

ESARR ADVISORY MATERIAL/ICAO
(EAM/ICAO)

EAM 3 / ICAO

**CONSISTENCY BETWEEN ESARR 3
and ICAO STANDARDS AND
RECOMMENDED PRACTICES**

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<p>This document identifies consistencies and differences between the requirements published in the EUROCONTROL safety regulatory requirements developed in ESARR 3 and those published in ICAO SARPs.</p> <p>Its main objective is to demonstrate that the requirements and recommended practices for safety management published in Annex 11 Edition 13 are adequately covered within ESARR 3. A sub-purpose is to explain why, for certain requirements, it is necessary to expand on the ICAO SARPs.</p>		
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F.3 DOCUMENT APPROVAL

The following table identifies all management authorities who have approved this document.

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Note: For security reasons and to reduce the size of files placed on our website, this document does not contain signatures. However, all management authorities have signed the master copy of this document which is held by the SRU. Requests for copies of this document should be e-mailed to: sru@eurocontrol.int.

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F.4 DOCUMENT CHANGE RECORD

The following table records the complete history of this document.

EDITION NUMBER	EDITION DATE	REASON FOR CHANGE	PAGES AFFECTED
0.01	11-Nov-02	Creation of document by SRU. Working draft submitted to RTF for review and comment.	All
0.1	07-Jan-03	Document status amended to draft issue following RTF consultation.	All
0.2	10-Mar-03	Changes included to address the comments received from SRC consultation. Wording reviewed and improved in various sections. Document sent to SRC Commissioners, Advisers and Observers for approval by correspondence.	Sections 3, 4.1, Appendix A
1.0	14-Apr-03	Release version after SRC approval by correspondence	Term 'ATS' proposed for deletion where 'ATM' appears in Appendix A
1.01	13-Sep-04	Review of ESARR 3 requirements against ICAO SARPs.	All
1.02	15-Oct-04	Rationalisation of document.	All
1.03	17-Dec-04	Additional SRU comments incorporated.	7-10
1.04	22-Feb-05	SRU quality check. Document sent to RTF for formal consultation.	All
1.1	04-May-05	Document sent to SRC for formal consultation and approval.	All
2.0	23-Jun-05	Document released following formal SRC consultation and approval (RFC No. 0510).	-

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F.6 EXECUTIVE SUMMARY

The Safety Regulation Commission's (SRC) initial work on the harmonisation of safety regulatory requirements identified and focussed on those safety areas which, in its view, needed most urgent attention. The resulting SRC Work Programme recognised the need to establish a number of EUROCONTROL Safety Regulatory Requirements, one of which was ESARR 3 "Use of Safety Management Systems by ATM Service Providers".

Amendment 40 to ICAO Annex 11, Edition 13, Air Traffic Services, became applicable in November 2001 and included provisions relating to the introduction of ATS Safety Management. Annex 11 is the only identified ICAO SARP that relates to ESARR 3. It should be noted that the scope of the ICAO Annex 14 provisions for safety management systems are confined to aerodrome operations and do not encompass the provision of ATM services.

Although Annex 11 includes basic Safety Management requirements and recommended practices, the increase in traffic within the ECAC region, together with new technology and a more mature Safety Management experience, has enabled more detailed safety management provisions to be mandated.

ESARR 3 requires the implementation of a complete safety management system that goes beyond the introduction of specific safety management practices as proposed in ICAO Annex 11 and provides for a European-wide solution to the implementation of safety management. Moreover, this approach allows for a harmonised implementation of related provisions of Annex 11 in ECAC.

This document identifies consistencies and differences between the respective Safety Management provisions contained in ICAO Annex 11 (sections 2.26)¹ and the currently approved ESARR 3.

It should be noted that this document does not provide a mapping of ICAO provisions below the level of the SARP material. It does not, therefore, address a detailed comparison with material contained in ICAO Doc 4444, PANS-ATM, although references to it are made wherever needed.

Extensive consistency with ICAO SARPs is shown to exist and unless the specifics of the national implementation of ESARR 3 justifies otherwise, there is no need for States to file a difference.

Where it has been necessary for ESARR 3 to expand further upon them or to address areas not currently covered in ICAO Annex 11, the document presents the rationale in a form which may assist States in addressing these documents at the national level.

This Advisory Material is only valid if a State has enacted ESARR 3 within its own legislation without detriment to the provisions of ESARR 3 or its meaning.

¹ Annex 11, 13th Edition (including Amendment 42).

1. INTRODUCTION

The SRC's initial work on the harmonisation of safety regulatory requirements identified and focussed on those safety areas which, in its view, needed most urgent attention. The resulting SRC Work Programme involved the preparation of a number of Policies and EUROCONTROL Safety Regulatory Requirements (ESARRs), including ESARR 3, Use of Safety Management Systems by ATM Service Providers.

This EAM3 / ICAO document identifies consistencies and differences between the respective safety management provisions of ICAO Annex 11² and the currently approved ESARR 3. Annex 11 is presently the only ICAO SARP that includes material³ related to ESARR 3; therefore, this EAM3 / ICAO document relates to all relevant provisions in ICAO SARPs.

It should be noted that the scope of the ICAO Annex 14 provisions for safety management systems are confined to aerodrome operations and do not encompass the provision of ATM services⁴.

This document is part of a series. There is a document for each ESARR showing the corresponding provisions of ICAO SARPs (EAM X / ICAO, where X is the number of the appropriate ESARR). There is similarly one document that shows the correspondence between each ICAO Annex and the corresponding ESARR provisions.

2. PURPOSE OF DOCUMENT

The main purpose of this document is to demonstrate that the requirements and recommended practices for safety management published in Annex 11 Edition 13 are adequately covered within ESARR 3.

A secondary objective of this document is to explain why, for certain requirements, it was necessary for ESARR 3 to expand further upon ICAO SARPs or to address areas not currently covered in ICAO Annex 11.

It is important to note that this document only addresses the correspondence between the provisions of ESARR 3 and the relevant ones of Annex 11 and not any amendments that may arise from the transposition of ESARR 3 into the national regulatory framework.

This document can also be used to assist ECAC States in justifying why they do not need to file differences between their national regulations dealing with safety management (and associated practices) and the Standards laid down in ICAO Annex 11.

It is however recognised that the notification of differences is a State's responsibility and that this document only provides harmonised guidance to States.

² Annex 11, 13th Edition (including Amendment 42).

³ Annex 14 includes provisions requiring the implementation of safety management systems. However, its scope is confined to aerodrome operations and does not include the provision of ATM services.

⁴ EAM 3 / GUI 5 provides specific guidance on the links between ESARR 3 and ICAO provisions on SMS at Aerodromes.

This document can also be used when States are being audited by ICAO in the framework of the expanded ICAO Universal Safety Oversight Audit Programme (IUSOAP).

This Advisory Material is only valid if a State has enacted ESARR 3 within its own legislation without detriment to the provisions of ESARR 3 or its meaning.

3. SUMMARY OF COMPARISON – ANNEX 11 WITH ESARR 3

The provisions of ESARR 3 must be compared with the related ICAO requirements, which are the minimum standard to be applied, to ensure that they are consistent.

The scope of ESARR 3 is wider than Annex 11 in that includes ATM whereas Annex 11 is limited to the provision of Air Traffic Services (or even only ATC in some cases).

A careful review of ICAO Annex 11 has identified that its provisions corresponding to the scope of ESARR 3 are met fully by ESARR 3 which also provides expansion in terms of scope and detail of requirements as well as clarification. In particular:

The scope of Annex 11 section 2.26 is restricted to the provision of ATS within airspaces and at aerodromes while ESARR 3 deals with the provision of ATM as a whole (inclusive of ATFM and ASM);

Annex 11 simply requires the introduction of “ATS safety management programmes” and identifies some minimum generic elements of such programmes without providing further explanation of what an ATS safety management programme really demands. On the other hand, ESARR 3 provides for a comprehensive set of requirements for an organisational management system for safety;

Annex 11 is part of the ICAO convention, which implicitly identifies a civil aviation perspective although, in general, if the supplier of the service is military, it is the expectation of the Annex that such a supplier would apply the services as required by the Annex to civil traffic, However, ESARR 3 also applies to military ATM service providers;

Annex 11 is scoped to the provision of international services and could be interpreted as not applicable to airports with purely domestic traffic. On the basis of present differences filed to ICAO, this interpretation is not used in ECAC and in ESARR 3 the requirements are focussed on all providers of ATM regulated by the National regulators. Thus it is unlikely within the practical implementation of ESARR 3 that any class of civil aviation users will be omitted from this scope;

ESARR 3 proposes the implementation of a whole organisational system -a safety management system- that provides a platform for any specific safety management practice, including those required in Annex 11. Some basic features of the ESARR 3 approach, not currently considered by ICAO, are:

- The definition and adoption of a Safety Policy to establish a clear commitment to safety at the highest level of the organisation level concerned;
- The definition of safety responsibilities for all those involved in safety related tasks;

- The identification of a Safety Managerial Function, as a key organisational element to ensure the development, maintenance and promotion of safety management;
- The documentation of the SMS and its outputs⁵ in order to provide clarity in the organisational arrangements and ensure the appropriate documentation of evidence obtained from safety assurance mechanisms
- The promotion of a culture of safety and safety improvement, and the dissemination of lessons learnt as basic aspects needed to ensure a continuous improvement of safety through the involvement of everybody.

The provisions of ESARR 3 and associated Guidance Material also cover the guidance and interpretation of Annex 11 as provided by ICAO Doc. 4444, PANS-ATM, Chapter 2, ATS Safety Management. Even at this level of detail, the conclusions summarised above still stand;

Note: The provisions of ESARR 3, in the area of risk assessment and mitigation, are developed further in ESARR 4 and in ESARR 6 in respect of software.

4. ASSESSMENT OF RATIONALE FOR ESARR 3

The rationale for Annex 11 appears to be the provision of a common safety assurance methodology based on safety management practices that allow a consistent regulatory approach and consequently a common framework for ICAO USOAP assessment and comparison.

The EUROCONTROL Safety Regulatory Requirement – Use of Safety Management Systems by ATM Service Providers (ESARR 3), however, stemmed from the need for a systematic and harmonised development of safety management systems within ATM in the ECAC region

Further, as ESARR 3 defines an approach to maximise safety benefits in a visible and traceable way, its implementation may effectively support a safety regulatory approach consistent with the needs for a common framework for USOAP assessment and comparison.

The objectives pursued in Annex 11 paragraph 2.26 aim at implementing ATS safety management programmes to ensure that safety is maintained.

The overall safety objective of ESARR 3 is to ensure that all safety issues within the provision of an ATM service have been addressed in a satisfactory manner and to a satisfactory conclusion, as the way to ensure that safety is maintained and continuously improved.

⁵ *In the ESARR 3 approach the outputs are documented by means of Safety Records. More particularly, specifically safety records, called risk assessment and mitigation documentation are required to document the results of the risk assessment and mitigation process.*

5. CONCLUSIONS

The requirements in Annex 11 that correspond to the scope of ESARR 3 are fully met by ESARR 3. Additionally, the implementation of ESARR 3 (along with ESARRs 4 and 6) by the EUROCONTROL Member States⁶ is considered as a regional approach taken in ECAC to address the implementation of the ATS safety management programmes required in ICAO Annex 11, Section 2.26.

This document demonstrates that the implementation of ESARR 3 only enhances the provisions of Annex 11 without imposing any requirements on international civil aviation. Therefore, and unless the specifics of the national implementation of ESARR 3 justifies otherwise, States do not need to notify ICAO of a difference to Annex 11.

The whole set of ESARR 3 (along with ESARRs 4 and 6) provisions describes a comprehensive set of measures, at a level of mandatory requirements, that fully covers all the aspects and issues included in Annex 11, section 2.26.

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⁶ *In accordance with Decisions made by the EUROCONTROL Commission.*

APPENDIX A – DETAILED COMPARISON BETWEEN ESARR 3 AND ICAO ANNEX 11

ESARR 3, Edition 1.0	ICAO Annex 11
<p>5.1 General Requirement</p> <p>An ATM service-provider shall, as an integral part of the management of the ATM service, have in place a safety management system (SMS) which:</p>	
<p><i>5.1.1 Safety Management</i></p> <p>ensures a formalised, explicit and pro-active approach to systematic safety management in meeting its safety responsibilities within the provision of ATM services;</p> <p>operates in respect of all ATM and supporting services which are under its managerial control;</p> <p>includes, as its foundation, a statement of safety policy defining the organisation's fundamental approach to managing safety;</p>	<p>ESARR 3 goes beyond this provision</p> <p>2.26.1</p> <p>States shall implement systematic and appropriate ATS safety management programmes to ensure that safety is maintained in the provision of ATS within airspaces and at aerodromes.</p>
<p><i>5.1.2 Safety Responsibility</i></p> <p>ensures that everyone involved in the safety aspects of ATM service-provision has an individual safety responsibility for their own actions, and that managers are responsible for the safety performance of their own organisations</p>	<p>No correspondent</p>
<p><i>5.1.3 Safety Priority</i></p> <p><i>Ensures that the achievement of satisfactory safety in ATM shall be afforded the highest priority over commercial, operational, environmental or social pressures;</i></p>	<p>No correspondent</p>

ESARR 3, Edition 1.0	ICAO Annex 11
<p>5.1.4 Safety Objective of the ATM Service</p> <p>Ensures that while providing an ATM service, the principal safety objective is to minimise the ATM contribution to the risk of an aircraft accident as far as reasonably practicable.</p>	<p>ESARR 3 equates to this provision</p> <p>2.26.2</p> <p>... the acceptable level of safety and safety objectives applicable to the provision of ATS within airspaces and at aerodromes shall be established</p>
<p>5.2 Requirements for Safety Achievement</p> <p>Within the operation of the SMS, the ATM service-provider:</p>	
<p>5.2.1 Competency</p> <p>Shall ensure that staff are adequately trained, motivated and competent for the job they are required to do, in addition to being properly licensed if so required;</p>	<p>No correspondent</p>
<p>5.2.2 Safety Management Responsibility</p> <p><i>shall ensure that a safety management function is identified with organisational responsibility for development and maintenance of the safety management system;</i></p> <p><i>shall ensure that this point of responsibility is, wherever possible, independent of line management, and accountable directly to the highest organisational level;</i></p> <p><i>shall ensure that, in the case of small organisations where combination of responsibilities may prevent sufficient independence in this regard, the arrangements for safety assurance are supplemented by additional independent means;</i></p> <p><i>shall ensure that the highest level of the service provider organisation plays a general role in ensuring safety management;</i></p>	<p>No correspondent</p>

ESARR 3, Edition 1.0	ICAO Annex 11
<p>5.2.3 Quantitative Safety Levels</p> <p>shall ensure that, wherever practicable, quantitative safety levels are derived and are maintained for all systems;</p>	<p>ESARR 3 equates to this provision</p> <p>2.26.2</p> <p>... the acceptable level of safety and safety objectives applicable to the provision of ATS within airspaces and at aerodromes shall be established</p> <p>...</p> <p>Note – the acceptable levels of safety may be specified in qualitative or quantitative terms...</p>
<p>5.2.4 Risk Assessment and Mitigation</p> <p><i>shall ensure that risk assessment and mitigation is conducted to an appropriate level to ensure that due consideration is given to all aspects of ATM;</i></p> <p><i>shall ensure that changes to the ATM system are assessed for their safety significance, and ATM system functions are classified according to their safety severity;</i></p> <p><i>shall ensure appropriate mitigation of risks where assessment has shown this to be necessary due to the safety significance of the change;</i></p>	<p>ESARR 3 goes beyond this provision</p> <p>2.26.5</p> <p>Any significant safety-related change to the ATC system, including the implementation of a reduced separation minimum or a new procedure, shall only be effected after a safety assessment has demonstrated that an acceptable level of safety will be met and users have been consulted. When appropriate, the responsible authority shall ensure that adequate provision is made for post-implementation monitoring, to verify that the defined level of safety continues to be met.</p>
<p>5.2.5 SMS Documentation</p> <p><i>shall ensure that the SMS is systematically documented in a manner, which provides a clear linkage to the organisation's safety policy;</i></p>	<p>No correspondent</p>

ESARR 3, Edition 1.0	ICAO Annex 11
<p><i>5.2.6 External Services</i></p> <p>shall ensure adequate and satisfactory justification of the safety of the externally provided services, having regard to their safety significance within the provision of the ATM service;</p>	<p>No correspondent</p>
<p><i>5.2.7 Safety Occurrences</i></p> <p>Shall ensure that ATM operational or technical occurrences which are considered to have significant safety implications are investigated immediately, and any necessary corrective action is taken.</p>	<p>ESARR 3 goes beyond and provides the means to achieve this provision</p> <p>Related to 2.26.4:</p> <p>An ATS safety management programme shall, inter alia:</p> <ul style="list-style-type: none"> a) Identify actual and potential hazards and determine the need for remedial action b) Ensure that remedial action necessary to maintain an acceptable level of safety is implemented c) Provide for continuous monitoring and regular assessment of the safety level achieved

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ESARR 3, Edition 1.0	ICAO Annex 11
<p>5.3 Requirements for Safety Assurance Within the operation of the SMS, the ATM service-provider:</p>	
<p>5.3.1 Safety Surveys Shall ensure that safety surveys are carried out as a matter of routine, to recommend improvements where needed, to provide assurance to managers of the safety of activities within their areas and to confirm conformance with applicable parts of their Safety Management Systems.</p>	<p>ESARR 3 goes beyond and provides the means to achieve this provision Related to 2.26.4: An ATS safety management programme shall, inter alia:</p> <ul style="list-style-type: none"> a) Identify actual and potential hazards and determine the need for remedial action b) Ensure that remedial action necessary to maintain an acceptable level of safety is implemented c) Provide for continuous monitoring and regular assessment of the safety level achieved
<p>5.3.2 Safety Monitoring shall ensure that methods are in place to detect changes in systems or operations which may suggest any element is approaching a point at which acceptable standards of safety can no longer be met, and that corrective action is taken.</p>	
<p>5.3.3 Safety Records shall ensure that safety records are maintained throughout the SMS operation as a basis for providing safety assurance to all associated with, responsible for or dependent upon the services provided, and to the safety regulatory authority;</p>	No correspondent
<p>5.3.4 Risk Assessment and Mitigation Documentation <i>shall ensure that the results and conclusions of the risk assessment and mitigation process of a new or changed safety significant system are specifically documented, and that this documentation is maintained throughout the life of the system.</i></p>	No correspondent

ESARR 3, Edition 1.0	ICAO Annex 11
<p>5.4 Requirements for Safety Promotion</p> <p>Within the operation of the SMS, the ATM service-provider:</p>	
<p><i>5.4.1 Lesson Dissemination</i></p> <p>Shall ensure that the lessons arising from safety occurrence investigations and other safety activities are disseminated widely within the organisation at management and operational levels.</p>	No correspondent
<p><i>5.4.2 Safety Improvement</i></p> <p>shall ensure that all staff are actively encouraged to propose solutions to identified hazards, and</p> <p>shall ensure that changes are made to improve safety where they appear needed.</p>	No correspondent

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