Unfortunately for aviation and the ATM community this year we have been put back on an investigative footing due to a number of fatal accidents, where ATM might have played a role:

- Comair 5191 - At dawn on Sunday 27 August 2006, a commuter jet crashed and burst into flames while attempting to take-off from Blue Grass Airport (Lexington/ Kentucky), killing 49 people.
- Gol Flight 1907 - On 29 of September 2006, a B737-800 Next Generation disappeared from radar after leaving Manaus on route to Brasilia. While en route the jetliner collided with an Embraer EMB-135BJ Legacy 600 business jet. The Embraer was able to land safely at Serra de Cachimbo with a damaged wing and tail. All 154 occupants of the B737 perished.



ANSP improvement in maturity 2002-2004-2006



State ATM Regulator improvement in maturity 2002-2004-2006

Notwithstanding these setbacks, I would like to add a positive note - I am convinced that flying is safe. Statistics continue to show that flying is still the safest means of transportation. Across Europe over 9 million flights are successfully completed each year. Aviation professionals have put in place checks and balances, some operational, others regulatory, to ensure that the system remains safe; ESP seeks nothing more than to add safe checks and balances in Air Traffic Management and thus to prevent "normal accidents".

As you will see in the remainder of this report, the EUROCONTROL Thread Leaders of each ESP Activity Field are already working hard to deliver their first results and to set up the framework for the safety activities to be undertaken by stakeholders up to 2008. To those of you who are responsible for delivering the ESP, we will continue to communicate with you periodically through these Stakeholder Reports. In addition, to provide you with the very latest news we will be producing an ESP e-bulletin and will continue to post ESP related information on our protected and public web sites.

I wish you an enjoyable and informative read.

ACTIVITY FIELD 1 IMPLEMENTATION & SUPPORT TO EUROPEAN SAFETY LEGISLATION/REGULATION

by Gilles Le Galo and Peter Stastny



**Gilles Le Galo
(DAP/SSH)**
SASI Project Manager
ESP Activity Field 1
Thread Leader



**Peter Stastny
(SRU)**
ESP Activity Field 1
Thread Leader

ACTIVITIES AND DELIVERABLES:

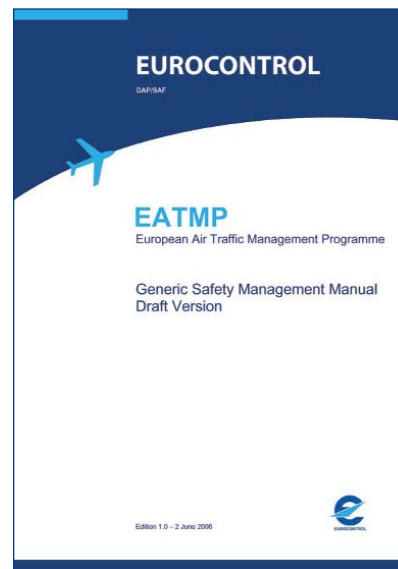
- SASI
- EUROCONTROL Generic Safety Management Manual.
- Oversight of ESARRs:
 - ESIMS
 - EAM Guidance Material
 - Transposition of ESARRs into EU Law
- Safety Regulatory Training (SeRT)

The following activities have taken place since the launch of the ESP. (The ESP Recommendation Numbers in brackets are from the ESP Programme Document - see www.eurocontrol.int/esp)

SUPPORT TO ANSPs FOR SAFETY MANAGEMENT SYSTEM IMPLEMENTATION (SASI) (ESP Rec 1.2.1)

The SASI project has once again proved highly popular with a large number of

“less mature” ANSPs. Lead by the Agency Thread Leader, Gilles Le Galo, 6 working sessions and 11 training sessions have taken place in numerous countries on a regional basis. All working sessions and training sessions have been well attended and by the end of 2006, 544 (2005 and 2006 cumulated) people from 21 ANSPs will have taken part in SASI activities. In 2006 all of these events have been assisted with funding secured from EUROCONTROL. Without this funding it is doubtful whether a significant number of the delegates could have participated in the scheme. There can be no doubt that the SASI initiative is making a major impact on the development and awareness of SMS in European ATM as the yearly SMS Implementation Maturity Study has shown. A draft SASI programme for 2007 will be drawn up following a Working Session with CEOs in December 2006 which aims to define future priorities. This may include an extension of the SASI project to 5 EMAC states in 2007. The so called SASI-E project received the full support and commitment from the EMAC States at their 6th EMAC meeting. The project is awaiting approval for funding by the European Commission.



EUROCONTROL GENERIC SAFETY MANAGEMENT MANUAL (EGSMM) (ESP Rec 1.2.1)

A significant deliverable related to the SASI programme was the release of the draft EUROCONTROL Generic Safety Management Manual in June 2006. This publication is a major milestone in the provision of guidance for ANSPs and contains a wealth of useful information for those taking the first steps of implementing an SMS.



The EGSM provides for a generic set of SMS procedures that can be easily customized to the specific local and varied environments in which various ANSPs operate.

To order your copy of the EGSM please visit www.eurocontrol.int/esp and complete the registration form.

REGULATORY ISSUES

ESIMS (ESP Recs 1.1.5 & 1.4.3)

To continue implementation of the ESARR Implementation Monitoring and Support Programme (ESIMS) as agreed by the Permanent Commission of EUROCONTROL, a visit schedule for 2006-2007 has been agreed with States and coordinated with the Universal Oversight Audit Programme (USOAP) through the Memorandum of Cooperation with ICAO. Links with other European audit programmes are now being explored.

Being aimed at bodies with safety oversight of General Air Traffic, the question of military participation in ESIMS visits has been raised with particular reference to those cases where military ANSPs provide ATC services to civil aircraft. It was agreed at the CMIC 25 meeting in May 06 that State Military Authorities will be included in the scope of future ESIMS visits although, pending further legal clarification, their actual participation would be voluntary at this stage. This is a step in the right direction as participation by the

State Military Authorities will help provide a more complete picture of the state of the whole European ATM Network.

At the SRC 26 meeting, also in May, it was agreed that the SRC Coordination Group (SRCCG) would develop proposals regarding the release of ESIMS audit information to the public after appropriate consultation with States to ascertain national views, policies and concerns. As part of this consultation process, an ESIMS Workshop was held in Brussels on 12 September 2006. Major discussions took place about the disclosure of ESIMS gathered data especially in the context of the decisions taken in June 06 by ICAO about the release of data gathered during the USOAP. The outcomes from the SRCCG and Workshop were presented to SRC 27 at the end of September 06, and a proposal was forwarded to the Provisional Council at its November session.

ESARR IMPLEMENTATION - TRANSPOSITION INTO EU LAW (ESP Recs 1.1.3, 1.4.1, 1.4.2, 1.5.1)

The European Commission is continuing with the programme to take all ESARR requirements into Community Law. EUROCONTROL (SRU) is working closely with the EC to support this process.

An initial draft EC Regulation transposing ESARR 1 into Community Law has been circulated to the Single Sky Committee (SSC). In addition, as part of the consultation process, workshops have been held

by the EC on 30th May 06 (at EUROCONTROL HQ) and on 28th September (at EC HQ). The EC aims to publish a specific regulation on the Safety Oversight of ATM in the coming months to align as far as possible with the implementation deadline for ESARR 1 (November 2007). Initial work is also now getting under way on the transposition of ESARR 6.

Following discussions held at SRC 26, the SRU produced an appraisal of the differences between ESARR provisions and EC regulatory material used to transpose the ESARRs, together with an assessment of the safety impact for those provisions not yet transposed. The assessment was done from a regulatory and operational perspective, relying on external and independent inputs. A number of recommendations were raised and will be communicated to national safety regulatory authorities.

SeRT (ESP 1.1.4, 1.5.2)

The SeRT programme continues to support stakeholders' needs and makes a significant contribution to the effective delivery of both ESARRs and SES Regulations in the safety area.

The established e-learning course on the international ATM safety regulatory context and approved ESARRs is now a prerequisite for all SeRT courses. Two further courses, focused respectively on tools to enhance occurrence reporting and assessment and the safety regulatory principles of ESARR2, continue to be suc-

cessfully delivered. In all, 74 persons were trained from mid 2005 till mid 2006, significantly supporting the improvement of the reliability of safety data being reported annually to EUROCONTROL under ESARR2.

The EUROCONTROL Safety Audit Course also continues to be very well attended. Fifty six people out of the 70 trained from mid 2005 till mid 2006 have passed the related examination. A major contributor to the standardization of safety audits in ATM across Europe, the philosophy and procedures taught apply in other aviation domains offering the potential for future synergy with EASA in this field.

Design work for 2 additional SeRT courses on the key principles of ATM safety regulation and on the safety regulatory principles of ESARR 4 has been completed, and pilot courses were delivered in early 2006. In the middle of the year, design was also started on 2 new SeRT courses - the safety regulatory principles of ESARR 3 and the safety regulatory principles of ESARR 5.

SeRT courses are seen to be extremely relevant to customer needs, and contribute to the effective delivery of both ESARRs and SES Regulations in the safety area. Predicted future demand remains high, with NSA's in Europe being established and needing to be further developed. EASA has identified the same need to improve the competence level of safety regulation professionals in other aviation domains.



ACTIVITY FIELD 2

INCIDENT REPORTING AND DATA SHARING

by Dragica Stankovic & Charlie Govaarts



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ESP Activity Field 2
Thread Leader



Charlie Govaarts
(SRU)
ESP Activity Field 2
Thread Leader

and indicators. Additionally, continuing the work needed to establish a “Just Culture” environment is a priority area and the merging of safety databases, such as the ESARR 2 - AST (Annual Summary Template database, to facilitate a single ATM safety repository is another. In this regulatory field, improvement of mandatory safety data flows, with respect to its quality and timeliness, is being undertaken. Crucially, contact with airlines’ associations and their members has also been reinforced. This is indicative of the need for the ATM fraternity to break out of its mould and begin the process of evolving a more holistic aviation approach to safety, and safety reporting and analysis in particular.

JUST CULTURE (ESP Recs 2.1.2, 2.2.1.B, C, D & E, 2.4.3, 2.5.2 & 2.5.5)

JUST CULTURE

Actions to create an awareness and educational campaign for the public, media, legislators and national judicial systems on the benefits of a ‘Just Culture’ within aviation have begun. On 16 October a workshop, organized by the EUROCONTROL Safety, Security and Human Factors Division (DAP SSH) and the Legal Department, was held in Brussels attended by over 170 people from across the aviation and legal / judicial spectrums. Speakers from ICAO, EUROCONTROL, the EU and various Stakeholders provided a range of perspectives on the merits and difficulties of establishing ‘Just Culture’. A number of case studies were also analysed and created lively debate. They also underlined how difficult it will be to remove the impediments to reporting given the diverse nature of the European states’ legal and judicial systems. Nevertheless, the work-

shop was a success and has paved the way for a similar workshop to be held next year which will cover the part the media has to play in this complex and challenging area.

COOPERATION WITH ICAO - ‘JUST CULTURE’ AND OCCURRENCE REPORTING AND ATM INCIDENT DATA COLLECTION

In line with the SAFREP recommendations, to make ‘Just Culture’ and ATM Occurrence reporting and data collection global, ESP has started cooperation with ICAO. The focus is on States from the Eastern part of the ICAO EUR region (Azerbaijan, Armenia, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan).

As a first step, ESP Activity Field 2 assisted in drafting the “Strategy” related to the implementation of SMS covering among the other items ‘Just Culture’ and Occurrence Reporting within the above listed states. The draft Strategy has been produced following ESARR2 and 3 requirements as well as other ESARR supporting documents. After passing the approval process within ICAO Air Traffic Management Group East (ATMGE) working group, the draft Strategy will be submitted to the ICAO European Air Navigation Planning Group (EANPG) for final approval.

JUST CULTURE GUIDANCE MATERIALS

EAM 2/GUI 6, “Establishment of ‘Just Culture’ Principles in ATM Safety Data Reporting & Assessment”, Edition 1.0 was released on 31st March 06. A pdf version for download is available at the SRC website.

Work has also been completed on the Technical Requirements for the 3 EUROCONTROL Guidance Materials, which will

ACTIVITIES:

- Implementation of SAFREP Recommendations.
- Just Culture
- Incident Reporting and Data Sharing
- Information Exchange - Cooperation with Airlines
- EUROCONTROL Single ATM Safety Repository
- Safety Performance Indicators

ESP Activity Field 2 carries over unfinished work from the SSAP. Indeed, Incident Reporting and Data Sharing made the least progress of all the activities undertaken in the SSAP and there is still much to be done. Nonetheless, the ESP has re-invigorated the various activities and work has begun in earnest to implement the recommendations contained in the Safety Data Reporting and Data Flow Task Force (SAFREP) Report. These have been transposed into ESP Recommendations and Deliverables. As described later, and in response to stakeholder needs, the SAFREP TF has been re-convened to tackle the vexed issue of safety performance targets

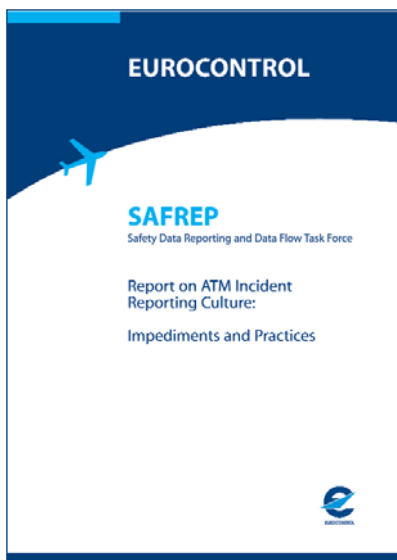
facilitate the implementation, at national level, of a legal framework supporting the establishment of a "Just Culture" in ATM:

- **Interface with Regulators and Judicial Authorities - Just Culture.**
- **Robust and Cost Efficient Incident Data Collection and Analysis System/Process.**
- **Interface with Media.**

The work to produce the documents is due to start soon.

INCIDENT REPORTING AND DATA SHARING

VOLUNTARY INCIDENT DATA EXCHANGE - COOPERATION WITH THE AIRLINES



The SAFREP recommended that there should be continued encouragement and support for the exchange of voluntary incident and safety risk information, for the purpose of disseminating and sharing safety data and corresponding lessons learned to the widest professional audience. Consequently, activities have started on the

voluntary ATM incident data exchange with the airlines' associations (ERA, ELFAA, IACA, AEA and IATA). So far 2 meetings have been held and it has been agreed that it is necessary to start the implementation of SAFREP recommendations as soon as possible. It was further agreed that:

- The sharing of ATM incident data is important for all stakeholders.
- The start of the data exchange should be the historical and current airlines incident data provided through the Airlines' Associations to Eurocontrol.
- It is necessary to establish the mechanism, processes, principles and criteria for the data exchange and the quick-fixing of identified problems.
- The scheme should follow safety confidentiality principles

To date, 20 of the largest airlines have started to provide data. In less than two months more than 300 ATM incident reports have been received. Half of them have been already loaded in the EUROCONTROL TOKAI data base. The next steps are preparation of the statistical analysis and further promotion of the ATM incident data collection among the airlines and ANSPs.

SINGLE ATM SAFETY DATA REPOSITORY - MERGING OF EUROCONTROL ATM SAFETY DATA (ESP Rec 2.2.1F)

ESP Activity Field 2 has also started activities on the establishment of a single EUROCONTROL ATM Safety Data Repository, which should:

- Consist of the safety data currently collected by different departments in EUROCONTROL including voluntary and mandatory analysed safety data
- Make it easier for Stakeholders to find and access necessary safety data ratio-

nalising these activities within the Agency by applying harmonised criteria for analysis and having better quality etc.

- Help outside safety data users to have all or main safety data in one place, available through internet access.

First analysis regarding different safety data spread across the Agency has been completed. The following safety data bases were found:

- ACAS,
- 8.33 kHz Channel Spacing,
- RVSM, Loss of Communications.

The analysis showed that there is:

- Understanding and support of having a single point for the ATM safety data collection and high level analysis
- Need for one Eurocontrol ATM Safety Repository enabling easy safety data sharing

The next steps are related to the dedication of adequate resources for this activity, and to plan how and when to move listed safety data into a future ATM Safety Repository.

SAFETY PERFORMANCE INDICATORS (ESP Rec 2.1.4 & 2.2.1G)

The development of safety indicators to enable effective measurement of safety levels is a constant concern of our stakeholders. Difficulties persist in identifying appropriate safety KPIs that truly measure the ATM system performance and it has therefore been recommended that the SAFREP task force be reconvened to study this area in greater detail. The aim is to find a way ahead in the identification and use of safety related data whilst at the same time protecting the confidentiality and avoiding benchmarking between ANSPs.

ACTIVITY FIELD 3

RISK ASSESSMENT AND MITIGATION IN DAY-TO-DAY OPERATIONS

by Patrick Mana & Françoise Girard



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ESP Activity Field 3
Thread Leader



Françoise Girard
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Thread Leader

ACTIVITIES:

ESARR 4 :

- Development of a Design Risk Classification Scheme
- SAM (Safety Assessment Methodology)
- Guidelines:
 - ATM Procedure Safety Assessment
 - Safety Case development
 - Assess and Manage Degraded Modes of Operation
 - Define and Assess Changes to ATM System
 - Human Factors aspects of Safety Assessment
 - Promote Safety Assessment Practices

Since the launch of the ESP earlier this year, the following progress has been made in Activity Field 3 and some deliverables have already been achieved.

ESSAR 4 (ESP Rec 3.2.1)

SAFETY ASSESSMENT METHODOLOGY (SAM)

The Safety Assessment Methodology - SAM V2 has been submitted as Potential Acceptable Means of Compliance (AMC) with ESARR4. The SRC-AMC Panel is finalising SRC DOC 12 V1.1 which will include the detailed results of the assessment as well as a summary statement. Full compliance with SAM V2 was found during the preliminary analysis. Four On-Line SAM Newsletters (Nos 6 -9) have also been released in the past few months; they provide a wealth of useful information and guidance on SAM related activities - see:

www.eurocontrol.int/safety/public/sub-site_homepage/homepage.html to subscribe.



SENSITIVITY ANALYSIS

Guidance Material on Sensitivity Analysis has been released. It helps to assess the level of sensitivity of the architecture to the satisfaction of some Safety Requirements or the acceptable margin if they derive from their expected value. Consequently, it helps to define how accurate Safety Requirements should be as well as how much effort should be dedicated to demonstrate them. The Guidance Material is illustrated with a real-life example of its application to MFF (Mediterranean Free Flight).

OPERATIONAL READINESS

Guidance Material has been reviewed by the SAMTF to address the transition to Operational Readiness status. It proposes practical guidance to cover the various aspects of this important phase before projects go into final operations. The Guidance Material is illustrated with a real-life example of its application to Swedish ANS S2K.

CONTINGENCY PLANNING (ESP REC 3.2.3, 3.4.2 & 3.5.2)

ECIP SAF 02 remains a Tentative Pan-European objective; however, following stakeholder comments raised by the Safety Team in March, it has been decided to refer SAF 02 to the Stakeholder Consultation Group (SCG) for further deliberation. Whilst there is general agreement about the need for developing the necessary Guidance Material, it is not clear whether the onus lies with safety or is mainly an operations issue that has an important safety input. The outcome of the SCG will dictate the way ahead and will be communicated to stakeholders through the usual channels.

RISK CLASSIFICATION SYSTEM TO SUPPORT ATM SYSTEM DESIGN (ESP REC 3.1.1)

An internal kick-off meeting was held in Brussels HQ in June 2006 to begin the development of a fully populated Risk Classification Scheme to support ATM system design. This is a complex and demanding task and the first round of consultation both internally and externally will be completed at the end of the year or early next year. A second consultation round will take place later in the year with the scheme itself completed by mid-June 2008.

SAFETY ASSESSMENT OF ATM PROCEDURES (SAAP - V0.10)

A Proposed Issue of Safety Assessment of ATM Procedure (SAAP) has been released and submitted to SAM Task Force (SAMTF) and ATM Procedure Development Sub Group (APDSG) for comment and final review. This document proposes SAM tailored guidance for the safety assessment of ATM Procedures and is illustrated with a real-life application to independent parallel approach in Helsinki-Vantaa airport.

Final approval for the SAAP will be provided by the Safety Team after appropriate consultation.

HUMAN ASSURANCE LEVEL (HAL) V0.1

A first Working Draft on Human Assurance Level (HAL) has been circulated to SAMTF and Human Performance Focus Group (HPFG) that includes guidance material to address the human factors aspects of a safety assessment. This First Draft will be illustrated with a real-life example of its application to FARADS (TCAS Resolution Advisory Downlink).

EUROCAE WG64 (ESP REC 3.2.4)

EUROCAE WG64 has issued ED125 V7 (Proposed Issue) for final review and com-

ment before finally submitting the document to EUROCAE council.

This document proposes guidance to specify an ATM Risk Classification Scheme and to derive quantitative Safety Objectives in compliance with ESARR4.

INTEGRATED RISK PICTURE (IRP)

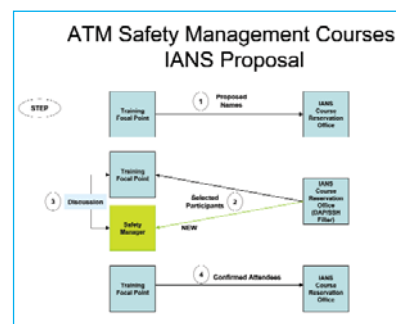
Work is continuing to develop IRP techniques that could help prepare the European ATM network for the multiple, concurrent changes to systems, procedures and processes likely to be associated with SESAR and future Concepts of Operation. It is possible that the traditional ESARR 4 approach of assessing the risk of individual component changes will not prove robust enough to cope with the multiple changes expected in the future. That said, opinion is divided, and states will need to be convinced of the utility of IRP before they will give up their extant methodologies for a potential "Big Bang" approach to network changes. As a start, a workshop was organized in June to assess IRP and to propose a plan to address some of the issues. One measure will be to apply IRP techniques to some EATM programmes (eg. STCA, DMEAN), for validation purposes and to perform an uncertainty and sensitivity analysis. In addition, DAP/SSH will adopt IRP as a tool when supporting EATM programmes to state and assess the overall safety goal.

IANS SAFETY MANAGEMENT COURSES - IMPROVING SELECTION

The popularity of Safety Management courses at IANS continues to increase and demand for places consistently outstrips the supply. Consequently, measures are being taken to increase the course capacity, prioritise the number of courses required and to focus selection of course participants. In response to stakeholder requirements expressed at Safety Team 25, DAP SSH and the SRU will also provide a corpo-

rate input to the selection process. This new synergy between the States Training Focal Points, IANS Course Reservation staff and Agency/SRU Safety Managers is expected to yield the following benefits:

- Priority will be given to people with a genuine training need.
- Improved participant satisfaction.
- Improved matching between course audiences and course objectives.



Details of all IANS Safety Management and Safety Regulatory courses can be found at: www.eurocontrol.int/ians/public/standard_page/training_products.html

ACTIVITY FIELD 4

SYSTEM SAFETY DEFENCES

by Ben Bakker & Françoise Girard



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ESP Activity Field 4
Thread Leader



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ESP Activity Field 4
Thread Leader

Scope: ESP Activity Field 4 concentrates on supporting controllers with system safety defences in a more complex traffic environment with demanding traffic increases. This includes material on cost/benefit analysis, harmonized specifications and operational requirements for ground-based safety nets and best practices, including training support, as well as the remaining work on feasibility of ACAS RA downlink.



Clarification of the role of safety nets with regard to ESARR 4 implementation has commenced through the SRC Work Programme. The SRC Coordination Group created a Safety Nets Task Force (SRC CG SNET Task Force) that commenced to develop guidance material for ESARR 4 on safety nets and a regulatory policy on the use of Safety Nets. The deliverables are expected

to be ready for endorsement by SRC at its March 2007 meeting.

FARADS

The Feasibility of ACAS RA Downlink Study (FARADS) phase 2 was completed shortly after the ESP launch. A results dissemination workshop was conducted on 31 May, which marked the start of the consultation process to decide on the required next steps. The appropriate EATM working arrangements are currently being consulted and decisions are expected to be made early 2007.

SPIN TASK FORCE/STCA

The SPIN (Safety nets: Planning Implementation and eNancements) Task Force has continued and completed its work on Short Term Conflict Alert (STCA). Its main deliverable, the EUROCONTROL Specification for STCA, was subject to review by the appropriate EATM working arrangements during the first half of this year while in the same period the related ECIP Objective ATC02.2 was approved as an Agreed, pan-European objective in the ECIP Edition 2007-2011. On 3 and 4 October a call-to-action workshop was conducted to explain and highlight what needs to be done by ATM Regulators and ANSPs in the period 2007-2008 to comply with the EUROCONTROL Specification for STCA; Guidance Material is already available or being finalized and other support is available. More information can be found at: www.eurocontrol.int/safety-nets

The SPIN Task Force is now progressing the work on Minimum Safe Altitude Warning (MSAW). After that, similar work will be done for Approach Path Monitor and Airspace Proximity Warning (APW). Due to budget constraints the work will extend over a 3-

year period. Moreover, as these safety nets are less mature and not widely adopted yet, the period for implementation will have to extend well beyond the ESP timeframe.

Whilst the work of the SPIN Task Force is focusing on increasing the effectiveness of existing safety nets, some initial work regarding further evolution of the safety nets as well as on establishing a consistent overall concept for airborne and ground-based safety nets has also commenced. In particular, a feasibility study Work has started to establish a fuller understanding of the performance aspects of safety nets. Currently, no comprehensive, scientific evidence exists that provides indicators for effectiveness. As a first step towards developing a better understanding of performance aspects of STCA, a study has been launched to determine the feasibility of extending and applying the encounter model-based safety studies successfully performed for ACAS. Much work remains to be completed in this area and concrete results should not be expected in the very near future.

Safety nets are not simple “plug in and play” devices. Their performances are influenced by the policy underlying their design and use, the way they are tuned and validated and the way in which status information is passed to controllers. Safety nets design, adoption and use involve a mix of organizational, procedural, normative, operational and technical aspects. They also affect how controllers interact with the information infrastructure. To improve the use of these systems at the European level requires a multiplicity of actions to consider and influence all these elements at the appropriate level.

ACTIVITY FIELD 5

SAFETY MANAGEMENT ENHANCEMENT

by Tzvetomir Blajev & Florin Cioran



Tzvetomir Blajev
(DAP/SSH)
ESP Activity Field 5
Thread Leader



Florin Cioran
(SRU)
ESP Activity Field 5
Thread Leader

ACTIVITIES:

- Safety Management Best Practices (safety survey methodologies, safety monitoring, safety assurance, SMS/QMS relationship, integration of HF in SMS, critical shift work environment.
- SMS Guidance Material:
 - Specialized Safety Management Training
- Safety Improvement Sub Group (SISG) Activities:
 - European Safety Action Plans
 - Level Busts
 - Air Ground Communications
 - Airspace Infringements
 - Safety Culture in ATM

As a pre-cursor to the majority of actions placed on State Regulators and ANSPs in Activity Field 5, the EUROCONTROL Agency and to a lesser extent the SRU, need to produce guidance material and plans covering the activities listed above. Production of this documentation is at varying stages of development according to the timelines in the ESP. Nevertheless, some notable deliverables have already been achieved as follows.

SAFETY IMPROVEMENT INITIATIVES (ESP Recs 5.2.3, 5.4.2 & 5.5.2)

The Safety Improvement Sub Group (SISG) has met on 2 occasions since the launch of the ESP. Principal achievements have been the release of the European Action Plan for the Prevention of Air Ground Communication Errors in May 2006 and the Early Actions arising from the development of the European Action Plan for the Prevention of Airspace Infringements in July 2006.

AIR-GROUND COMMUNICATION ACTION PLAN (ESP Rec 5.2.3)

The AGC Action Plan has been extremely well received and is an important contribution to an issue that directly affects the provision of ATS on a day-to-day basis. The plan is the result of the combined efforts of numerous stakeholder organisations such as the FSF, ECA, IFALPA, IFACTA, ERA and EUROCONTROL and over 300 controllers and flight crew. The recommendations in the plan are based on the analysis of over 500 air-ground communications safety events and, when implemented, will assist in reducing the number of incidents where communication problems are a contributory factor. The majority of the recommendations concern best practice. Whilst it may be tempting to think that the best practices highlighted are basic professional knowledge, a large proportion of communications related incident reports suggests that what many may consider to be standard practice is not universal. Aircraft operators and ANSPs may therefore find it useful to examine their training and standard operating procedures to ensure that this best practice is not taken for granted. Copies of the

AGC Action Plan can be downloaded from the EUROCONTROL website.



In parallel with the introduction of the action plan, EUROCONTROL is considering various strategies to reduce the incidence of call-sign similarity incidents; is examining the introduction of 8.33 kHz radios and the new hazards that non-8.33kHz aircraft are creating; and is examining the effects of controller/pilot data link communications which will supplement voice communications in the future. Details of these initiatives can be found in the April 2006 EUROCONTROL AGC Safety Letter No3 also on the EUROCONTROL website.

AIRSPACE INFRINGEMENT INITIATIVE (ESP Rec 5.2.3)

Airspace infringements are not new. Despite efforts made in several European countries, these incidents continue to occur with a frequency which calls for an increased effort to develop preventative action. Further, there is a need to raise controller awareness of the risk caused by airspace infringements in countries and

regions which do not consider it to be among the highest risk areas. A considerable number of incidents are linked to joint civil-military use of airspace; therefore, efficient coordination and partnership between military and civil ATM is not only beneficial but essential for an effective ECAC-wide risk reduction.

Accordingly, the EUROCONTROL Safety Team approved the launch of a Airspace Infringement Initiative at its meeting in December 2005. The goal of this initiative is to develop, agree and implement an industry-wide risk-reduction action plan similar to the AGC Action Plan referred to earlier. The key success factor will be the involvement and cooperation of all stakeholders. In common with previous safety improvement initiatives, the work to produce a European Action Plan for the Prevention of Airspace Infringements will follow a life-cycle spanning over 2 years.

EARLY ACTIONS

In line with the agreed way forward for the implementation of the Airspace Infringement Initiative, a limited set of early risk mitigation actions was agreed for implementation starting in August 2006. An Early Action Package CD was prepared with the support of the Safety Improvement Sub-Group (SISG) of EUROCONTROL and with the assistance of regulators and ANS providers experts dealing with the airspace infringement issues. The CD was distributed in early August 2006 to national aviation authorities and service providers to support them in the planning and implementation of the agreed risk reduction measures. The early action package attempts to identify the short term, operationally effective and cost-efficient solutions to help reduce both the number and the level of risk asso-

ciated with airspace infringements caused by General Aviation (GA) aircraft. Incident data from Member states indicate that GA aircraft are indeed involved in the majority of the infringement incidents.

The proposed early actions make use of some "best" practices implemented so far by some European regulators and ANS providers. These include establishment of dedicated Airspace Infringement Working Groups, ATCO briefings at the ATC units, awareness campaign for GA, airspace structure review and others. Further details can be found on the EUROCONTROL website.

ONGOING AND FUTURE ACTIVITIES

In addition, a safety study is being conducted throughout 2006 with the objective of analyzing the causal factors in sufficient detail in order to identify possible improvement schemes and establish recommendations for risk reduction. Throughout the study, contact will be maintained with all identified risk stakeholders to establish the reasons why airspace infringements are happening and what will permit their prevention. Once sufficiently mature, an industry-wide workshop will be organized to consolidate the knowledge acquired and to agree a set of risk-reduction recommendations. This is likely to take place in Brussels during spring 2007. As in previous safety improvement initiatives, a dedicated toolkit may be developed to support implementation of the action plan.

Further details of the Airspace Infringement Initiative, including the fourth Safety Letter, can be found on the EUROCONTROL website. The project leader, Alexander Krastev can also be contacted at:

alexander.krastev@eurocontrol.int



SAFETY MANAGEMENT TRAINING (Rec 5.2.2)

Work to improve the content of and delivery of EUROCONTROL Safety Management Training has started and revised SSA and Safety Survey pilot courses have been held at IANS in Luxembourg. The outcome from both courses was very positive although final refinements will be made to improve them still further.

ESP RESEARCH AND DEVELOPMENT ACTIVITIES

by Barry Kirwan



Barry Kirwan (EEC)
Coordinator Safety R&D Activities



TOLERANCE OF DEGRADED MODE OPERATIONS

A first pilot study was carried out via interviews with maintenance personnel at a European ANSP, to understand how they deal concretely with degraded mode operations. The next phase will involve developing a questionnaire for a wider ANSP audience. This phase may wait, however, until the related Safety Culture work in this area has progressed at the end of 2006. The work will also co-ordinate efforts with ongoing related activities in the SAM Task Force.

R&D ON TARGET SETTING AND APPORTIONMENT

A methodology is being developed to appropriately apportion overall safety tar-

gets to provide safety objectives for individual components of the ATM system. This is making use of initial EUROCONTROL work on the Integrated Risk Picture (IRP) - the latter having been duly coordinated with similar developments in particular in the Netherlands and within the FAA. The requirement is to present the IRP-based apportionment methodology in a fully accessible and applicable way.

The approach that is being applied follows the following steps:

- Definition of a benchmark target-compliant case
- Identification of example systems requiring objectives
- Development of objectives for example systems
- Explanation in a methodology report that generalizes the above experience, providing guidance on how to obtain objectives for any type of system
- Creation of a leaflet/notice, giving a management overview of the methodology.

Both the methodology report and the leaflet/notice will be available by end of 2006.

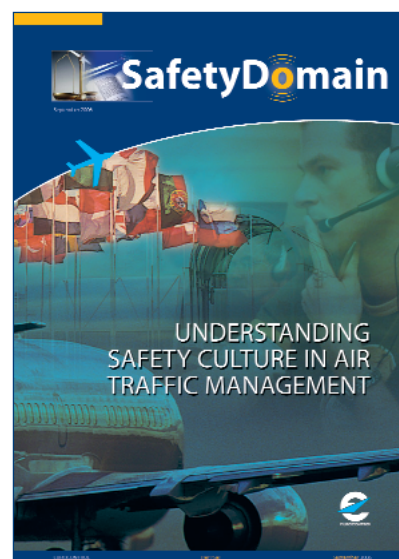
SAFETY CULTURE MEASUREMENT

A prototype safety culture measurement tool has been developed, including a questionnaire and an interview structure. The measurement tool was tested and further developed during a workshop with members from the Safety Team in Madrid (ST27). Participants were asked to complete the questionnaire, and identify which items in the questionnaire were difficult to understand and useful. This feedback has helped us to refine the questionnaire to 50-items. In addition, participants were asked to comment on the interview structure and the

scenarios which participants will be asked how this situation would be managed in their own organisation.

SAFETY CULTURE GUIDANCE

A structure for the safety culture guidance has been developed which includes examples of 'poor practice' and open questions to encourage the readers to think how it relates to their own organisation. This is followed by an equivalent example of 'best practice'. The EUROCONTROL Safety Domain document "Understanding Safety Culture in Air Traffic Management" captures the basic details of this work. Aspects of good and poor safety culture were shown to participants during the Madrid workshop with Safety Team members, who commented on the appropriateness of the examples. In addition, feedback and comments on the structure of the guidance was provided by participants.



ESP IMPLEMENTATION REPORTING AND MONITORING

by ESP Coordination Team



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ESP/LCIP Coordination

INTRODUCTION

Putting in place a proper mechanism to track, monitor and report progress of implementation is a key factor of success of any programme. To ensure that all states and EUROCONTROL move forward in a coordinated manner it is necessary to monitor progress of ESP implementation so that all stakeholders have a common understanding of the progress being made. EUROCONTROL has therefore established a monitoring and tracking process through which completion of actions and critical milestones will be recorded.

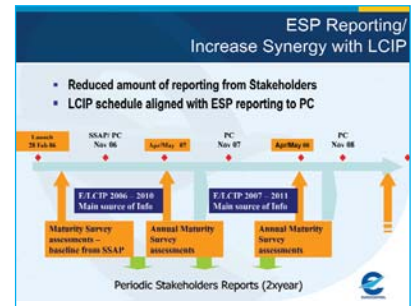
SSAP LESSONS LEARNT

Lessons have been learnt from the experience of the SSAP. Stakeholder comments and concerns have been embraced to produce a process to that is more streamlined and less burdensome.

The total number of actions across all areas has reduced from the 386 Work Packages in the SSAP to 70 ESP Recommendations. Of these, only 28, are for ANSPs and Regulators and this too compares favourably with the 96 Work Packages assigned to these stakeholders in the SSAP. Moreover, even greater utility of established processes such as E/LCIP, the Annual ATM Safety Framework Maturity Survey and EUROCONTROL internal work programmes and project management techniques will be used to gather information on ESP progress. Consequently, there will be no ad-hoc reporting required to track ESP implementation. Stakeholders who have already implemented the Recommendations need only report that they are complete.

ESP- E/LCIP SYNERGY

ECIP Stakeholders Lines of Action (SLoAs) corresponding to similar Recommendations in the ESP will be monitored through the regular LCIP process. A 4-step approach for the collection and validation of ESP related E/LCIP objectives has been agreed. This will require close cooperation to be maintained internally within EUROCONTROL between the ESP and E/LCIP teams and also externally between the E/LCIP focal points and their counterparts for the ESP. When appropriate, the possibility of combined ESP/LCIP visits to States will be considered. Indeed, a number of visits have already taken place and yielded fruitful results all round.



ESP SAF OBJECTIVES

In addition, 4 new ESP SAF Objectives (SAF06-09) and associated SLoAs have been included as "Under Development" objectives in the 2007-2011 ECIP to capture some of those recommendations listed in the ESP Programme document as being tracked by "ESP Framework Monitoring". Since these Recommendations have already been approved by the EUROCONTROL PC, these new pan-European ESP SAF objectives should be treated as "Agreed" for ESP tracking and reporting purposes.

ANNUAL ATM SAFETY FRAMEWORK SURVEY

The E/LCIP process alone cannot meet all of the requirements for monitoring ESP implementation. Therefore, from 2007 the ATM Safety Framework Maturity Survey will be conducted annually to back up the E/LCIP mechanism. Additional oral questions will be added to the interview section of the survey to capture the remaining recommendations listed as "Framework Monitoring" in the ESP Programme Document.

Furthermore, a review of the survey question set has been completed to ensure that it meets the requirements of ESP whilst not undermining the baseline set of questions used in previous surveys.

2006 Results

The results from the 2006 survey have been released and as shown earlier point towards a continued improvement in the maturity of State Regulators and ANSPs safety frameworks. These results will effectively act as a baseline to measure the improvement that we expect the ESP to deliver. Notwithstanding the undoubted progress there is still much to do to bring all states (Regulators and ANSPs) above the 70% target level. Those states with less mature ATM Safety frameworks will be provided with a full range of support (guidance material; developing and sharing “best practices” and additional support through programmes such as SASI, CARDS etc). EUROCONTROL assistance will also be provided to the more mature states but this is likely to be limited to the provision of guidance material and sharing “best practices”.

AGENCY AND SRU WORK PROGRAMMES

Agency and SRU ESP responsibilities and obligations are included in their respective work programmes. Progress is being tracked and monitored using a proven project management systems and via internal working arrangements.

WORKING ARRANGEMENTS

The successful working arrangements put in place for the SSAP have also been carried over to ESP. The internal Implementation Coordination Group will be supported by formal Activity Field “Thread Leaders” from both the Agency and SRU who have the responsibility to coordinate implementation activities in their respective fields. The support staff has also been reinforced to relieve the workload of stakeholders. ESP

Focal Points within States (Regulators and ANSPs) have also been identified to provide the essential interface between the respective parties. As stated earlier, these Focal Points will work closely with their LCIP colleagues thus ensuring consistency of the reported data to EUROCONTROL. As one of the 2 ESP Steering Groups, the Safety Team’s agenda has also been revised and is now oriented around the 5 ESP Activity Fields so that ANSPs can continue to have a dialogue between themselves and with EUROCONTROL on the implementation. Similar high visibility in the SRC also ensures that State Regulators are kept fully updated on ESP progress.



SUMMARY

Tracking and monitoring the progress of the ESP is an essential element of the programme. All stakeholders, whatever their level of safety maturity and sophistication must join together to ensure that the con-

crete actions contained within the recommendations are achieved in a timely manner. Monitoring has already begun for the internal Agency and SRU deliverables. External monitoring of states activities will begin with completion of this year’s LCIP process and the 2007 Safety Framework Maturity Survey. Without ad-hoc reporting progress can only be measured on an annual basis. Therefore, continued dialogue and communication (via publications, visits to states, attendance at workshops etc) between the HQ staff and the stakeholders is essential if day-to-day ESP activities are to be resolved to the benefit of all.

CALLING ALL PHOTOGRAPHY ENTHUSIASTS

ENTER OUR PHOTO COMPETITION AND WIN A CAMERA OR MP3 PLAYER

The European Safety Programme for ATM (ESP) has launched a photo competition, the theme being, 'Safety In Our Skies'. This competition is open to anyone over the age of 18. All photos will be judged by a panel and the winners will be announced at ATC Maastricht 13-15 February 2007. The final deadline for entries to be received is 12 January 2007. EUROCONTROL will send notification of success to entrants who are selected to be finalists, by 31 January 2007.

FIRST PRIZE - Canon EOS 400D

SECOND PRIZE - Fujifilm Finepix A700

THIRD PRIZE - Apple IPOD Shuffle 512MB

Note: We reserve the right to change the prizes to similarly valued items.

Full details can be found on our website www.eurocontrol.int/esp

A promotional poster for the ESP Photo Competition. The top section is black with white and blue text. The middle section features a dark blue sky background with a white airplane silhouette and a camera lens. The bottom right corner has the Eurocontrol logo.

ESP
EUROPEAN SAFETY PROGRAMME FOR ATM

ENTER OUR PHOTO COMPETITION
AND WIN A CAMERA OR MP3 PLAYER

SAFETY IN OUR SKIES

THE THEME IS SAFETY IN OUR SKIES
SEND US YOUR BEST AVIATION SAFETY PHOTOS

DEADLINE FOR SUBMISSION: 12 JANUARY 2007

WINNERS WILL BE ANNOUNCED AT ATC MAASTRICHT
13 - 15 FEBRUARY 2007

SEE OUR WEBSITE FOR FULL DETAILS OF
TERMS AND CONDITIONS AND HOW TO ENTER

WWW.EUROCONTROL.INT/ESP

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EUROCONTROL

EVENTS

DEC 2006

- SAMTF 6 - Rome - 6 Dec 06
- SASI CEOs' Working Session - Cyprus

NOTE: 2007 SASI related events to be determined following the Working Session

JAN 2007

- Release of EUROCONTROL ATCO Emergency Training Video

FEB 2007

- 13/15 Feb 07 - ATC Maastricht - Announcement of ESP Photo Competition winners
- 28 Feb /1 Mar 07 - Safety Team 28 (Brussels)
- AF3 - SAM Newsletter
- AF3 - Version 2.2 of the SAM Tool

MAR 2007

- 15/16 Mar - SRC 28 - Brussels
- AF2 - Meeting with Airline associations
- AF2 - 19/23 Mar 07 - Meeting with ICAO ATMGE
- AF2 - 12/13 Mar 07 - Meeting with FSF

APR 2007

- Apr 2007 - ESP Stakeholders' Report No2
- 24/25 Apr - SISG 20 - Bucharest
- AF3 - SAM Newsletter

MAY 2007

- 2 May - SAFREP2 Meeting
- 23/24 May - SAMTF 7 - Amsterdam
- AF5 - SISG Meeting

JUN 2007

- 6/7 Jun - Safety Team 29 - Finland
- 6/7 Jun - SRC 29 - Brussels
- AF2 - Quarterly report for incident reporting
- AF3 - SAM Newsletter

WEBSITEinfo www.eurocontrol.int/esp

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