

## **Air Traffic Standards Oversight**

### **Guidance Notes for complying with Commission Implementing Regulation (EU) 1035/2011 Common Requirements**

These guidance notes have been developed to assist applicants for ANSP certification to complete the CAA 1035 Compliance Matrix

## **Introduction.**

When a company or organisation makes an application to the CAA for certification as an Air Navigation Service Provider (ANSP), they are required to complete a 'Compliance Matrix' indicating how they intend to comply with the Common Requirements of Commission Implementing Regulation 1035/2011.

Once certification has been achieved ANSPs will be required to maintain the currency of their Compliance Matrices to assist the audit process and reduce audit time.

The purpose of this guidance material is to provide advice to ANSPs and applicants on the completion and maintenance of their Compliance Matrices.

It should be clearly understood that this document has no legal status and should not be considered as an acceptable or alternative means of compliance and is provided for guidance only.

## **Purpose**

The following pages expand on the Common Requirements shown in commission Regulation 1035/2011, Annex I to V.

Each Common Requirement is shown as it is written within the legislation.

This is followed by a Guidance Section.

The 'Guidance Section' attempts to explain the meaning of the requirement in plain language.

This is followed by a section entitled 'Possible Evidence'.

This is the evidence that may be referred to within the Compliance Matrix to demonstrate compliance with the requirement.

Such evidence, once referred too, must be made available to a CAA ATS Inspector at an audit or as requested.

It should be noted that the word 'Possible' is intended and is meant to imply that the evidence listed may not be the sole method of demonstrating compliance and other forms of evidence may be acceptable.

## **A Note on Derogation**

No ANSP is wholly exempt from the 1035/2011 Common Requirements although small providers who elect not to seek business outside of their home State may be eligible for derogation from some aspects of them.

These are mainly the financial aspects detailed in the Common Requirements legislation Annex I CR 2, CR6 and CR9.

Derogation may also impact on the scope of the ANSPs Quality Management System and further information is provided below under CR 3.2.

Eligibility for Derogation is detailed in 1035/2011 Article 5 and the Application Form.

## Annex I

### **General requirements for the provision of air navigation services**

To be completed by all units providing ATS, CNS, MET and AIS

## 1035 Annex 1 CR1. TECHNICAL AND OPERATIONAL COMPETENCE AND CAPABILITY

Air navigation service providers shall be able to provide their services in a safe, efficient, continuous and sustainable manner consistent with any reasonable level of overall demand for a given airspace. To this end, they shall maintain adequate technical and operational capacity and expertise

### Guidance

What is implied here is that there should be a sufficient number of adequately trained and experienced staff available to meet the maximum expected demand on the airspace under the ANSPs control. The ANSP should analyse their expected maximum demand and arrange for a suitable number of Management staff, ATCO/FISO, Engineers and other staff required to meet this demand over the organisations daily operating time. For ATCOs, SRATCOH requirements to be considered. The staffing levels should also take into consideration abnormal and emergency situations.

Safe	Adequately trained staff
Efficient	Adequately trained and experienced staff
Continuous	Sufficient number of trained staff to maintain service during operating hours
Sustainable	Sufficient number of trained staff to maintain service during sickness and absence or in abnormal or emergency situations

**Note:** The CAA also interprets the terminology '*safe, efficient*' to include ergonomic and environmental requirements detailed within CAP 670 ATC 01 ATC Support Systems and Facilities. Compliance with the requirements of CAP 670 ATC 01 will be included within the Pre-designation audit.

### Possible Evidence

The evidence required here is to clearly define how the necessary number of skilled and experienced Air Traffic, Engineering and Management Staff are provided to ensure safe operations over the published operating hours.

The following should be considered:

Watch rosters indicating how coverage is to be maintained during expected operating hours. SRATCOH Scheme for the Regulation of Air Traffic Controllers Hours. (CAP 670 Part D, Section 2) to be taken into consideration when determining ATCO staffing levels.

Contingency plans for absence and sickness to maintain coverage.

Adequate coverage by engineering staff during operating hours. This can be recorded within an engineering exposition; staff call out or watch rosters.

Where engineering support is provided externally adequate coverage should be defined within Service Level Agreements and/or Contracts.

SLAs are also encouraged where support is provided internally.

Document delegation of authority for management staff during absence or sickness.

Demonstration on audit that the requirements of CAP 670 ATC 01 are met.

**Note:** Further evidence of compliance with Annex 1 CR1 in relation to expertise can be demonstrated by the evidence of compliance provided to other relevant common requirements listed below in relation to ATCO and engineering training and competence. It is acceptable to cross reference here.

## 1035 Annex 1 CR2. ORGANISATIONAL STRUCTURE AND MANAGEMENT

### 2.1. Organisational structure

Air navigation service providers shall set up and manage their organisation according to a structure that supports the safe, efficient and continuous provision of air navigation services.

The organisational structure shall define:

(a) the authority, duties and responsibilities of the nominated post holders, in particular of the management personnel in charge of safety, quality, security, finance and human resources related functions;

(b) the relationship and reporting lines between different parts and processes of the organisation

#### Guidance

This links to CR1 above. Having decided on adequate staffing and skill levels required to maintain safe, efficient and continuous provision of air navigation services it is now necessary to define and document the authority, scope, responsibilities and accountabilities of each post and the organisational structure, relationships and reporting lines.

Individuals should be given specific responsibilities and accountabilities for safety, quality, security, finance and human resources. It is normal on smaller units for some or all of these posts to be combined.

It should be noted that although the CR specifically states '*in particular of the management personnel in charge of safety, quality, security, finance and human resources related functions*' other posts are not excluded and all personnel involved in or supporting the provision of air navigational services have safety responsibilities which should be documented.

Note: The '*human resources related functions*' are not directly relating to the functions of an HR department but to the individuals who have authority to determine human resource issues, i.e. the type and numbers of staff required to fulfil the requirements determined in CR1.

#### Possible Evidence

Organisational diagram showing the structure of the organisation and the relationship and reporting lines between posts.

For each post in the organisational diagram the duties, responsibilities and accountabilities should be defined. This can be in the form of safety accountability documents or job descriptions. Such documents should clearly show what the individual is responsible for, what they are accountable for, and whom they are accountable to and should focus on the safety aspects of their role

Each document should be signed by the individual concerned indicating they understand their duties, responsibilities and accountabilities and should be countersigned by their line manager or other responsible senior manager to provide the necessary authority for the post or be included in an authorised and documented safety management system.

## 1035 Annex 1 CR2. ORGANISATIONAL STRUCTURE AND MANAGEMENT

### 2.2. Organisational management *(Not applicable to ANSPs requesting a derogated certificate)*

#### 2.2.1. Business plan

Air navigation service providers shall produce a business plan covering a minimum period of five years. The business plan shall:

- (a) set out the overall aims and goals of the air navigation service provider and its strategy towards achieving them in consistency with any overall longer term plan of the air navigation service provider and with relevant Union requirements for the development of infrastructure or other technology;
- (b) contain appropriate performance targets in terms of safety, capacity, environment and cost-efficiency, as may be applicable.

The information listed in points (a) and (b) shall be consistent with the national or functional airspace block performance plan referred to in Article 11 of Regulation (EC) No 549/2004 and, as far as safety data is concerned, consistent with the State Safety Programme referred to in Standard 2.27.1 of Annex 11 to the Convention on International Civil Aviation, Amendment 47B from 20 July 2009 as applicable.

Air navigation service providers shall produce safety and business justifications for major investment projects including, where relevant, the estimated impact on the appropriate performance targets referred to in point (b) and identifying investments stemming from the legal requirements associated with the implementation of the Single European Sky ATM Research Programme (SESAR

#### Guidance

##### The Business Plan

The business plan must cover at least 5 years. The legislation states *a minimum period of five years* and therefore any period in excess of this would be acceptable.

NOTE: it may be a good policy to align the business plan with the Reporting Periods detailed within the Performance Implementing Regulation (IR) 691/2010, especially at units that have more than 50K CAT Movements which are required address the three safety elements of the IR i.e. Effectiveness of Safety Management (EoSM), Just Culture and the application of the Risk Analysis Tool (RAT).

##### Contents of the Business Plan

State the overall aims and goals of the ANSP

Detail the strategy for achieving these aims and goals

Where the ANSP has an overall longer term plan (high level goals) the stated aims, goals and strategy within the business plan should be consistent with these.

The business plan must also consider, where applicable, *Union requirements for the development of infrastructure or other technology*; .This is referring to developments in Network Management, SESAR legal requirements, (none yet developed), and equipment enhancements required by Interoperability Implementation Regulations, where appropriate.

The business plan must contain Performance Targets as they are applicable under the following headings;

Safety' Capacity, Environment, Cost efficiency.

The Performance Targets may be based on Performance Indicators developed by the ANSP but in addition the legislation requires that these *shall be consistent with the national or functional airspace block performance plan*. As no FAB performance plan has yet been developed only the National Plan needs to be considered.

The National Plan details some nine Performance Indicators as follows:

- S1 EoSM,
- S2 The application of the Risk Analysis Tool (RAT)
- S3 Just Culture

- S4 Runway Incursions
- S5 Runway Excursions
- S6 Loss of Separation
- S7 Airspace Infringements
- S8 Level Bursts
- S9 ATM Specific Technical Events

S1 to S3 are only applicable at units that have more than 50K CAT Movements for which specific reporting methods have been developed and are managed by the CAA.

All ANSPs must consider the applicability of these Performance Indicators to their operations and ensure that the business plan details Performance Targets in terms of Safety' Capacity, Environment and Cost efficiency where it is appropriate to do so.

The Business Plan must also detail any Major Investment Projects for which safety and business justification must be provided.

Where it is relevant the estimated impact of such projects on the defined Performance Targets must be identified and any impact on the implementation of developments in Network Management, SESAR legal requirements, (none yet developed), and equipment enhancements required by Interoperability Implementation Regulations , where applicable, must also be considered.

**Possible Evidence**

5 Year Business plan

## 1035 Annex 1 CR2. ORGANISATIONAL STRUCTURE AND MANAGEMENT

### 2.2. Organisational management *(Not applicable to ANSPs requesting a derogated certificate)*

#### 2.2.2. Annual plan

Air navigation service providers shall produce an annual plan covering the forthcoming year which shall specify further the features of the business plan and describe any changes to it.

The annual plan shall cover the following provisions on the level and quality of service, such as the expected level of capacity, safety, environment and cost-efficiency, as may be applicable:

(a) information on the implementation of new infrastructure or other developments and a statement how they will contribute to improving the performance of the air navigation service provider, including level and quality of services;

(b) performance indicators consistent with the national or functional airspace block performance plan referred to in Article 11 of Regulation (EC) No 549/2004 against which the performance level and quality of service may be reasonably assessed;

(c) information on the measures foreseen to mitigate the safety risks identified in the safety plan of the air navigation service provider, including safety indicators to monitor safety risk and, where appropriate, the estimated cost of mitigation measures;

(d) the air navigation service provider's expected short-term financial position as well as any changes to or impacts on the business plan

#### Guidance

##### Annual Plan

Air navigation service providers shall produce an annual plan covering the forthcoming year which shall specify further the features of the business plan and describe any changes to it.

This is as written and is self explanatory.

The annual plan will need to look at the following provisions on level and quality of service.

For each of the provisions listed what is the expected level and quality of service in relation to capacity, safety, environment and cost-efficiency, as may be applicable.

##### Provision (a)

Within the period covered by the annual plan detail if there will be any *new infrastructure or other developments*. The Annual Plan must state how these developments will contribute to improving performance i.e. the level and quality of service.

##### Provision (b)

Performance Indicators that will be used during the period to monitor progress in meeting the Performance Targets, (that are *consistent with the national performance plan*), detailed in the Business Plan.

##### Provision (c)

*Information on the measures foreseen to mitigate the safety risks identified in the safety plan.*

The 'safety plan' referred to here is not defined in the legislation but is assumed to mean any anticipated measures required for mitigation as a result of new infrastructure developments and other changes. This could also include the costs of developing safety indicators and the methods to monitor safety and mitigation measures.

##### Provision (d)

*The air navigation service provider's expected short-term financial position as well as any changes to or impacts on the business plan.*

Self Explanatory



<b>Possible Evidence</b>
Annual Plan

<b>1035 Annex 1 CR2. ORGANISATIONAL STRUCTURE AND MANAGEMENT</b>
<b>2.2. Organisational management</b> <i>(Not applicable to ANSPs requesting a derogated certificate)</i>
<b>2.2.3. Performance part of the plans</b>
The air navigation service provider shall make the content of the performance part of the business plan and of the annual plan available to the Commission on request under the conditions set by the competent authority in accordance with national law.
<b>Guidance</b>
No action required here. Only required 'on request'
<b>Possible Evidence</b>

## 1035 Annex 1 CR3. SAFETY AND QUALITY MANAGEMENT

### 3.1. Safety management

(Paragraph 1) Air navigation service providers shall manage the safety of all their services. In doing so, they shall establish formal interfaces with all stakeholders which may influence directly the safety of their services.

#### Guidance

*'Air navigation service providers shall manage the safety of all their services'*

1035/2011 Annex I applies to Air Navigation Service Providers i.e. Air Traffic Service (ATS), Communications Navigation and Surveillance (CNS), Meteorology (MET), and Aeronautical Information Service (AIS) providers. In regard to safety management of their services ATS and CNS providers are also required to comply with the requirements of Annex II Section 3. Annex II Section 3 requires ATS and CNS providers to implement and maintain complete Safety Management Systems and would simply need to state here that the safety of their services is provided in accordance with the requirements of Annex II Section 3.

However ATS and CNS providers should ensure that the Safety Management System developed to comply with the requirements of Annex II Section 3 includes the requirements for *'formal interfaces with all stakeholders'* as detailed here.

MET and AIS providers will need to provide evidence that they have management systems in place that ensure the integrity and accuracy of the data they provide. This could either be as 'stand alone' procedures or included within a Safety Management System or included within a Quality Management System which is a requirement of Annex I Section 3.2.

*'In doing so, they shall establish formal interfaces with all stakeholders which may influence directly the safety of their services'.*

This is indicating that the safe and continual provision of air navigation services is also dependent on external suppliers or stakeholders. These may be other service providers on the aerodrome or external suppliers.

Definition of Stakeholders (*A person, group, or organisation that has direct or indirect stake in an organisation because it can affect or be affected by the organisation's actions, objectives, and policies. Key stakeholders in a business organisation include creditors, customers, directors, employees, government (and its agencies), owners (shareholders), suppliers, unions, and the community from which the business draws its resources*).

These stakeholders need to be identified and documented.  
Establish a formal interface i.e. hold periodic meetings with those who may have an influence on safety.  
Establish Service Level Agreements with key stakeholders.

Examples of stakeholders:

Utilities	Adjacent Aerodrome operators and ATS units
Data suppliers	Local Council
Communication suppliers	MoD
Meteorological information	Landlord
Engineering services	On Airfield businesses
Facilities management	Insurance companies
Fire service	Medical services
Aerodrome Users	Local Residents
Aerodrome Authority	

#### Possible Evidence

Quality Management Systems  
Safety Management Systems  
A list of identified stakeholders/suppliers, what service do they provide, their contact details both Normal and Emergency.  
Service Level Agreements  
Contracts, Meeting Schedules, Meeting Agendas, Meeting Minutes.

## 1035 Annex 1 CR3 SAFETY AND QUALITY MANAGEMENT

### 3.1. Safety management

(Paragraph 2) Air navigation service providers shall develop procedures for managing safety when introducing new functional systems or changing the existing functional systems.

#### Guidance

Again the requirement here differs between providers.

ATS and CNS providers are required to comply with Annex II section 3 which requires detailed systems for the management of change and their evidence of compliance should be detailed there.

MET and AIS providers will need to have management systems in place ensure the integrity and accuracy of the data they supply during the implementation of changes. This could either be as 'stand alone' procedures or included within a Safety Management System or a Quality Management System which is a requirement of Annex I Section 3.2.

Note: MET and AIS provides must consider the requirements of Regulation 1034/2011 Article 9 (2) which requires organisation to notify the competent authority, (CAA), of all planned safety related changes. This is interpreted to include AIS and MET providers where their changes may impact on the safety of an air traffic service in accordance with the process described in CAP 670 Part A.

Note: 1035 defines a '*Functional System*' as: *a combination of systems, procedures and human resources organised to perform a function within the context of Air Traffic Management*

#### Possible Evidence

MET and AIS. Documented procedures to ensure integrity and accuracy of the data they supply during change implementation and/or an SMS or QMS which incorporates the management of changes.

ATS and CNS should cross reference to their method of compliance with Annex II section 3.

**3.2. Quality management system**

Air navigation service providers shall have in place a quality management system which covers all air navigation services that they provide, according to the following principles.

The quality management system shall:

- (a) define the quality policy in such a way as to meet the needs of different users as closely as possible;
- (b) set up a quality assurance programme that contains procedures designed to verify that all operations are being conducted in accordance with applicable requirements, standards and procedures;
- (c) provide evidence of the functioning of the quality management system by means of manuals and monitoring documents;
- (d) appoint management representatives to monitor compliance with, and adequacy of, procedures to ensure safe and efficient operational practices;
- (e) perform reviews of the quality management system in place and take remedial actions, as appropriate.

An EN ISO 9001 certificate, issued by an appropriately accredited organisation, covering the air navigation services of the provider shall be considered as a sufficient means of compliance. The air navigation service provider shall accept the disclosure of the documentation related to the certification to the competent authority upon the latter's request.

Air navigation service providers may integrate safety, security and quality management systems into their management system.

**Guidance**

Quality Management Systems can be implemented in a range of different ways dependent on the size and complexity of the organisation. Large corporate organisations with many business areas may have a single QMS that covers the complete scope of their business interests. Others may have a corporate QMS that solely covers their aviation interests at one or more sites. Smaller or single site units will require a QMS that covers the air navigation services they provide.

**Organisations that are not certificated to the EN ISO 9001 standard.**

There is no requirement under the regulations for an ANSP to be certificated to the ISO 9001 quality management standard, however a quality management system is still required and the elements of that system are described in (a) to (e) above. These are in effect the major elements of the ISO 9001 standard with the exception of the requirement for independent external auditing.

The quality management system shall:

*(a) define the quality policy in such a way as to meet the needs of different users as closely as possible;*  
This is referring to the policy statement and the scope of the quality management system.

The policy statement should declare the realistic aims and objectives of the organisation and how those aims and objectives will be achieved, i.e. training, supervision, audit and review. The aim of the QMS is continual improvement of service provision and this should be reflected in the quality statement.

*Meeting the needs of the different users* is referring to the requirement for the QMS to scope in all activities and departments (functions) that contribute to the provision of air navigational services as applicable to the unit. E.g. Management activities, ATC, Engineering, Meteorology, external suppliers etc. These functions need to be identified and their activities defined and relevant procedures developed within the QMS. In the case of ATC many of these procedures will already exist in the form of MATS part 2 or the FISO Manual.

*(b) set up a quality assurance programme that contains procedures designed to verify that all operations are being conducted in accordance with applicable requirements, standards and procedures;* Air Navigation Services are provided in accordance with legal requirements the requirements of international standards and the ANSPs own requirements. It is necessary to define which of these requirements are applicable to the type of service being provided and internal operating procedures developed to ensure compliance.

It might be helpful to draw up a 'register of applicable legislation' against procedures to ensure that there is a procedure/process in place to provide compliance with each part of the legislation.

The implementation of these procedures requires verification to ensure that the organisation is doing what it says it is doing. This would normally take the form of an internal audit program. Such a program should be drawn up, auditors appointed and records kept.

*(c) provide evidence of the functioning of the quality management system by means of manuals and monitoring documents;*

The evidence asked for here will be the internal procedures and associated records, the results of internal and external audits, non-compliance and non-conformities and associated corrective and preventative actions. Periodic management review meetings should be carried out at senior management level to oversee the operation of the QMS. Minutes of such meetings will provide further evidence of the functioning of the QMS.

In line with the requirements of the ISO 9001 Standard Management Review Meeting agendas should include:

- Results of audits, internal and external
- Customer feedback
- Status of preventative and corrective actions
- Follow up actions from previous reviews
- Changes that could affect the management system
- Recommendations for improvement

*(d) appoint management representatives to monitor compliance with, and adequacy of, procedures to ensure safe and efficient operational practices;*

The number of individuals appointed to oversee the QMS will be entirely dependent on the size and complexity of the organisation. At least one member of senior staff should be appointed as the Quality Manager. Larger organisations may wish to appoint Quality Representatives in each of the relevant departments (functions). The Quality Manager will oversee the operation of the QMS, plan the audits, monitor the results and ensure that any corrective actions are implemented and procedures amended as appropriate.

*(e) perform reviews of the quality management system in place and take remedial actions, as appropriate.*

Reviews of the quality management system and its associated procedures are to take place periodically. There is no set period for this but it is normally accepted that the QMS and procedures are reviewed by the Quality Manager on an annual basis and that the functioning of the QMS is reviewed at the Management Review meeting twice yearly as a minimum.

*An EN ISO 9001 certificate, issued by an appropriately accredited organisation, covering the air navigation services of the provider shall be considered as a sufficient means of compliance. The air navigation service provider shall accept the disclosure of the documentation related to the certification to the competent authority upon the latter's request.*

**Organisations that hold an EN ISO 9001 certificate, issued by an appropriately accredited organisation.**

As stated above where such a certificate is held it shall be '*considered*' as a sufficient means of compliance and does not mean that the production of the physical certificate is sufficient. The scope of

the certification must include the provision of air navigational services and must complement and provide oversight and control of the operation and application of the Safety and Security Management Systems. The ANSP should be prepared to disclose details of external and internal auditing, non-conformities and corrective actions, management review, purchasing and supplier review, and document control etc.

The QMS must conform to the requirements of (a) to (e) listed above.

Some organisations have certificated Quality Management Systems that only cover the head office or management activities. This would not be acceptable. It is important that the scope of the certification includes the actual provision of air navigational services.

*Air navigation service providers may integrate safety, security and quality management systems into their management system.*

This indicates that there is no requirement for the quality management system to be a 'stand alone' system but may be integrated with other management systems. This is very much dependant on organisational size and complexity and management requirements, especially in regard to multi site ANSPs. Smaller or single site ANSPs may find it appropriate to integrate the QMS with the Safety and Security Management Systems as there will be many common areas such as audit and review. In effect it does not matter how the QMS is constructed as long as it meets the elements (a) to (e) of the Common Requirement Annex 1, 3.2.

**Note 1:** In regard to scope of Quality Management Systems the CAA makes a differentiation between Derogated and Non-Derogated ANSPs. For the purposes of initial certification an ANSP applying for a Derogated Certificate need only develop a Document Control System to control all documentation relating to the provision of air navigational services internal and external. A member of staff would need to be appointed as the 'Document Controller' to oversee the operation of the system. This is acceptable for initial certification only and the CAA would expect to see, that over a period of time, the scope of the management system is widened to include all the elements (a) to (e) of the Common Requirement Annex 1, 3.2. Applying ANSPs should consider developing a full QMS whether derogated or non-derogated.

**Note 2:** Commission regulation 805/2011 ATC licensing Article 19 paragraph (d) states:

*Training organisations shall furnish proof of the quality management system as part of the management system in place to monitor compliance with and the adequacy of the systems and procedures which ensure that the training services provided satisfy the requirements set out in this Regulation;*

This regulation requires slightly more than a document control system. It requires a monitoring process which would normally be a process of internal audit and management review, so a procedure on internal auditing and management review will be required whether a derogated or non-derogated ANSP. This can be within the QMS or combined with safety auditing and safety review as part of a SMS.

**Note 3:** Where reference is made to 'documents' or 'documented' this can be either electronic or physical media

#### **Possible Evidence**

A register of applicable legislation  
A documented Quality Management System including all relevant procedures i.e. Document Control, Non-conformance/compliance, Corrective Preventative Actions, Management Review, Purchase and Supplier Review, Internal Audit, Customer Feedback, Recruitment and Training, HR, etc.  
An ISO 9001:certificate  
Audit Plans  
External and Internal Audit Reports  
Master Records Index/Document Register  
Management Review Meeting minutes  
Records of corrective actions implemented/Corrective action register

Approved suppliers list  
Training Records



## 1035 Annex 1 CR3 SAFETY AND QUALITY MANAGEMENT

### 3.3. Operations Manuals

Air navigation service providers shall provide and keep up-to-date operations manuals relating to the provision of their services for the use and guidance of operations personnel.

They shall ensure that:

- (a) operations manuals contain the instructions and information required by the operations personnel to perform their duties;
- (b) relevant parts of the operations manuals are accessible to the personnel concerned;
- (c) the operations personnel are expeditiously informed of amendments to the operations manual applying to their duties as well as of their entry into force.

#### Guidance

*Air navigation service providers shall provide and keep up-to-date operations manuals relating to the provision of their services for the use and guidance of operations personnel*

Operations manuals fall into two categories. Those required by SES regulations, UK regulations and those required by the ANSPs own safety, security and quality management systems

The actual manuals required to be held will vary according to the type of service provided

The manuals required to be held by the regulations are shown in CAP 670 ATS Safety Requirements ATC 02, CAP 493 MATS part 1 Section 8 and CAP410 FIS Manual.

The manuals required by the ANSPs own safety, security and quality management systems will be defined within those systems

*(a) operations manuals contain the instructions and information required by the operations personnel to perform their duties;*

Self explanatory

*(b) relevant parts of the operations manuals are accessible to the personnel concerned*

The appropriate documents are to be available for users at operational control positions refer to CAP 493, MATS part 1 Section 8.

In addition to the documents listed, engineering will need access to equipment manuals, operating instructions and service instructions

*(c) the operations personnel are expeditiously informed of amendments to the operations manual applying to their duties as well as of their entry into force.*

The QMS Document Control procedure must contain details of how amendments to external and internal documents are implemented and recorded, and how all concerned staff are 'expeditiously' informed of such amendments.

#### Possible Evidence

All manuals, operating instructions and service instructions available in appropriate locations.  
The QMS Document Control procedure should define how documents are amended and staff informed of such amendments.

The locations of documents and amendment state, current issue status recorded on the Master Records Index/Document Register.

Records of amendments made in each manual.

Staff information notices relating to amendments.

The QMS Internal audit procedure should ensure that documents are reviewed for currency and held in stated locations.

## 1035 Annex 1 CR4 SECURITY

Air navigation service providers shall establish a security management system to ensure:

- (a) the security of their facilities and personnel so as to prevent unlawful interference with the provision of air navigation services;
- (b) the security of operational data they receive or produce or otherwise employ, so that access to it is restricted only to those authorised.

The security management system shall define:

- (a) the procedures relating to security risk assessment and mitigation, security monitoring and improvement, security reviews and lesson dissemination;
- (b) the means designed to detect security breaches and to alert personnel with appropriate security warnings;
- (c) the means of containing the effects of security breaches and to identify recovery action and mitigation procedures to prevent reoccurrence.

Air navigation service providers shall ensure the security clearance of their personnel, if appropriate, and coordinate with the relevant civil and military authorities to ensure the security of their facilities, personnel and data.

The safety, quality and security management systems may be designed and operated as an integrated management system.

### Guidance

**Note:** The requirements at Annex 1 CR4 relate to 'ATM Security' – i.e. the self protection of assets and infrastructure required to provide air navigation services. Further information on ATM Security and compliance with Annex 1 CR4, is provided in the CAA document: Security Management Systems – Guidance to Air Navigation Service Providers (available from the CAA Project Lead).

*Air navigation service providers shall establish a security management system.*

The SecMS formally documents the policies, processes and procedures adopted by the ANSP to prevent unlawful interference with the provision of its air navigation services.

Consistent with other management systems, a compliant SecMS will follow the 'Plan, Do, Check, Act' principles set out in ISO 27001 and identify the personnel to whom security accountabilities and responsibilities have been attributed.

Relevant posts should be included on the service provider's organisational diagram with reporting and communications lines.

*Air navigation service providers shall establish a security management system to ensure:*

- a) the security of their facilities and personnel so as to prevent unlawful interference with the provision of air navigation services;*

This sets the scope of the SecMS and relates to the facilities (infrastructure and equipment) and personnel required to provide air navigation services. These may be located at air traffic centres, at airports and aerodromes (airside or landside) or at remote locations.

*Air navigation service providers shall establish a security management system to ensure:*

- (b) the security of operational data they receive or produce or otherwise employ, so that access to it is restricted only to those authorised.*

This relates to the information and/or data used by air navigation service providers and airspace users during the execution of their operational activities (such as radar, flight planning and flight progress data), and the need to control access to authorised personnel.

Information held or processed electronically will need appropriate controls and measures to ensure that its confidentiality, integrity and availability is maintained. Further information on Communications, and Technology (ICT) Security is included in the CAA document: Security Management Systems – Guidance to Air Navigation Service Providers.

*The security management system shall define:*

*(a) the procedures relating to security risk assessment and mitigation, security monitoring and improvement, security reviews and lesson dissemination;*

#### *Security risk assessment*

The risk assessment process is fundamental to the management of ATM safety and security and should therefore be formally documented in order that risks can be assessed consistently across relevant parts of an organisation and prioritised accordingly.

Safety risks are traditionally determined by the identification of hazards and the likelihood of unintended consequences, whereas security risks are traditionally determined according to the credible likelihood of threats and the vulnerability of assets.

As ATM integrity and availability aspects are mitigated primarily from a safety perspective these processes may be integrated or completed jointly by relevant safety and security personnel to ensure that the overall level of resilience is achieved and that contingency planning arrangements are viable (CR 8.2 refers). Security risk assessments will need to be documents and reviewed periodically.

#### *Mitigation*

Mitigating measures applied to security risks may also affect the mitigation of safety aspects and will therefore need to be assured from an ATM Safety perspective, where appropriate. The effectiveness of mitigating measures will need to be reviewed periodically and whenever a security breach is detected.

The decision to mitigate security risks or otherwise will need to be recorded and reviewed, as appropriate.

#### *Security monitoring and improvement,*

Security monitoring and improvement is an ongoing process necessary to assure the effectiveness of the SecMS, take account of organisational, procedural and operational changes and make improvements where necessary.

Internal audits should be carried out in accordance with the relevant policy (this will often form part of the QMS/SMS) and a proportion of 3<sup>rd</sup> party audits should be considered to ensure independence of findings or when suitable internal resources are not available.

#### *Security reviews*

Security reviews should be carried out by or on behalf of top management, to assess the continued suitability, adequacy and effectiveness of the system.

Such reviews may take account of responses to audit findings, relevance of security targets and performance measures, the status of preventative and corrective actions, the appropriateness of the organisation's risk appetite and the need for changes to security policies.

The security review process should identify who is authorised to initiate a security review and who is responsible for ensuring the implementation of agreed outcomes. Such reviews may be combined with quality and safety reviews.

#### *Lesson dissemination*

If there has been a security breach or the potential for a security breach is detected, actions need to be taken to prevent occurrence or re-occurrence. In such cases relevant staff (including contractors, where appropriate) need to be made aware of the 'lessons learned'.

This element of the SecMS is particularly relevant at larger and multisite organisations where lessons learned in one area of the organisation or at a particular site, are likely to apply elsewhere.

Relevant procedures must be documented to take account of communication channels at relevant sites. Lesson learned should also become embedded in staff training programmes where appropriate as these provide 'real' and relevant examples of events.

*The security management system shall define:*

*(b) the means designed to detect security breaches and to alert personnel with appropriate security warnings;*

Appropriate measures and controls will need to be established to detect security breaches and to alert personnel with timely and proportionate security warnings.

These are likely to include the monitoring physical access to sensitive areas such as VCRs and airport perimeters, to network administration of information systems and intruder detection systems designed to protect operational data and information systems.

*The security management system shall define:*

*c) the means of containing the effects of security breaches and to identify recovery action and mitigation procedures to prevent reoccurrence.*

Procedures will need to be established to ensure that security breaches are escalated to relevant personnel so that the effects can be contained and mitigated effectively.

This should include the review of recovery actions and mitigation procedures identified in previous risk assessments and the assurance of safety aspects, by responsible personnel.

*Air navigation service providers shall ensure the security clearance of their personnel, if appropriate, and coordinate with the relevant civil and military authorities to ensure the security of their facilities, personnel and data.*

The (level of) security clearance of personnel is usually determined according to the security classification of data / information and need to access sensitive or critical areas, such as VCRs and air navigation facilities and installations.

Security vetting policies normally form part of the HR recruitment process and may form part of a QMS. Co-ordination with civil and military authorities may be necessary for instance, to ensure equivalence of relevant security standards.

*The safety, quality and security management systems may be designed and operated as an integrated management system.*

This indicates that there is no requirement for the Security Management System to be a 'stand alone' system but may be integrated with other management systems.

Whilst best practice suggests a trend towards the integration of safety, security and quality management systems, the degree to which management systems are integrated is very much dependant on organisational size and complexity and management requirements, especially in regard to multi site ANSPs.

Smaller or single site ANSPs may find it appropriate to integrate the SecMS with the Safety and Quality Management Systems as there will be many common areas such as audit and review. In effect it does not matter how the SecMS is constructed as long as it meets the elements of Common Requirement Annex 1, (4).

#### **Possible Evidence**

A documented Security Management System, A Security Manual.

Individual authorities, accountabilities and responsibilities for security of all staff in the form of accountability documents or job descriptions

Documented evidence of how security risk assessment is carried out.

Records of security risk assessments

Documented evidence of procedures detailing how security is to be maintained and the process to be followed when a security breach is detected.

Documented evidence of procedures detailing the audit/monitoring programme and a 'feedback' process

Documented evidence of procedures detailing the security review process and who will be required to attend a Security Meeting and who will chair the meeting and how often it will occur.

Documented evidence of procedures detailing how information regarding 'lessons learned' is to be disseminated to all relevant staff.

Documented evidence of a procedure to define what methods are in place to detect a possible security breach and how appropriate personnel are to be alerted.

List of appropriate personal and contact methods.

Documented evidence of a procedure for investigating security breaches and reviewing associated mitigation.

Documented evidence of a procedure to require the security clearance of personnel. This may be linked to the appropriate HR procedure where such a procedure exists.

Where appropriate documented evidence of a procedure detailing the relationship with civil and military authorities in relation to security management

## 1035 Annex 1 CR5 HUMAN RESOURCES

Air navigation service providers shall employ appropriately skilled personnel to ensure the provision of air navigation services in a safe, efficient, continuous and sustainable manner. In this context, they shall establish policies for the recruitment and training of personnel.

### Guidance

This links directly back to CR1

It may be helpful to produce a competence matrix listing each post required to maintain adequate coverage and the skills required to be held for each post.

Having established this and job descriptions drawn up for each post (As required by 2.1) it will be necessary to produce a recruitment procedure to ensure that appropriately skilled personnel are recruited.

This also relates to CR4 Security, and the recruitment procedure should include appropriate requirements for Disclosure and Barring Service (DBS) checks and other security clearance checks as necessary.

Reference is also made to the *'training of personnel'*, in the context of this CR the training referred to here will be the induction training that all new staff undergo and the necessity to identify any shortfalls in qualifications or experience that can be addressed by ongoing training programs.

It may be appropriate to include procedures on recruitment and training within the QMS.

### Possible Evidence

Many organisations will have an HR department tasked with maintaining HR policies and procedures for recruitment, training and the recording of skills and job descriptions.

A documented recruitment and training procedure to define responsibilities for identifying recruitment needs, makeup of interview boards, DBS and security checks.

The procedure will need to describe how shortfalls in qualifications or experience are identified and assessed and what additional training will be required. This can be achieved by the use the records of competency and training described under CR1.

<b>1035 Annex 1 CR6 FINANCIAL STRENGTH</b>
<b>6.1. Economic and financial capacity <i>(Not applicable to ANSPs requesting a derogated certificate):</i></b>
Air navigation service providers shall be able to meet their financial obligations, such as fixed and variable costs of operation or capital investment costs. They shall use an appropriate cost accounting system. They shall demonstrate their abilities through the annual plan as referred to in point 2.2.2 as well as through balance sheets and accounts as practicable under their legal statute.
<b>Guidance</b>
<p>The organisation should assure itself through independent audit that it can meet its financial obligations, such as fixed and variable costs of operation or capital investment costs.</p> <p>No special provisions for planning and implementation should be necessary, as most organisations would already have an independent financial auditor.</p> <p>The financial requirements included in the Common Requirements should be included in any independent audit agenda.</p>
<b>Possible Evidence</b>
See below

<b>1035 Annex 1 CR6 FINANCIAL STRENGTH</b>
<b>6.2. Financial audit <i>(Not applicable to ANSPs requesting a derogated certificate):</i></b>
In accordance with Article 12(2) of Regulation (EC) No 550/2004, air navigation service providers shall demonstrate that they are undergoing an independent audit on a regular basis.
<b>Guidance</b>
The annual accounts of the air navigation service provider should be subject to an independent audit under Company Law.
<b>Possible Evidence</b>
<p>Provide the last set of audited accounts to the Markets and Consumers Group (MCG)</p> <p><i>MCG, 4th floor, CAA House, 45-59 Kingsway, London.WC2B 6TE Tel: (0)20 7453 6225</i></p>

## 1035 Annex 1 CR7 LIABILITY AND INSURANCE COVER

Air navigation service providers shall have in place arrangements to cover their liabilities arising from applicable law.

The method employed to provide the cover shall be appropriate to the potential loss and damage in question, taking into account the legal status of the organisation and the level of commercial insurance cover available.

An air navigation service provider which avails itself of the services of another air navigation service provider shall ensure that the agreements cover the allocation of liability between them.

### Guidance

Confirm the level and type of liability insurance that you have in place (to cover ANSP related risks only) and the provider of that cover.

If you obtain services or information from other ANSPs specify details and describe agreements to cover the allocation of liability.

In such cases are you included as additionally insured on the liability insurance of another ANSP? Is it your intention to cover liability in this way?

### Possible Evidence

Provide a copy of your public liability insurance certificate to the Consumer Protection Group (CPG).

*CPG, CAA House, 45-59 Kingsway, London. WC2B 6TE Tel: (0)20 7453 6330*



## 1035 Annex 1 CR8 QUALITY OF SERVICES

### 8.1. Open and transparent provision of air navigation services

Air navigation service providers shall provide air navigation services in an open and transparent manner. They shall publish the conditions of access to their services and establish a formal consultation process with the users of air navigation services on a regular basis, either individually or collectively, and at least once a year.

Air navigation service providers shall not discriminate on the grounds of the nationality or identity of the user or the class of users in accordance with applicable [European] Union law.

#### Guidance

*Air navigation service providers shall provide air navigation services in an open and transparent manner. They shall publish the conditions of access to their services and establish a formal consultation process with the users of air navigation services on a regular basis, either individually or collectively, and at least once a year.*

Conditions of access/conditions of use are to be published in the UK AIP  
Unlicensed aerodromes do not appear in the UK AIP and other methods of disseminating condition of access to their services need to be established.

These could be published on the ANSPs web site and it may be appropriate to issue users with hard copies.

They may also be published in other commercial documents.

A method of formal consultation with the regular users of the air navigational services should be documented. This would normally take the form of formal meetings with published agendas and minutes.

A process for customer feedback, customer complaints/compliments should be produced and documented as part of the QMS or SMS

Depending on the size and complexity of the ANSPs operations other meetings with all airport users and stakeholders may also be arranged. Consider Airline/Airport safety meetings where only safety related matters are discussed

*Air navigation service providers shall not discriminate on the grounds of the nationality or identity of the user or the class of users in accordance with applicable Union law.*

This is obviously simply a statement and a non-compliance with this would only be evident after the event should such an event occur, however this should be covered in the QMS or SMS policy statement that air traffic service provision will be in accordance with the National and EU legislation.

#### Possible Evidence

Conditions of access/conditions of use are published in the UK AIP and/or elsewhere

A 'meetings' procedure detailing all meetings, when and how often they are to take place, who is to attend, who is to chair, agenda items etc

Consultation meeting agendas and minutes

A customer complaints/compliments procedure and a record or actions taken as a result of received complaints/compliments.

A policy statement that air traffic service provision will be in accordance with the National and EU legislation

## 1035 Annex 1 CR8 QUALITY OF SERVICES

### 8.2. Contingency plans

Air navigation service providers shall have in place contingency plans for all the air navigation services they provide in the case of events which result in significant degradation or interruption of their operations.

#### Guidance

This is referring to a major event which impacts on the ANSPs ability to continue to provide a safe service such as a major ATS equipment failure, serious aircraft incident, terrorist incident, fire, bomb threat, pandemic influenza, major IT failures etc.

Such situations would normally be considered as part of a business continuity plan requiring specific contingency plans to be drawn up as mitigation.

Such situations may also be covered in the aerodromes overall emergency plans and disaster recovery plans.

Contingency plans need to be tested through an emergency exercise programme, desk top and practical.

Emergency procedure should detail the responsibilities and accountabilities of all personnel involved.

Procedures also need to be in place for events that cause operational deficiencies to arise whereby the facilities promulgated in the UK AIP are temporarily not available. These should be detailed in MATS Part2 /MAFIS.

#### Possible Evidence

Documented Contingency Plans

Emergency Procedures

Business Continuity Plans

Aerodrome Emergency Plans

Disaster Recovery Plans

MATS Part 2/MAFIS

Aerodrome Manual

Emergency Exercise Programme

Emergency Exercise Programme debriefs, wash up meeting minutes

NOTAMs

## 1035 Annex 1 CR9 REPORTING REQUIREMENTS

### 6.1. Economic and financial capacity *(Not applicable to ANSPs requesting a derogated certificate):*

**Note: For new applicants it will not be possible to produce an annual report prior to certification and therefore this requirement cannot be met until one year of operation has been completed.**

Air navigation service providers shall be able to provide an annual report of their activities to the relevant competent authority.

That annual report shall cover their financial results without prejudice to Article 12 of Regulation (EC) No 550/2004, as well as their operational performance and any other significant activities and developments in particular in the area of safety.

The annual report shall include as a minimum:

- (a) an assessment of the level of performance of air navigation services generated;
- (b) the performance of the air navigation service provider compared to the performance targets established in the business plan referred to in point 2.2.1, reconciling actual performance against the annual plan by using the indicators of performance established in the annual plan;
- (c) provide an explanation for differences with the targets, and identify measures for closing any gaps during the reference period referred to in Article 11 of Regulation (EC) No 549/2004;
- (d) developments in operations and infrastructure;
- (e) the financial results, as long as they are not published separately in accordance with Article 12(1) of Regulation (EC) No 550/2004;
- (f) information about the formal consultation process with the users of its services;
- (g) information about the human resources policy.

Air navigation service providers shall make the content of the annual report available to the Commission and the Agency on request and to the public under the conditions set by the competent authority in accordance with national law.

### Guidance

All ANSPs not subject to derogation shall produce and publish an Annual Report covering the requirement set out in the regulation

The Annual Report should be published in full as well as being sent to the CAA.

Commercially sensitive information (other than the extent to which it is required in the SES legislation) need not be included as part of the Annual Report.

Article 12 of the Service Provision regulation requires all ANSPs regardless of size to produce an Annual Report that sets out:

- An assessment of the level and quality of service generated and of the level of safety provided should be made
- An assessment of the performance of the service provider compared to the performance objectives established in the business plan should be made
- A review the performance compared to the performance objectives established in the business plan, reconciling actual performance against the annual plan by using the indicators of performance established in the annual plan
- developments in operations and infrastructure
- information about the formal consultation process with the users of its services
- information about the human resources policy
- the financial results, as long as they are not separately published in accordance with Article 12(1) of the Service Provision regulation

With regard to (c) above. The reference to Article 11 of Regulation (EC) No 549/2004 is obscure and is in fact referring to the reference period defined in Commission Regulation 691/2010 article 7 which is reproduced below.

*1. The first reference period for the performance scheme shall cover the calendar years 2012 to 2014 included. The following reference periods shall be of five calendar years, unless decided otherwise through amendment of this Regulation.*

### Possible Evidence

A statement that annual reports will be issued.

## Annex II

### **Specific requirements for the provision of air traffic services**

To be completed by all units providing ATC and FIS

## 1035 Annex 2 CR1 OWNERSHIP

Providers of air traffic services shall notify to the competent authorities referred to in Article 7(2) of Regulation (EC) No 550/2004:

(a) their legal status, their ownership structure and any arrangements having a significant impact on control over their assets;

(b) any links with organisations not involved in the provision of air navigation services, including commercial activities in which they are engaged either directly or through related undertakings, which account for more than 1 % of their expected revenue; furthermore, they shall notify any change of any single shareholding which represents 10 % or more of their total shareholding.

Providers of air traffic services shall take all necessary measures to prevent any situation of conflict of interests that could compromise the impartial and objective provision of their services

### Guidance

(a) *their legal status, their ownership structure and any arrangements having a significant impact on control over their assets*

Provide details of your legal status, (registration number, if applicable), ownership structure and any arrangements having a significant impact on control of your assets

(b) *any links with organisations not involved in the provision of air navigation services, including commercial activities in which they are engaged either directly or through related undertakings, which account for more than 1 % of their expected revenue; furthermore, they shall notify any change of any single shareholding which represents 10 % or more of their total shareholding*

Declare *any links*, (partnerships or other business relationships), with non-ANSP *organisations* which produce revenue for the ANSP and any *commercial activities* (activities that are undertaken by the ANSP that are not related to the provision of air navigational services) that contribute to the revenue and account for more than *1% of the ANSPs expected revenue*

**Note:** *Organisations not involved in the provision of air navigational services* does not include those organisations that provide direct revenue through the use of the air navigational services provided, such as airlines and other service users. This relates solely to other commercial ventures.

*Providers of air traffic services shall take all necessary measures to prevent any situation of conflict of interests that could compromise the impartial and objective provision of their services*

Dependant on the details provided at (b) above, show what measures you take to prevent conflicts of interest that could compromise the impartial and objective provision of services

### Possible Evidence

Self explanatory.

**1035 Annex 2 CR2 OPEN AND TRANSPARENT PROVISION OF SERVICES**

In addition to point 8.1 of Annex I and where a Member State decides to organise the provision of specific air traffic services in a competitive environment, that Member State may take all appropriate measures to ensure that the providers of these specific air traffic services shall neither engage in conduct that would have as its object or effect the prevention, restriction or distortion of competition, nor shall they engage in conduct that amounts to an abuse of a dominant position in accordance with applicable national and Union law.

**Guidance**

There is no requirement to comment on this Common Requirement and is only included for completeness.

However it should be noted that this piece of legislation is in effect a warning to suppliers not to engage in anti-competitive behaviour

**Possible Evidence**

None required

## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.1. Safety management system (SMS)

#### 3.1.1. General safety requirements

Providers of air traffic services shall, as an integral part of the management of their services, have in place a safety management system (SMS) which:

(a) ensures a formalised, explicit and proactive approach to systematic safety management in meeting their safety responsibilities within the provision of their services; operates in respect of all their services and the supporting arrangements under its managerial control; and includes, as its foundation, a statement of safety policy defining the organisation's fundamental approach to managing safety (safety management);

(b) ensures that everyone involved in the safety aspects of the provision of air traffic services has an individual safety responsibility for their own actions; that managers are responsible for the safety performance of their respective departments or divisions and that the top management of the provider carries an overall safety responsibility (safety responsibility);

(c) ensures that the achievement of satisfactory safety in air traffic services shall be afforded the highest priority (safety priority);

(d) ensures that while providing air traffic services, the principal safety objective is to minimise its contribution to the risk of an aircraft accident as far as reasonably practicable (safety objective).

#### Guidance

*Providers of air traffic services shall, as an integral part of the management of their services, have in place a safety management system (SMS) which:*

*(a) ensures a formalised, explicit and proactive approach to systematic safety management in meeting their safety responsibilities within the provision of their services; operates in respect of all their services and the supporting arrangements under its managerial control; and includes, as its foundation, a statement of safety policy defining the organisation's fundamental approach to managing safety (safety management);*

This links back to Annex 1 CR 3.1 and is simply stating that a documented Safety Management System is required which must cover all the functions that make up the provision of air navigational services. It must be proactive i.e. should contain procedures relating to hazard identification and risk assessment, audit, inspection, safety surveys, staff feedback on safety matters, review and corrective actions etc.

A safety policy statement should be drawn up and signed by the most senior member of management. The policy statement should declare the organisations commitment to safety management and how this will be achieved e.g. staff awareness and training, cooperation with all stakeholders, a commitment to continual improvement through audit and review, the investigation of security incidents and corrective actions and the oversight of safety related changes.

**Note:** What is often forgotten here is that the risks associated with failure of operational software which must be included within the hazard identification and risk assessment process. (refer to 3.2.5 below).

*Providers of air traffic services shall, as an integral part of the management of their services, have in place a safety management system (SMS) which:*

*(b) ensures that everyone involved in the safety aspects of the provision of air traffic services has an individual safety responsibility for their own actions; that managers are responsible for the safety performance of their respective departments or divisions and that the top management of the provider carries an overall safety responsibility (safety responsibility);*

This relates to Annex 1 CR2. The SMS will need to describe the individual authorities, accountabilities and responsibilities for safety of all staff in the form of accountability documents or job descriptions. A member of senior management should be appointed as the Accountable Manager, (see note below) and as Safety Manager; these posts may be combined. Larger organisations may need to appoint safety representatives or members of staff with additional safety responsibilities. Such posts are to be included on the service provider's organisational diagram with reporting and communications lines.

**Note: Accountable Manager**

**Extract from ICAO safety Management Manual 9859 Chapter 8**

8.4.5 The organization must identify the Accountable Executive, who must be a single, identifiable person having final responsibility for the effective and efficient performance of the organization's SMS. Depending on the size and complexity of the organization, the Accountable Executive may be:

- a) the chief executive officer (CEO);
- b) the chairperson of the board of directors;
- c) a partner; or
- d) the proprietor.

8.4.6. There is a tendency to identify who the Accountable Executive should be, from the perspective of the function assigned to the person within the organization. However, more important than who the Accountable Executive should be are what authorities and responsibilities the Accountable Executive should have in order to properly account for the safety performance of the SMS.

These authorities and responsibilities include, but are not limited to:

- a) full authority for human resources issues;
- b) authority for major financial issues;
- c) direct responsibility for the conduct of the organization's affairs;
- d) final authority over operations under certificate; and
- e) final responsibility for all safety issues.

*Providers of air traffic services shall, as an integral part of the management of their services, have in place a safety management system (SMS) which:*

*(c) ensures that the achievement of satisfactory safety in air traffic services shall be afforded the highest priority (safety priority);*

This is very much stating the point of a Safety Management System and the priority given to safety should be reflected in some way within the policy statement.

*Providers of air traffic services shall, as an integral part of the management of their services, have in place a safety management system (SMS) which:*

*d) ensures that while providing air traffic services, the principal safety objective is to minimise its contribution to the risk of an aircraft accident as far as reasonably practicable (safety objective).*

This is clearly the purpose of the SMS and again should be stated within the policy statement.

Take note that 'aircraft accident' is specifically mentioned. This is a reminder that the SMS is an aviation safety management system and that the prevention of aircraft accidents is the overriding objective.

There is the potential for confusing SMS with H&S management systems which should be avoided as their objectives are different.

**Possible Evidence**

A documented Safety Management System including policy statement and procedures relevant to the organisations operations.

The policy statement should be realistic with achievable aims, i.e. procedures need to be in place detailing how the objectives of the policy will be achieved.

Organisational diagram showing the structure of the organisation and the relationship and reporting lines between posts.

For each post in the organisational diagram the safety duties, responsibilities and accountabilities should be defined. This should be in the form of safety accountability and responsibility documents. Such documents should clearly show what the individual is responsible for, what they are accountable for, and whom they are accountable to.

Each document should be signed by the individual concerned indicating they understand their duties, responsibilities and accountabilities and should be countersigned by their line manager or other responsible senior manager to provide the necessary authority for the post or be included in an authorised and documented safety management system.



## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.1. Safety management system (SMS)

#### 3.1.2. Requirements for safety achievement

Within the operation of the SMS, providers of air traffic services shall:

(a) ensure that personnel are adequately trained and competent for the job they are required to do, in addition to being properly licensed if so required and satisfying applicable medical fitness requirements (competency);

(b) ensure that a safety management function is identified with organisational responsibility for development and maintenance of the SMS; ensure that this point of responsibility is independent of line management, and accountable directly to the highest organisational level. However, in the case of small organisations where a combination of responsibilities may prevent sufficient independence in this regard, the arrangements for safety assurance shall be supplemented by additional independent means; and ensure that the top management of the service provider organisation is actively involved in ensuring safety management (safety management responsibility);

(c) ensure that, wherever practicable, quantitative safety levels are derived and are maintained for all functional systems (quantitative safety levels);

(d) ensure that the SMS is systematically documented in a manner which provides a clear linkage to the organisation's safety policy (SMS documentation);

(e) ensure adequate justification of the safety of the externally provided services and supplies, having regard to their safety significance within the provision of its services (external services and supplies);

(f) ensure that risk assessment and mitigation is conducted to an appropriate level to ensure that due consideration is given to all aspects of the provision of ATM (risk assessment and mitigation). As far as changes to the ATM functional system are concerned, point 3.2 shall apply;

(g) 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 (safety occurrences). They shall also demonstrate that they have implemented the requirements on the reporting and assessment of safety occurrences in accordance with applicable national and Union law.

#### Guidance

*Within the operation of the SMS, providers of air traffic services shall:*

*(a) ensure that personnel are adequately trained and competent for the job they are required to do, in addition to being properly licensed if so required and satisfying applicable medical fitness requirements (competency);*

This links back to Annex 1 CR1 which recommended a competence matrix listing each post required to maintain adequate coverage and the skills required to be held for each post. (This should be combined with or linked to a Training Matrix where any identified shortfalls in qualifications or experience can be identified and addressed.

This should be linked to competency schemes and continuation training, for ATCOs, (refer to Commission regulation (EU) 805/2011 ATCO Licences), this will be the Unit Training Plans and TRUCE. (Training in Unusual Circumstances and aircraft Emergencies).

Dependent on the organisations operations consideration should be given to developing competency schemes for other staff requiring skill levels i.e. engineers and meteorological observers

A documented process for the periodic checking of ATCO licenses and medicals needs to be in place and records of the checks made kept

*Within the operation of the SMS, providers of air traffic services shall:*

*(b) ensure that a safety management function is identified with organisational responsibility for development and maintenance of the SMS; ensure that this point of responsibility is independent of line management, and accountable directly to the highest organisational level. However, in the case of small organisations where a combination of responsibilities may prevent sufficient independence in this regard, the arrangements for safety assurance shall be supplemented by additional independent means; and ensure that the top management of the service provider organisation is actively involved in ensuring safety management (safety management responsibility);*

This is describing in more detail the requirement for a Safety Manager to oversee and maintain the SMS. When acting as the Safety Manager the individual should not be accountable to any other section or department head within the organisations on safety matters and should be accountable only to the 'Accountable Manager,' (see Annex 2, 3.1.1).

The reference to small organisations is related to where the Safety Manager and the Accountable Manager may well be the same individual and may also hold another position and be accountable to a line manager other than '*directly to the highest organisational level*' on day to day operational matters.

To ensure '*sufficient independence*' arrangements need to be developed to prevent a conflict of interest i.e. cross departmental safety audits and surveys.

Top management should ensure that safety is at the top of the agenda of Senior Management meetings or specific 'safety meetings'. Such meetings should review significant findings from safety audit and surveys.

*Within the operation of the SMS, providers of air traffic services shall:*

*(c) ensure that, wherever practicable, quantitative safety levels are derived and are maintained for all functional systems (quantitative safety levels);*

This is requiring the development of safety performance indicators. It is necessary to decide what can be measured and how it is to be recorded.

Normally these would be safety occurrences and potential safety critical events.

Initially it will be necessary to gather information on the potential safety performance indicators to set a baseline and then decide what improvements in controls or mitigation can be made to reduce the probability of occurrence.

It will be necessary to set a standard review period so that the effectiveness of implemented mitigation can be assessed for each of the safety performance indicators.

It should be noted that the words '*all functional systems*' are used. Functional systems are defined as 'a combination of systems, procedures and human resources organised to perform a function within the context of ATM', which implies that performance indicators should be developed across all parts of the service providers operations.

*Within the operation of the SMS, providers of air traffic services shall:*

*(d) ensure that the SMS is systematically documented in a manner which provides a clear linkage to the organisation's safety policy (SMS documentation);*

This is requiring that for every aim or objective listed in the safety policy statement there must be corresponding procedures in the SMS manual describing how these aims and objectives are going to be achieved and maintained. Hence it is important to ensure that the aims and objectives in the Safety Policy Statement are realistic and achievable.

*Within the operation of the SMS, providers of air traffic services shall:  
(e) ensure adequate justification of the safety of the externally provided services and supplies, having regard to their safety significance within the provision of its services (external services and supplies);*

This can sit either within the SMS and/or the QMS. The quality and safety of external supplies needs to be assessed, the level of assessment is very much dependent of the type and level of service provided and the potential affects their service might have on aircraft safety.

Normally a QMS would contain a Purchasing and Supplier review procedure which should include a requirement for an impact assessment in relation to safety of externally provided physical services, software and other purchased items

Where the services are supplied 'on site' a control of contractors procedure should be developed and service level agreements drawn up which should include the requirements for safety compliance

The Safety Management System should consider that where the external services provided directly impact on ATS safety it will be appropriate to carry out a risk assessment of the potential for failure or partial failure of the supplied services and appropriate mitigation developed. This is especially important when the external supplies are real time data, communications services and software.

*Within the operation of the SMS, providers of air traffic services shall:  
(f) ensure that risk assessment and mitigation is conducted to an appropriate level to ensure that due consideration is given to all aspects of the provision of ATM (risk assessment and mitigation). As far as changes to the ATM functional system are concerned, point 3.2 shall apply;*

This paragraph often causes confusion and it should be clear that, as is stated in the last line, this is not about 'changes' which are dealt with in Annex 2 CR 3.2.

This paragraph is referring to the 'steady state' i.e. the day to day operations of the ANSP and is a separate process from assessing risks relating to changes to an ATM functional system.

This paragraph requires the ANSP to develop a hazard identification and '*risk assessment*' process and hazards identified and risk assessed for all parts of the ATM functional system.

Having established levels of risk for all parts of the ATM functional system it is necessary to devise and implement '*mitigation*' to minimise the risk to a tolerable level.

This is usually recorded within a Unit Safety Case or Unit Safety Assurance Document but as the bulk of this steady state risk assessment will relate to equipment failure smaller units may include this within the engineering exposition or a Hazard Log, detailing the indentified hazards and the mitigation in place to minimise or eliminate the risk.

Mitigation will include such things as dual channel systems, emergency power supplies, emergency operating procedures etc.

*Within the operation of the SMS, providers of air traffic services shall:  
(g) 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 (safety occurrences). They shall also demonstrate that they have implemented the requirements on the reporting and assessment of safety occurrences in accordance with applicable national and Union law*

The SMS manual should include a process for the investigation of such incidents and for complying with the Mandatory Reporting Requirements of Regulation (EU) no 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation and associated regulation 2015/1018.

I.e. an investigation should be carried out for each reported incident, produce corrective actions to prevent re-occurrence and if appropriate make an MOR to the CAA.

#### **Possible Evidence**

- (a) A competence matrix listing each post required to maintain adequate coverage and the skills required to be held for each post. (This should be combined with or linked to a Training Matrix where any identified shortfalls in qualifications or experience can be identified and addressed.  
Training procedures and training records.  
Competency schemes and Continuation training.  
The records of the maintenance of licenses and endorsements, validations, medical fitness and

engineering qualifications where applicable.

- (b) Organisational diagram showing the structure of the organisation and the relationship and reporting lines between posts including the positions of Safety Manger and Accountable Manager.  
For each post in the organisational diagram the safety duties, responsibilities and accountabilities should be defined. This can be in the form of safety accountability documents or job descriptions. Such documents should clearly show what the individual is responsible for, what they are accountable for, and whom they are accountable to.  
Each document should be signed by the individual concerned indicating they understand their duties, responsibilities and accountabilities and should be countersigned by their line manager or other responsible senior manager to provide the necessary authority for the post. (See Annex 2, 3.1.1).

Agenda and minutes of Senior Management meetings and or Safety Meetings (Safety Review Board).

Audit results and corrective actions.

- (c) A documented procedure for the establishment and maintenance of key performance indicators E.g. Runway Incursions, ATZ Infringements etc.
- (d) Documented procedures in the SMS manual describing how the aims and objectives of the safety policy are to be achieved and maintained.
- (e) A Purchasing and Supplier review procedure which should include a requirement for an impact assessment of the services in relation to safety.  
A control of contractors procedure  
Record of risk assessment of the potential for failure or partial failure of the externally supplied services, which directly impact on ATS safety, and appropriate mitigation
- (f) A documented procedure for hazard identification and risk assessment including a risk matrix providing quantitative values.  
The documented risk assessments across all functional areas.  
Documented 'mitigation to minimise identified risks  
Records of risk assessment review.  
Unit Safety Case/Unit Safety Assurance Documents or Engineering Exposition detailing mitigation for equipment and other failures.  
Hazard log  
Programme of regular review of previous assessments,  
A regular review of unit safety cases/unit safety assurance documentation to ensure derived safety requirements continue to be met in the light of changes to operating environments.  
MATs Pt 2 emergency procedures.
- (g) A documented procedure for investigating safety related incidents and processing MORs which complies with the requirements of regulation 376/2014 and associated regulation 2015/1018  
Records of safety related incidents and resulting investigations.  
Records of resulting corrective actions  
MORs

## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.1. Safety management system (SMS)

#### 3.1.3. Requirements for safety assurance

Within the operation of the SMS, providers of air traffic services shall ensure that:

- (a) 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 compliance with the relevant parts of the SMS (safety surveys);
- (b) methods are in place to detect changes in functional 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 (safety monitoring);
- (c) 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 competent authority (safety records).

#### Guidance

*Within the operation of the SMS, providers of air traffic services shall ensure that:*

*(a) 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 compliance with the relevant parts of the SMS (safety surveys);*

The term '*safety surveys*' is used here. This term is not defined within the legislation but is considered to mean any system of oversight which ensures the correct operation of the SMS. This is normally through a process of internal and/or external corporate auditing. However other methods may be applied in addition to auditing.

**Auditing:** A procedure detailing the process for periodic auditing of all elements of the SMS needs to be produced and records maintained of audits carried out and their findings. Where a non-compliance is indicated or an 'opportunity for improvement' is detected, corrective/preventive actions would need to be carried out and therefore the process of implementing corrective and preventive actions should also be documented, this can be within the audit procedure or separate. The procedure should ensure that the results of audits are distributed to the relevant managers of the process under audit. The results of audits should also be on the agenda of the safety committee meeting or similar body.

**Surveys:** Surveys would not normally be looking for compliance as an audit would. A Survey would take a particular subject matter i.e. Occurrence Reporting or KPI recording or improvements to the operation of a system or procedure and look at how these are being implemented across the ATM service provision to establish 'best practice' and where improvements could be made.'

*Within the operation of the SMS, providers of air traffic services shall ensure that:*

*(b) methods are in place to detect changes in functional 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 (safety monitoring);*

This paragraph is about a method to '*detect changes*'; it is not about the management of safety related changes which is dealt with in section 3.2.

The terminology '*functional systems*' is again used and the definition remains the same as 'a combination of systems, procedures and human resources organised to perform a function within the context of ATM' and also includes '*operations*'. So in effect is referring to equipment, operating procedures and people involved in the provision of air traffic services.

What is required by this paragraph is the ability to detect any slow degradation in equipment, operating procedures and staff competence or staff levels.

Such changes can be introduced from a variety of sources such as the implementation of corrective and preventive actions, management and business decisions, equipment age and performance, changes in maintenance levels etc.

These can be small changes that individually would not be identified as a significant safety related change and therefore not subjected to the requirements of section 3.2.

Therefore a method needs to be in place to monitor the effects of these 'small' changes to ensure that their overall impact does not result in a significant impact on operational safety.

This would normally be done by periodic safety review and the formation of a safety committee or similar body.

Relevant personnel responsible are to monitor the effects of any intentional or unintentional changes to their functional systems and discuss their findings at a safety committee meeting, especially where the change may impact on other sections or departments. Where the committee's findings indicate that the result of a change or the cumulative effect of the changes has resulted in a situation where an *'element is approaching a point at which acceptable standards of safety can no longer be met'* the committee needs to decide on corrective actions and inform the Accountable Manager/Senior Management. Such corrective actions would themselves need to be monitored for effectiveness.

*Within the operation of the SMS, providers of air traffic services shall ensure that:*

*(c) 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 competent authority (safety records).*

Safety records such as audit reports, corrective/preventive actions, meeting agendas and minutes, training records, licences, medical reports, Engineering and ATC watch Logs etc are to be retained. Such records would normally be retained in accordance with the QMS document and record control procedure.

#### **Possible Evidence**

- (a) Audit procedure  
Survey procedure  
Survey results  
Corrective/preventive action procedure  
Audit findings  
Audit Plan  
Corrective/Preventive actions and their implementation  
Minutes of safety committee meetings
- (b) Minutes of Safety Committee Meetings  
Minutes of Senior Management Meetings/Safety Review Board  
Corrective Actions  
Maintenance records  
Equipment outages/availability records
- (c) Safety Records

## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.1. Safety management system (SMS)

#### 3.1.4. Requirements for safety promotion

Within the operation of the SMS, providers of air traffic services shall ensure that:

- (a) all personnel are aware of the potential safety hazards connected with their duties (safety awareness);
- (b) the lessons arising from safety occurrence investigations and other safety activities are disseminated within the organisation at management and operational levels (lesson dissemination);
- (c) all personnel are actively encouraged to propose solutions to identified hazards, and changes are made to improve safety where they appear needed (safety improvement).

#### Guidance

*Within the operation of the SMS, providers of air traffic services shall ensure that:*

*(a) all personnel are aware of the potential safety hazards connected with their duties (safety awareness);*

Safety awareness training should be included in all staff members' induction training and continuation training. Staff are to be made aware *'of the potential safety hazards connected with their duties'*. Staff also need to be made aware of any operational changes that may introduce new potential safety hazards.

*Within the operation of the SMS, providers of air traffic services shall ensure that:*

*(b) the lessons arising from safety occurrence investigations and other safety activities are disseminated within the organisation at management and operational levels (lesson dissemination);*

If there has been a 'safety occurrence investigation and other safety activities' actions need to be taken to prevent occurrence or re-occurrence. In such cases all staff need to be made aware of the 'lessons learned' and the changes that will be made to the SMS and how this will affect individuals especially with regard to any changes in responsibilities and accountabilities.

Document a procedure detailing how information regarding 'lessons learned' is to be disseminated to all relevant staff. This can be by further staff training, circulars, notice boards etc.

*Within the operation of the SMS, providers of air traffic services shall ensure that:*

*(c) all personnel are actively encouraged to propose solutions to identified hazards, and changes are made to improve safety where they appear needed (safety improvement).*

This is about developing an open and just safety culture where by staff can be engaged with the safety management system. Depending on the size and complexity of an organisation consider appointing safety representatives to sit on the safety committees. Define Safety Promotion in an SMS procedure identifying a method for all staff to be actively involved in safety management. Involve staff in the hazard identification and risk assessment process. Staff members close to the actual operations will be more aware of the day to day hazards than senior management and their views should be canvassed. Make use of notice boards, circulars and staff training to emphasise the need for staff participation.

#### Possible Evidence

- (a) Training procedures  
Training Records  
Safety accountability documents or job descriptions
- (b) A documented procedure for disseminating information. Can be part of QMS  
Training Records etc  
In the case of corporate organisations, how are the lessons learned at one unit, disseminated at a second?
- (c) A documented procedure on Safety Promotion  
Agendas and minutes of safety committee meetings  
Notice boards, circulars and staff training

3.2. Safety requirements for risk assessment and mitigation with regard to changes

3.2.1. Section 1

Within the operation of the SMS, providers of air traffic services shall ensure that hazard identification as well as risk assessment and mitigation are systematically conducted for any changes to those parts of the ATM functional system and supporting arrangements within their managerial control, in a manner which addresses:

(a) the complete life cycle of the constituent part of the ATM functional system under consideration, from initial planning and definition to post-implementation operations, maintenance and decommissioning;

(b) the airborne, ground and, if appropriate, spatial components of the ATM functional system, through cooperation with responsible parties;

(c) the equipment, procedures and human resources of the ATM functional system, the interactions between these elements and the interactions between the constituent part under consideration and the remainder of the ATM functional system.

**Guidance**

*Within the operation of the SMS, providers of air traffic services shall ensure that hazard identification as well as risk assessment and mitigation are systematically conducted for any changes to those parts of the ATM functional system and supporting arrangements within their managerial control.*

The legislation here is dealing solely with the management of 'Changes'. These are changes that could impact on the safety of the air navigation services provided. Again the words '*ATM functional system*' are used and the definition remains the same as 'a combination of systems, procedures and human resources organised to perform a function within the context of ATM', but in addition the term '*supporting arrangements*' is added.

These '*supporting arrangements*' are not defined within the legislation but implies that changes that are to be assessed are not only those changes directly related to the provision of air navigational services but those relating to any system, procedure and human resource that supports that provision. I.e. manufactures, design authorities, contractors providing safety management advice etc. Therefore the scope of the SMS must include procedures for the assessment of all changes and those assessments must be documented and recorded.

*Within the operation of the SMS, providers of air traffic services shall ensure that hazard identification as well as risk assessment and mitigation are systematically conducted for any changes to those parts of the ATM functional system and supporting arrangements within their managerial control, in a manner which addresses:*

*(a) the complete life cycle of the constituent part of the ATM functional system under consideration, from initial planning and definition to post-implementation operations, maintenance and decommissioning;*

The wording used here is very much 'engineering language' and would appear to relate solely to equipment but it clearly does not as the words '*ATM functional system*' are once again included. This needs to be looked at carefully especially in relation to major projects where all parts of the definition of 'functional systems' may be subject to changes.

This paragraph is in effect describing the 'scope' of the safety management system for the assessment of changes, the scope being the '*complete life cycle of the constituent part*'. This is indicating that the hazard identification, risk assessment and mitigation process must be an 'active' process that is continually reviewed and updated throughout the '*life cycle*' of a project to ensure that all changes made or become apparent within that life cycle are identified and assessed. The life cycle being as described from '*initial planning*' to '*decommissioning*' where this definition is relevant to '*the constituent part*' i.e. systems, procedures and human resources and '*supporting arrangements*'.



*Within the operation of the SMS, providers of air traffic services shall ensure that hazard identification as well as risk assessment and mitigation are systematically conducted for any changes to those parts of the ATM functional system and supporting arrangements within their managerial control, in a manner which addresses:*

*b) the airborne, ground and, if appropriate, spatial components of the ATM functional system, through cooperation with responsible parties*

This is again referring to the 'scope' of the management system for the assessment of changes to ensure that all changes to all '*components of the ATM functional system*' are captured and assessed and where such changes are brought about by other parties, or may impact upon other parties, they need to be included in the hazard identification, risk assessment and mitigation process.

*Within the operation of the SMS, providers of air traffic services shall ensure that hazard identification as well as risk assessment and mitigation are systematically conducted for any changes to those parts of the ATM functional system and supporting arrangements within their managerial control, in a manner which addresses:*

*(c) the equipment, procedures and human resources of the ATM functional system, the interactions between these elements and the interactions between the constituent part under consideration and the remainder of the ATM functional system.*

This is more on 'scope'. The management system for the assessment of change must ensure that when a change is made to a '*constituent part*' of the '*ATM functional system*' that the effect of that change is assessed in relation to the rest of the '*ATM functional system*'. E.g. the changes made by the installation for a new item of equipment must be assessed and how those changes impact on other equipment, procedures and human resources must also be assessed.

#### **Possible Evidence**

A documented procedure for the assessment of the safety impact of all changes  
The procedure should describe the scope of the assessment system  
Records of hazard identification and risk assessments of all changes  
Safety Cases

3.2. Safety requirements for risk assessment and mitigation with regard to changes

3.2.2. Section 2 (a) (b)

The hazard identification, risk assessment and mitigation processes shall include:

(a) a determination of the scope, boundaries and interfaces of the constituent part being considered, as well as the identification of the functions that the constituent part is to perform and the environment of operations in which it is intended to operate;

(b) a determination of the safety objectives to be placed on the constituent part, incorporating:

(i) an identification of ATM-related credible hazards and failure conditions, together with their combined effects;

(ii) an assessment of the effects they may have on the safety of aircraft, as well as an assessment of the severity of those effects, using the severity classification scheme set out in Section 4;

(iii) a determination of their tolerability, in terms of the hazard's maximum probability of occurrence, derived from the severity and the maximum probability of the hazard's effects, in a manner consistent with Section 4;

(c) the derivation, as appropriate, of a risk mitigation strategy which:

(i) specifies the defences to be implemented to protect against the risk-bearing hazards;

(ii) includes, as necessary, the development of safety requirements potentially bearing on the constituent part under consideration, or other parts of the ATM functional system, or environment of operations;

(iii) presents an assurance of its feasibility and effectiveness;

(d) verification that all identified safety objectives and safety requirements have been met:

(i) prior to its implementation of the change;

(ii) during any transition phase into operational service;

(iii) during its operational life;

(iv) during any transition phase until decommissioning.

**Guidance**

*The hazard identification, risk assessment and mitigation processes shall include:*

*(a) a determination of the scope, boundaries and interfaces of the constituent part being considered, as well as the identification of the functions that the constituent part is to perform and the environment of operations in which it is intended to operate;*

This section is dealing in more detail the requirements of the hazard identification and risk process in relation to changes and requires a series of steps ensuring that hazards are identified and mitigated throughout the complete lifecycle of the 'constituent part'.

Part (a) requires a detailed look at the 'constituent part' to which the changes will apply. I.e. which part or parts of the ATM system will be affected by the change? A change in one part of the 'Functional System' may well impact on other parts therefore the 'scope, boundaries and interfaces' of the part being subjected to change need to be identified.

It is also necessary to identify 'the functions that the constituent part is to perform' once the change is implemented. I.e. identify what it does now and what it is intended to do once the change is implemented and what affect will those changes have on the operating environment

*The hazard identification, risk assessment and mitigation processes shall include:*

*(b) a determination of the safety objectives to be placed on the constituent part, incorporating:*

*(i) an identification of ATM-related credible hazards and failure conditions, together with their combined effects;*

*(ii) an assessment of the effects they may have on the safety of aircraft, as well as an assessment of the severity of those effects, using the severity classification scheme set out in Section 4;*

*(iii) a determination of their tolerability, in terms of the hazard's maximum probability of occurrence, derived from the severity and the maximum probability of the hazard's effects, in a manner consistent with Section 4;*

In this context the term 'safety objectives' means a qualitative or quantitative statement that defines the maximum frequency or probability at which a hazard can be expected to occur;

*b) a determination of the safety objectives to be placed on the constituent part, incorporating:*

*(i) an identification of ATM-related credible hazards and failure conditions, together with their combined effects;*

This step is requiring that once the change has been introduced it will become part of the 'steady state' of the ATM System and like all components of the ATM System it will be necessary to assess hazards and effect of potential 'failure conditions'. The regulation requires this to be carried out prior to the change being introduced.

This requires a process to identify 'credible hazards' that may have been introduced by the change and the potential effect of a 'failure condition' of the changed 'constituent part' on the ATM functional system and supporting arrangements and determine the 'safety objectives' i.e. the probability of occurrence of the hazard or failure conditions. How often are they likely to occur?

*(b) a determination of the safety objectives to be placed on the constituent part, incorporating:*

*ii) an assessment of the effects they may have on the safety of aircraft, as well as an assessment of the severity of those effects, using the severity classification scheme set out in Section 4;*

Here the regulation reminds us of the ultimate aim of the safety management system which is to keep aircraft safe and requires that the system to be developed to assess risk levels (Probability X Severity) in relation to the safety of aircraft using the 'the severity classification scheme set out in Section 4' of the regulation

*(b) a determination of the safety objectives to be placed on the constituent part, incorporating:*

*(iii) a determination of their tolerability, in terms of the hazard's maximum probability of occurrence, derived from the severity and the maximum probability of the hazard's effects, in a manner consistent with Section 4;*

The language used here is not immediately clear but what is implied is that, as mentioned above, a risk factor or risk level is to be derived from a combination of the likelihood or probability that an identified hazard could cause an accident or event leading to an accident and the severity of the resulting accident. The severity levels are defined in Section 4 of the regulation.

Normally this would be done by using a quantified risk matrix resulting in 'levels of risk' i.e. High, Medium, Low, (more levels may be used). As in most cases the risk of an accident or incident cannot be completely eliminated it is necessary to define what levels of risk are acceptable or tolerable. I.e. a high risk factor would not be tolerable but a low risk factor may be.

The levels of risk 'tolerability' should be defined. I.e. under what circumstances would a medium risk level be tolerated. This may mean a high level of monitoring and/or regular review of the identified hazard.

What is described here is the traditional method of assessing risk but the legislation repeatedly uses the term 'safety objectives' which is defines as the maximum frequency or probability at which a hazard can be expected to occur and implies that when deciding on levels of tolerability this should be the main factor. This is effectively covered by the risk assessment method described above as any applied mitigation is unlikely to have any significant effect on severity and would be aimed at reducing the probability of occurrence.

#### **Possible Evidence**

A hazard identification and risk assessment process included in the SMS to assess the risks associated with changes to the ATM System

Remember that the scope of the hazard identification and risk assessment process must include changes to all of the '*ATM functional system*' i.e. 'a combination of systems, procedures and human resources organised to perform a function within the context of ATM', and the '*supporting arrangements*' directly related to the provision of air navigational services and those relating to any system, procedure and human resource that supports that provision.

The process must include the steps mentioned in part (b)

A risk matrix

Tolerability. What level of resulting risk will be tolerated and in what circumstances.

## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.2. Safety requirements for risk assessment and mitigation with regard to changes

#### 3.2.2. Section 2 (c)

The hazard identification, risk assessment and mitigation processes shall include:

(c) the derivation, as appropriate, of a risk mitigation strategy which:

- (i) specifies the defences to be implemented to protect against the risk-bearing hazards;
- (ii) includes, as necessary, the development of safety requirements potentially bearing on the constituent part under consideration, or other parts of the ATM functional system, or environment of operations;
- (iii) presents an assurance of its feasibility and effectiveness;

#### Guidance

*The hazard identification, risk assessment and mitigation processes shall include:*

*(c) the derivation, as appropriate, of a risk mitigation strategy which:*

*(i) specifies the defences to be implemented to protect against the risk-bearing hazards;*

From the risk assessment process developed in accordance with Section 2 (a) (b) the levels of risk associated with changes to the ATM functional system will have been assessed and levels of tolerability been defined. Where a risk level is not within the defined tolerability limit then 'a risk mitigation strategy' will need to be derived to reduce the risk to a tolerable level.

The safety management system must include a strategy for mitigating the identified risk and for developing the 'defences to be implemented to protect against the risk-bearing hazards'. I.e. Control Measures or Mitigation.

*The hazard identification, risk assessment and mitigation processes shall include:*

*(c) the derivation, as appropriate, of a risk mitigation strategy which:*

*ii) includes, as necessary, the development of safety requirements potentially bearing on the constituent part under consideration, or other parts of the ATM functional system, or environment of operations;*

The term 'safety requirement' is defined as 'a risk-mitigation means, defined from the risk-mitigation strategy that achieves a particular safety objective, including organisational, operational, procedural, functional, performance, and interoperability requirements or environment characteristics'.

Here is that term 'safety objectives' again, and is again referring to the probability of occurrence of a hazard and is implying that any risk mitigation means employed needs to be aimed at reducing the probability of occurrence to a defined tolerable level. This must be included within the SMS risk mitigation process.

*The hazard identification, risk assessment and mitigation processes shall include:*

*(c).the derivation, as appropriate, of a risk mitigation strategy which:*

*(iii) presents an assurance of its feasibility and effectiveness;*

This seems to be stating the obvious as there would be no point in developing mitigation that was not feasible or effective however the implication is that the risk mitigation strategy must include a review process of all proposed mitigation or control measures to present 'an assurance of its feasibility and effectiveness'. I.e. can the proposed measures be practically implemented and will they work?

#### Possible Evidence

The SMS must detail a process for developing, reviewing and implementing risk mitigation measures in relation to changes to an ATM functional system.

## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.2. Safety requirements for risk assessment and mitigation with regard to changes

#### 3.2.2. Section 2 (d)

The hazard identification, risk assessment and mitigation processes shall include:

(d) verification that all identified safety objectives and safety requirements have been met:

- (i) prior to its implementation of the change;
- (ii) during any transition phase into operational service;
- (iii) during its operational life;
- (iv) during any transition phase until decommissioning.

#### **Guidance**

*The hazard identification, risk assessment and mitigation processes shall include:*

*(d) verification that all identified safety objectives and safety requirements have been met:*

- (i) prior to its implementation of the change;*
- (ii) during any transition phase into operational service;*
- (iii) during its operational life;*
- (iv) during any transition phase until decommissioning*

This goes right back to Section 1 and is referring to the complete lifecycle of the constituent part of the AMS System that has been subjected to the change, and gives five points within the lifecycle when the applied mitigation needs to be reviewed.

Different mitigation or control measures will need to be applied at different parts of the lifecycle and verification will be required to ensure their effectiveness in meeting the 'safety objectives', i.e. tolerable levels of probability of occurrence.

The SMS Risk assessment and mitigation procedure will need to include the requirement for review and verification of effectiveness throughout the phases of the lifecycle defined in the legislation.

E.g. this should include the introduction of a system into service and the maintenance during its operational life.

#### **Possible Evidence**

The SMS Risk assessment and mitigation procedure will need to include the requirement for review and verification of effectiveness throughout the phases of the lifecycle defined in the legislation.

## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.2. Safety requirements for risk assessment and mitigation with regard to changes

#### 3.2.3. Section 3

The results, associated rationales and evidence of the risk assessment and mitigation processes, including hazard identification, shall be collated and documented in a manner which ensures that:

- (a) complete arguments are established to demonstrate that the constituent part under consideration, as well as the overall ATM functional system are, and will remain tolerably safe by meeting allocated safety objectives and requirements. This shall include, as appropriate, specifications of any predictive, monitoring or survey techniques being used;
- (b) all safety requirements related to the implementation of a change are traceable to the intended operations/ functions.

#### Guidance

*The results, associated rationales and evidence of the risk assessment and mitigation processes, including hazard identification, shall be collated and documented in a manner which ensures that:*

- (a) complete arguments are established to demonstrate that the constituent part under consideration, as well as the overall ATM functional system are, and will remain tolerably safe by meeting allocated safety objectives and requirements. This shall include, as appropriate, specifications of any predictive, monitoring or survey techniques being used;*

Hazard identification and risk assessment methods and the requirements to implement mitigation have been developed in Section 2 above. These methods should be documented and included in the SMS.

This section deals with collating that information and developing Safety Assurance Documentation or Safety Cases.

The legislation here is fairly self explanatory requiring a gathering together of evidence and arguments most of which will have been developed during the hazard identification, risk assessment and mitigation phase.

Arguments should be developed that demonstrate that the mitigation put in place to control the risks brought about during the change implementation, or by the change itself is sufficient to ensure that the 'safety objectives', 'probability of occurrence', will remain within the defined tolerable levels.

The method of compiling safety assurance documentation or safety cases should be included within the SMS.

In addition to the above Common Requirement, Commission Implementing Regulation 1034/2011 (the safety oversight regulation), Article 9 (2), requires organisations to notify the competent authority (CAA) of all planned safety related changes, therefore the SMS must include a process for identifying whether a change is 'safety related' or not i.e. a change that may impact on the provision of air navigational services is a 'safety related change' and must be notified to the CAA in advance of its implementation, in accordance with the process described in CAP 670 Part A.

Guidance on what is considered to be a 'Safety Related Change' is provided in CAP 670 Part A

*The results, associated rationales and evidence of the risk assessment and mitigation processes, including hazard identification, shall be collated and documented in a manner which ensures that:*

- (b) all safety requirements related to the implementation of a change are traceable to the intended operations/ functions*

The term 'safety requirement' is defined as 'a risk-mitigation means, defined from the risk-mitigation strategy that achieves a particular safety objective, including organisational, operational, procedural, functional, performance, and interoperability requirements or environment characteristics'.

This is ensuring that the scope of the collated evidence is appropriate to the change. The evidence should show how a mitigation applied in one area is related to and can be traced back to the function or operation being subject to the change. I.e. the relevance of the mitigation and its intended affect should

be explained.

**Possible Evidence**

Procedure on compiling safety assurance documentation or safety cases included within the SMS.



## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.2. Safety requirements for risk assessment and mitigation with regard to changes

#### 3.2.4. Section 4

##### Hazard identification and severity assessment

A systematic identification of the hazards shall be conducted. The severity of the effects of hazards in a given environment of operations shall be determined using the classification scheme set out in the following table, while the severity classification shall rely on a specific argument demonstrating the most probable effect of hazards, under the worst-case scenario.

Severity class	Effect on operations
1 (Most severe)	Accident as defined in Article 2 of Regulation (EU) No 996/2010 of the European Parliament and of the Council ( 1 ).
2	Serious incident as defined in Article 2 of Regulation (EU) No 996/2010.
3	Major incident associated with the operation of an aircraft, in which the safety of the aircraft may have been compromised, having led to a near collision between aircrafts, with ground or obstacles.
4	Significant incident involving circumstances indicating that an accident, a serious or major incident could have occurred, if the risk had not been managed within safety margins, or if another aircraft had been in the vicinity.
5 (Least severe)	No immediate effect on safety.

In order to deduce the effect of a hazard on operations and to determine its severity, the systematic approach/ process shall include the effects of hazards on the various elements of the ATM functional system, such as the air crew, the air traffic controllers, the aircraft functional capabilities, the functional capabilities of the ground part of the ATM functional system, and the ability to provide safe air traffic services.

##### Risk classification scheme

Safety objectives based on risk shall be established in terms of the hazard's maximum probability of occurrence, derived both from the severity of its effect, and from the maximum probability of the hazard's effect.

As a necessary complement to the demonstration that established quantitative objectives are met, additional safety management considerations shall be applied so that more safety is added to the ATM system, whenever reasonable.

## Guidance

This part of the legislation presents some problems. The above severity grid is repeatedly referred to throughout 3.2 is not really appropriate to the requirements detailed in these preceding paragraphs. This shortfall in this document is recognised by EASA (see recital, section 16 at the front of 1035/2011) and work on redrafting this section is continuing. Until this work is completed Service Providers will be required to develop Risk Classification Systems (RCS) using alternative and more appropriate severity levels. However; to ensure a level of compatibility with the severity table shown in Annex II 3.2.4 any RCS developed should contain five levels of severity, with level one as the highest level i.e. Accident/Catastrophic and level five as the Least Severe or Negligible level.

Another problem is that the legislation repeatedly refers to 'safety objectives' which is defined as the maximum frequency or probability at which a hazard can be expected to occur. However these are not defined either i.e. no quantitative or qualitative levels are provided.

Reference should be made to ICAO Doc 9858 (Safety Management Manual) which provides guidance in developing an RCS and appropriate levels of severity and probability.

CAP 760 provides further guidance on levels of probability.

Having established an RCS it is necessary to conduct '*A systematic identification of the hazards*'. '*The severity of the effects of hazards in a given environment of operations shall be determined using, (The Service Providers RCS), while the severity classification shall rely on a specific argument demonstrating the most probable effect of hazards, under the worst-case scenario*'.

This is implying that when attempting to define a level of risk from the combination of probability of occurrence and severity levels that only the '*worst-case scenario*' can be used. This is intended to ensure that the system captures even the remotest possibility that an Accident/Catastrophe could occur. This does not mean that every identified hazard will end up as a severity level one, but should be placed at the appropriate highest level.

### *Risk classification scheme*

*Safety objectives based on risk shall be established in terms of the hazard's maximum probability of occurrence, derived both from the severity of its effect, and from the maximum probability of the hazard's effect.*

The language used here is difficult but this is stating that the '*Safety objectives*' i.e. the Maximum frequency that hazards can be expected to occur are to be expressed as maximum probability of occurrence (e.g.  $10^{-3}$  to  $10^{-5}$  per hour or once per 40 days to once in 10 years or Reasonably Probable).

This is the maximum probability rate that can be tolerated for a hazard.

This probability rate is derived from a severity X probability matrix taking into consideration the tolerability level.

It will be noticed that the legislation is in effect requiring that Service Providers should identify which levels of risk will be tolerated by the probability of occurrence and not, as is more usual, from the Risk Factor/Level derived from a severity X probability matrix.

As no probability of occurrence levels have been specified and no tolerability levels specified, Service Providers should define these within their RCS and it will be acceptable to define levels of tolerability against Risk Factor/Level derived from a severity X probability matrix.

More guidance on tolerability is provided within the ICAO Doc 9858 (Safety Management Manual).

*As a necessary complement to the demonstration that established quantitative objectives are met, additional safety management considerations shall be applied so that more safety is added to the ATM system, whenever reasonable*

This is referring to the requirement to implement mitigation measures, (control measures or barriers), to reduce the hazards probability of occurrence to a tolerable level.

However; when it is possible and reasonable to do so additional mitigation measures should be introduced to further reduce the probability of occurrence.

In effect reduce the risk level to as low as it is reasonably practicable to do so. Always aim to reduce the risk to the minimum possible level, not just to a tolerable level.

#### **Possible Evidence**

A Risk Control System  
Risk Matrix  
Defined severity levels  
Defined probability levels  
Defined tolerability levels

## 1035 Annex 2 CR3 SAFETY OF SERVICES

### 3.2. Safety requirements for risk assessment and mitigation with regard to changes

#### 3.2.5. Section 5

##### Software safety assurance system

Within the operation of the SMS, a provider of air traffic services shall implement a software safety assurance system in accordance with Regulation (EC) No 482/2008

##### Guidance

Regulation (EC) No 482/2008 lays down the requirements for software safety assurance.

The level to which software safety assurance is implemented is very much dependent on the complexity of the organisations operations and the type of equipment used to provide air navigational services.

More detail in implementing software changes is provided in CAP 670 Part B, Section3, SW01.

To establish whether the requirements of SW01 apply reference should be made to:

##### **AMC to CAP 670**

##### **Guidance on Reasoning that SW 01 does not apply to a Change**

This may be found on the CAA Web Site/Publications.

All organisations will require a documented procedure for assessing the risks associated with software changes.

For organisations using Commercial Of The Shelf (COTS) software the procedure should assess the quality of the supplier and the processes the supplier uses to guarantee the operational quality of software provided.

Further guidance on introducing COTS software changes may be found on the CAA Web Site/Publications.

##### **Acceptable Means of Compliance to CAP 670 SW 01**

##### **Guidance for Producing SW 01 Safety Arguments for COTS Equipment**

More complex organisation may use bespoke or modified software to meet local requirements and safety arguments need to be developed to establish a software safety assurance level that provides an acceptable level of risk prior to the software change. Reference should be made to CAP 670 SW01 Part 3.

Ideally all software changes should be tested in non operational equipment or equipment running in parallel with operation equipment whose failure would not impact on safety. As this may not always be possible all organisations will require a procedure to mitigate the risks associated with a potential failure of air traffic service provision resulting from the software change, or a failure of the new or modified software.

##### Possible Evidence

A QMS/SMS which includes a procedure for assessing the software supplier and the operational quality of purchased COTS software

A procedure for developing safety arguments and software safety assurance levels.

A risk matrix of Likelihood of Occurrence X Software Assurance Levels

A procedure to mitigate the risks associated with a potential failure of air traffic service provision resulting from the software change or a failure of the new or modified software.

3.3. Safety requirements for engineering and technical personnel undertaking operational safety related tasks

Providers of air traffic services shall ensure that technical and engineering personnel including personnel of subcontracted operating organisations who operate and maintain ATM equipment approved for their operational use have and maintain sufficient knowledge and understanding of the services they are supporting, of the actual and potential effects of their work on the safety of those services, and of the appropriate working limits to be applied.

With regard to the personnel involved in safety-related tasks including personnel of subcontracted operating organisations, providers of air traffic services shall document the adequacy of the competence of the personnel; the rostering arrangements in place to ensure sufficient capacity and continuity of service; the personnel qualification schemes and policy, the personnel training policy, training plans and records as well as arrangements for the supervision of non-qualified personnel. They shall have procedures in place for cases where the physical or mental condition of the personnel is in doubt.

Providers of air traffic services shall maintain a register of information on the numbers, status and deployment of the personnel involved in safety related tasks.

That register shall:

- (a) identify the accountable managers for safety-related functions;
- (b) record the relevant qualifications of technical and operational personnel, against required skills and competence requirements;
- (c) specify the locations and duties to which technical and operational personnel are assigned, including any rostering methodology.

**Guidance**

This part of the legislation relates only to technical and engineering personnel and not air traffic control staff. Air Traffic Service Providers are required to ensure that *'personnel involved in safety-related tasks'*, i.e. those tasks that could impact on the safety of the air traffic services provided, are properly trained and competent to carry out those tasks.

This requirement also links back to Annex I CR1 in that it requires that *'rostering arrangements'* are *'in place to ensure sufficient capacity and continuity of service'*. The *'rostering arrangements'* will be dependent on the size of the organisation and may not be necessary, but the organisation must ensure sufficient qualified staff are available to cope with the expected overall demand.

The organisation is required to have in place *'personnel qualification schemes and policy, the personnel training policy, training plans and records'*. The legislation does not define or require any specific training scheme to be used and organisations may develop their own subject to acceptance by the CAA.

ESARR 5 and associated guidance documents provide advice on developing an Air Traffic Service Electronics Personnel (ATSEP) training process.

If it is not intended to internally develop personnel qualification scheme the Personnel Training Certificate Scheme detailed in CAP 670 Part B, Section 1 APP 02 should be used.

It is necessary to *'maintain a register of information on the numbers, status and deployment of the personnel involved in safety related tasks'*. This register should indicate an engineer's 'Type Rating' which will determine which safety related equipments he/she is qualified work on and the maintenance Levels i.e. Major Overhauls or merely 'Front Panel' maintenance etc.

The register should also include all the requirements of (a), (b) and (c) above.

The legislation also refers to *'personnel of subcontracted operating organisations'* and therefore a procedure should be in place to ensure that such personnel are adequately trained and qualified to work on safety related equipment.

Where unqualified personnel are allowed to work on safety related equipment for training purposes they are to be suitably supervised by a qualified individual who will be the *'accountable manager'* for the

*'safety related function'*. Where this occurs records are to be kept

There is also a requirement to *'have procedures in place for cases where the physical or mental condition of the personnel is in doubt'*. Such procedures would normally be part of the HR process.

**Possible Evidence**

A documented PTC scheme

A competence matrix

Training Records

Engineering qualifications

Engineering watch roster if appropriate

Sub contractor qualifications

Records of training and accountable managers responsible for supervision during training.

HR procedures dealing with degraded physical or mental performance.

## 1035 Annex 2 CR4. WORKING METHODS AND OPERATING PROCEDURES

*Providers of air traffic services shall be able to demonstrate that their working methods and operating procedures are compliant with the standards in the following annexes to the Convention on International Civil Aviation as far as they are relevant for the provision of air traffic services in the airspace concerned:*

*(a) Annex 2 on rules of the air in its 10th edition of July 2005, including all amendments up to No 42;*

*(b) Annex 10 on aeronautical telecommunications, Volume II on communication procedures including those with PANS Status in its sixth edition of October 2001, including all amendments up to No 85;*

*(c) Annex 11 on air traffic services in its 13th edition of July 2001, including all amendments up to No 47-B.EN*

### **Guidance**

The Common Requirement is self explanatory.

Demonstration of compliance with the relevant parts of the ICAO Annexes will be required during the Pre-certification/Designation Audit.

### **Possible Evidence**

Operating procedures  
MATS Pt 2  
Manual Of Flight Information Services (AFIS Units)  
Telecommunications log  
Aerodrome manual  
Safety Management System  
Quality Management System  
ATC Licensing  
Contingency Plans  
Emergency Procedures

## Annex III

### **Specific requirements for the provision of meteorological services**

To be completed by all units providing MET



## 1035 Annex 3 CR1. TECHNICAL AND OPERATIONAL COMPETENCE AND CAPABILITY

Providers of meteorological services shall ensure that the meteorological information, necessary for the performance of their respective functions and in a form suitable for users, is made available to:

- (a) operators and flight crew members for pre-flight and in-flight planning;
- (b) providers of air traffic services and flight information services;
- (c) search and rescue services units;
- (d) aerodromes.

Providers of meteorological services shall confirm the level of attainable accuracy of the information distributed for operations, including the source of such information, whilst also ensuring that such information is distributed in a sufficiently timely manner, and updated as required.

### Guidance

CAP 782 Regulation of Aeronautical Meteorological Services describes the services that are provided in the UK to support aviation (Chapter 3). Aeronautical meteorological data can be divided into three main categories:

- a) that provided as a report of actual conditions for a particular given moment by a ground-based observation at, or in the immediate vicinity of an aerodrome that provided as a forecast or warning of a future event;
- b) that provided as a forecast or warning of a future event; and
- c) reports from aircraft in flight.

Aerodromes should ensure that arrangements are in place for suitable facilities to enable flight crews to brief and plan flights.

The Met information for ATS purposes are detailed MATS Pt 1 and CAP 746 Meteorological Observations at Aerodromes (Chapter 5). Details of the equipment that is required to be in place for the provision of this information is detailed in CAP 746 Chapter 7.

FIS Units that do not provide METAR usually provide unofficial local observations. Noting that suitable equipment for the provision of wind, pressure and temperature are required to be in place.

Reliability and Availability of Weather Observations is detailed in Chapter 9 of CAP 746. Details regarding the time of weather forecasts that are routinely made available may be found in the UK AIP GEN 3.5 section.

### Possible Evidence

ATC procedures related to the provision of weather information  
Procedures related to the provision of METAR  
Procedures related to the provision of weather information on ATIS  
FIS procedures related to the provision of weather information

Equipment specifications of Met equipment installed on the aerodrome  
Calibration and Servicing details of Met equipment installed on the aerodrome  
Unit Safety Case detailing contingency arrangements

Met Liaison Visit Report

## 1035 Annex 3 CR2. WORKING METHODS AND OPERATING PROCEDURES

Providers of meteorological services shall be able to demonstrate that their working methods and operating procedures are compliant with the standards in the following annexes to the Convention on International Civil Aviation as far as they are relevant for the provision of meteorological services in the airspace concerned:

- (a) Annex 3 on meteorological service for international air navigation in its 17th edition of July 2010, including all amendments up to No 75;
- (b) Annex 11 on air traffic services in its 13th edition of July 2001, including all amendments up to No 47-B;
- (c) Annex 14 on aerodromes in the following versions:
  - (i) Volume I on aerodrome design and operations in its 5th edition of July 2009, including all amendments up to No 10-B;
  - (ii) Volume II on heliports in its 3rd edition of July 2009, including all amendments up to No 4.

### Guidance

CAP 746 Meteorological Observations at Aerodromes details the UK policy relating to Met information.

Essentially this provides guidance on:

The Met equipment required its siting, servicing and calibration.

The certification of Met Observers and the requirements for competency checking and assessment

The requirements for METAR and Local Routine and Local Special reports.

The dissemination of meteorological messages.

### Possible Evidence

Equipment specifications of Met equipment installed on the aerodrome  
Calibration and Servicing details of Met equipment installed on the aerodrome  
Unit Safety Case detailing contingency arrangements

Met Observer Certificates  
Met Observer competency checking details

ATC procedures related to the provision of weather information  
Procedures related to the provision of METAR  
Procedures related to the provision of weather information on ATIS  
FIS procedures related to the provision of weather information

Met Liaison Visit Report

## Annex IV

### **Specific requirements for the provision of aeronautical information services**

To be completed by all units providing AIS

### 1035 Annex 4 CR1. TECHNICAL AND OPERATIONAL COMPETENCE AND CAPABILITY

Providers of aeronautical information services shall ensure that information and data is available for operations in a form suitable for:

- (a) flight operating personnel, including flight crew, as well as flight planning, flight management systems and flight simulators;
- (b) providers of air traffic services which are responsible for flight information services, aerodrome flight information services and the provision of pre-flight information.

Providers of aeronautical information services shall ensure the integrity of data and confirm the level of accuracy of the information distributed for operations, including the source of such information, before such information is distributed.

#### Guidance

Only one provider of Aeronautical Information Services has been certificated within the UK, therefore ANSPs will not be required to complete this section

#### Possible Evidence

### 1035 Annex 4 CR2. WORKING METHODS AND OPERATING PROCEDURES

Providers of aeronautical information services shall be able to demonstrate that their working methods and operating procedures are compliant with the standards in:

- (a) Commission Regulation (EU) No 73/2010 ( 1 );
- (b) the following Annexes to the Convention on International Civil Aviation as far as they are relevant for the provision of aeronautical information services in the airspace concerned:
  - (i) Annex 3 on meteorological service for international air navigation in its 17th edition of July 2010, including all amendments up to No 75;
  - (ii) Annex 4 on aeronautical charts in its 11th edition of July 2009, including all amendments up to No 56;
  - (iii) without prejudice to Regulation (EU) No 73/2010, Annex 15 on aeronautical information services in its 13th edition of July 2010, including all amendments up to No 36.

#### Guidance

Only one provider of Aeronautical Information Services has been certificated within the UK, therefore ANSPs will not be required to complete this section

#### Possible Evidence

## Annex V

### **Specific requirements for the provision of communication, navigation or surveillance services**

To be completed by all units providing CNS

## 1035 Annex 5 CR1. TECHNICAL AND OPERATIONAL COMPETENCE AND CAPABILITY

Providers of communication, navigation or surveillance services shall ensure the availability, continuity, accuracy and integrity of their services.

Providers of communication, navigation or surveillance services shall confirm the quality level of the services they are providing and shall demonstrate that their equipment is regularly maintained and where required calibrated.

### Guidance

*'Providers of communication, navigation or surveillance services shall ensure the availability, continuity, accuracy and integrity of their services'*

Records need to be kept to demonstrate the *'availability'* and *'continuity'* of CNS systems. Such records should be compared to the manufacturer's expected availability figures. Where the manufacturer's projected availability figures are not met this may indicate the type of changes to functional systems referred to in Annex 2 CR3 (b) and should be subjected to formal safety review.

The *'accuracy and integrity'* of the services provided which will require regular checks and calibration. The nature of these checks/calibration will dependant on the type of equipment in question i.e. internal and external monitoring systems, flight calibration, CRC for data systems. Records of such checks/calibration should be maintained

*Providers of communication, navigation or surveillance services shall confirm the quality level of the services they are providing and shall demonstrate that their equipment is regularly maintained and where required calibrated*

Maintenance and calibration needs to be carried out IAW the manufacture's recommendations and records kept.

Equipment used for calibration must itself be calibrated and records kept.

The QMS/SMS should contain a procedure detailing the methods used for the calibration of test equipment and special tools.

### Possible Evidence

Down time records  
Manufacture's figures  
Maintenance schedules  
Equipment maintenance records  
Error logs  
Fault Logs  
Calibration procedure  
Calibration records  
Maintenance Expositions

### 1035 Annex 5 CR2. SAFETY OF SERVICES

Providers of communication, navigation or surveillance services shall comply with the requirements of point 3 of Annex II on the safety of services.

#### Guidance

This is pointing back to Annex II CR3 safety of services and is requiring CNS providers to develop and implement a safety management system.

Refer to the guidance at Annex II CR3 above.

#### Possible Evidence

### 1035 Annex 5 CR3. WORKING METHODS AND OPERATING PROCEDURES

Providers of communication, navigation or surveillance services shall be able to demonstrate that their working methods and operating procedures are compliant with the standards of Annex 10 on aeronautical telecommunications to the Convention on International Civil Aviation in the following versions as far as they are relevant for the provision of communication, navigation or surveillance services in the airspace concerned:

- (a) Volume I on radio navigation aids in its sixth edition of July 2006, including all amendments up to No 85;
- (b) Volume II on communication procedures including those with PANS status in its sixth edition of October 2001, including all amendments up to No 85;
- (c) Volume III on communications systems in its second edition of July 2007 including all amendments up to No 85;
- (d) Volume IV on surveillance radar and collision avoidance systems in its fourth edition of July 2007, including all amendments up to No 85;
- (e) Volume V on aeronautical radio frequency spectrum utilisation in its second edition of July 2001, including all amendments up to No 85.

#### Guidance

Operating procedures and work instructions should be documented to ensure compliance with the ICAO requirements listed above.

#### Possible Evidence

Operating procedures and work instructions demonstrating compliance with the ICAO SARPs listed. Where appropriate these could be:

- Equipment Operating procedures
- MATS Pt 2
- Manual Of Flight Information Services (AFIS Units)
- Telecommunications log
- Aerodrome manual
- WT Act Licenses
- SSR Interrogator Approval Certificate
- ANO 205 approvals for ATS equipment