GUIDANCE MANUAL FOR AERONAUTICAL INFORMATION SERVICES (AIS)

in the ASIA/PACIFIC REGION

First Edition - 2002

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RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS			
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1.	19 November 2007		
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States may wish to suggest changes to any of the documents that are associated with this Manual. Suggested changes should be forwarded to the ICAO Asia and Pacific Regional Office, Bangkok, Thailand.

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Introduction

Role of the AIS and the Globalizaztion of CNS/ATM

Clearly the role of the AIS is one of the foundation building blocks for the successful transition to a global ATM system. At the core of this building block lies the Quality System that will provide quality and timely aeronautical data and information to the aviation community.

"Annex 15- *Aeronautical Information Services* notes at 3.2 that:

> *Note.- International Organization for Standardization (ISO) 9000 series of quality assurance standards provide a basic framework for the development of a quality assurance programme. The details of a successful programme are to be formulated by each State and in most cases are unique to the State organization."*

In addition to the requirements described in Annex 15 for Quality Systems, Chapter 9 of *the Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750) states:

> *"9.4   The role and importance of aeronautical information/data has changed significantly with the implementation of RNAV, RNP and airborne computer-based navigation systems. These systems are all data-dependent, and in that respect aeronautical data have become the crucial and critical components of the system. Consequently, corrupt or erroneous aeronautical information/data can potentially affect the safety of air navigation. In this respect, as of 1 January 1998, each Contracting State must take necessary measures to introduce a properly organized quality system containing procedures, processes and resources necessary to implement quality management at each functional stage of the data process. Established quality systems must provide users with the necessary assurance and confidence that distributed aeronautical information/data satisfy established requirements for data quality (accuracy, resolution and integrity) and timeliness."*

Objectives of the Guidance Manual

The Guidance Materials contained in this Manual have been developed to provide assistance to States in the Asia/Pacific Region for the development and implementation of Quality Systems and Training Guidelines for Aeronautical Information Services as well as Common Operating Procedures for Automated AIS Systems.

The Guidance Manual will provide key stepping stones to assist States with an understanding of the requirements for a Quality System, and provide a foundation for distributed aeronautical data and information to satisfy the established requirements for timeliness and accuracy in compliance with the requirements of ICAO Annex 15 and other relevant procedures.

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CHAPTER 1

PART 1 –

A QUALITY SYSTEM FOR AERONAUTICAL INFORMATION SERVICES (AIS)

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1. Introduction

This Guidance Material has been constructed to provide information for States about the implementation of a quality system for their aeronautical information service (AIS), and should be read in conjunction with the appropriate ICAO and International Organisation for Standardisation (ISO) references.

ICAO Annex 15 – *Aeronautical Information Services* shows the need for States to "…take all necessary measures to introduce a properly organised quality system containing procedures, processes and resources necessary to implement quality management at each function stage as outlined…." In this context, the function stages relate to the functions of AIS "to:

    a)   receive and/or originate;
    b)   collate or assemble;
    c)   edit;
    d)   format;
    e)   publish/store; and
    f)   distribute.

aeronautical information/data concerning the entire territory of the State as well as areas in which the State is responsible for air traffic services (ATS) outside its territory."

ICAO notes that the ISO 9000 series of quality assurance standards provides a basic framework for the development of a quality assurance program.

These International Standards specify the requirements for a quality management system where an organisation needs to:

    a)   demonstrate its ability to consistently provide products that meet customer and applicable regulatory requirements; and

    b)   address customer satisfaction through the effective application of the system, including processes for continual improvement and the prevention of non-conformity.

The ICAO references and the International Standards provide clear directions towards the needs and requirements for a Quality System within a State's AIS to meet customer needs and expectations, and where continuous improvement is a pattern of organisational behaviour.

2. What is in these Guidelines?

These Guidelines contain information about a number and variety of topics designed to assist States with the implementation of a Quality System. The Guidelines have been formulated around the relevant ISO Standards to

provide this assistance, and to provide easy-to-read material as a starting point for the development and maintenance of a Quality System for AIS.

The Guidelines are not intended to replace ISO documentation and should be read in conjunction with the appropriate Standards.

3.   The Way Ahead

In addition to these Guidelines, you will find that there are a number of other sources on information that will be able to provide you with advice about the introduction or enhancement of your Quality System. Some of these sources might be:

a)   Government Departments;

b)   Standards Associations bodies;

c)   Certification or Registration groups;

d)   Internet Websites;

e)   Industry and Professional Associations; and

f)   Other businesses putting in a Quality Management System.

After reading through the Guidelines and deciding what needs to be done to introduce a Quality System, the next important decision is "How are we going to do it?" The answer to this might be extra staff or other resources, or external assistance. In any case you will need to formulate a plan to determine exactly what is required, and what the steps forward are.

In some instances these might be small, carefully planned incremental steps leading to a fully functional Quality System. Depending on your resources, you may wish to implement one or two parts at a time before moving on.

The 9 Steps leading to the implementation of a Quality System are shown in Section 13-Steps Towards Implementation of a Quality System.

If you decide that the best way forward is to engage a consultant to progress the implementation of your Quality System, an important step will be to clearly establish the outcomes and what will be provided at the end of the project.

An effective Quality System is one that is written and organised around the way your AIS operates. Treat "ready-made" solutions with some degree of caution.

When your AIS staff are involved in the development and implementation of a Quality System, they will develop a sense of "ownership" and provide an

easier path to making the Quality System work. Often it is difficult to inspire ownership of a Quality System when it has been developed in isolation.

There is no short cut to the development and documentation of a robust Quality System. It takes time and effort, but at the end is a worthy prize.

Certification and Registration

Certification is generally regarded as the formal recognition by others of your Quality Management System. In some States, certified Quality Management Systems are considered to be registered and the term "registration" is used instead of certification.

Certification or Registration is not a mandatory requirement to implement the ISO 9000 series of Standards, but may be required by some of your customers. A decision to seek Certification or Registration may equally be influenced by regulatory or statutory requirements.

If you choose to have your AIS Certified or Registered, the first step should be to contact Certification or Registration agencies to determine what is offered by these groups and what the likely costs will be for the initial Certification or Registration, and any ongoing costs that might apply to re-assessments of your Quality System. Section 14-What Does Certification and Registration Mean, provides some additional information about the Certification and Registration process.

4.   A Quality System

The Need for a Quality System

The importance of aeronautical data and information to the world's aviation community cannot be overstated. Aeronautical data and information provides one of the essential elements and the backbone to enable aircraft operations to take place safely and efficiently throughout the world.

ICAO Annex 15 points to the need for a Quality System as being:

"The established quality system shall provide users with the necessary assurance and confidence that distributed aeronautical information/data satisfy stated requirements for data quality (accuracy, resolution and integrity) and for data traceability by the use of appropriate procedures in every stage of data production or data modification process. The system shall also provide assurance of the applicability period of intended use of aeronautical data as well as that the agreed distribution dates will be met."

This means that the worldwide aviation community is looking to the AIS's so that they can have a confidence that they are being provided with accurate data and information that meets the required resolution and retains its integrity

throughout its life cycle. While this is the principal reason for having a quality system, a Quality System also provides opportunities for:

a)   Meeting regulatory requirements;

b)   Performance, coordination and productivity improvements;

c)   Increased focus on your business objectives and customer expectations;

d)   Achievement and maintenance of the quality of your products and services to meet your customers stated or implied needs;

e)   Increased customer awareness and satisfaction;

f)   Confidence that your intended quality is being achieved and maintained;

g)   Being able to demonstrate your organisation's capabilities to customers and potential customers; and

h)   Expanded market opportunities.

By itself, introduction of a Quality System will not lead to automatic improvements in product or service quality, or an improvement in work practices and processes. What it will do however, is provide the tools and guidance for those working in the AIS field to use a defined and systematic approach to their work and business.

What is a Quality System?

A Quality System for AIS might best be described as the way the organisation carries out its business activities for the provision of AIS, relates to an organisational structure; together with the documentation, processes, and resources, necessary for the AIS to achieve its quality objectives and to meet customer's requirements.

A Quality System means that everything must fit together, to form one cohesive and effective system. This means that an organisation with a Quality System will have:

a)   a Quality Manual that outlines the quality system;

b)   procedures for all activities within that system; and

c)   planning activities to ensure resources are available for the effective conduct of the quality system.

One of the most important things that must be in place for a Quality System to work is commitment from all of those affected to ensure that the documented procedures, processes and practices are not only in place, but are vigorously applied.

A Quality System will strive for excellence, always looking for ways to do the work better through a program of continuous improvement.

Permissible Exclusions

In some AIS' there may be processes that are not performed, for example Procedures Design Work. Part 7, and only in Part 7, of the ISO Standards makes allowances for some aspects to be excluded from a Quality Management System if they are not being carried out. These are known as Permissible Exclusions, and could arise due to the:

a)   nature of the product range or services provided by a particular AIS;

b)   customer requirements; and

c)   regulatory requirements.

However, you cannot simply claim a Permissible Exclusion just because you do not want to do it. If you question a requirement in this Part of the ISO Standard, then you should ask yourself:

a)   What is the idea or principle behind this requirement?

b)   What kind of problem could be prevented by meeting this requirement?

c)   Why would meeting the requirement give confidence to the customer?

Within Part 7 of the ISO Standard, the following processes are most likely to be considered for Permissible Exclusions:

a)   Design and Development;

b)   Identification and Traceability;

c)   Customer Property; and

d)   Control of Measuring and Monitoring Devices.

Importantly, if you decide to proceed with Permissible Exclusions you will need to justify this in the Quality Manual and, if you are seeking Certification or Registration, with these bodies as well.

What is ISO 9000 About?

In very simple terms, the requirements of the ISO Standards for a Quality System can be summarised as being three straightforward tasks:

      a)   Say what you do;

      b)   Do what you say; and

      c)   Show that you did it.

Say what you do:

This task requires AIS to document how it undertakes its activities.

Do what you say:

This task requires AIS to undertake its activities as recorded in the documented procedures.

Show how you did it:

This task requires AIS to maintain records that prove that it undertakes its activities as documented and has done so for a recognised period of time.

Products

One of the many terms used within the Quality System is "product". In the context of the International Standards, and the diagrams that follow, a product is defined by the standards as:

Product:	Result of activities or a process.

The Standards note that there are four generic product categories:

      a)   Hardware;

      b)   Software;

      c)   Services; and

      d)   Processed materials.

Products may be combinations of the four generic product categories.

The Process Model

Activities that receive inputs and convert them to outputs can be considered to be a process. In many cases, an output from one process will form the input to the next process, for example data is received from an aerodrome operator, entered into the AIS database, and when combined with other data, is provided as an output for charting or a document.

To function effectively within a quality system, AIS must identify and manage numerous linked processes. Systematic identification and management of these many processes and the interactions between these processes that are used within an AIS are often referred to as a "process approach".

| → | Data | → | Database entry | → | Output to charts |
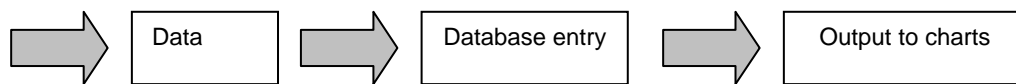
Fig. 1 – A simplistic process

A more sophisticated conceptual process model recognises the role that the customer plays in the definition of requirements as inputs. By monitoring customer satisfaction, or in some cases dissatisfaction, we are able to monitor and evaluate whether or not defined customer requirements have been met.

Continuous Improvement Program
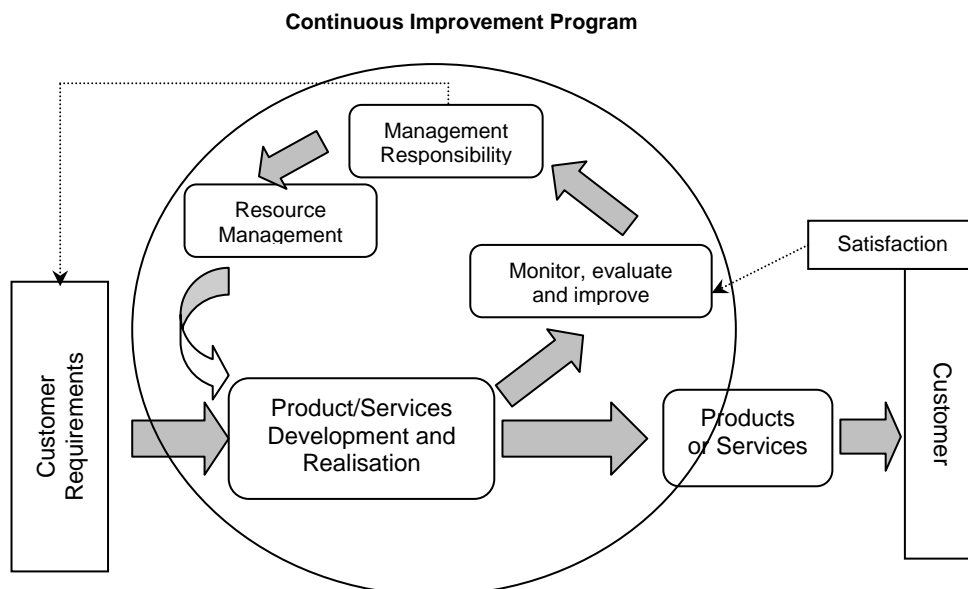
Fig.2 – Conceptual model of the "Process Approach"

Fig. 2 demonstrates that the process approach model and the Quality System starts and finishes with the customer. In the first instance there is the customer requirement on the left hand side of the diagram, on the right hand side there is the degree of customer satisfaction with the product or service that has been provided as a result of a number of inputs. Customer satisfaction is measurable against the initial requirements and specifications.

Perhaps the most important feature of the model is the need to obtain information about customer satisfaction, this feeds back into the monitoring and evaluation phase, which are in turn a measure of overall performance.

The loop into management responsibility is there to show that management has an important role to review customer feedback to ensure that the appropriate policies, objectives and strategies are in place, along with the necessary resources, to meet the quality challenges.

Resources are a key component of the Quality System. Resources are the equipment, materials and people that make the overall system work. Human resources need to be properly trained and competent to achieve the desired outcomes.

As noted earlier, a Quality System will strive for excellence, always looking for ways to do the work better through a program of continuous improvement. A Quality System will continue to challenge the outputs against the customer requirements and specifications to ensure that customer's expectations are met and exceeded. This is why all of the elements in the Continuous Improvement Program are so important. Outputs must be monitored and evaluated, management must consider the evaluations and apply the planning and resources to achieve the desired outcomes.

5.   General Requirements

The General Requirements for the implementation of a Quality Management System are to:

> a)   identify the processes needed for the Quality Management System;
>
> b)   determine the sequence and interaction of these processes;
>
> c)   determine criteria and methods required to ensure the effective operation and control of these processes;
>
> d)   ensure the availability of information necessary to support the operation and monitoring of these processes; and
>
> e)   measure, monitor and analyse these processes, and implement action necessary to achieve planned results and continual improvement.

General Documentation Requirements

Documentation for a Quality Management System must include:

a) documented procedures (see the section that follows for a description of Documented Procedures); and

b) documents required by the organisation to ensure the effective operation and control of its processes.

The extent of the Quality Management System is, however, dependent on the following, and may be in any form or type of medium:

a) size and type of the organisation;

b) complexity and interaction of the processes; and

c) competence of personnel.

Documented Procedures

ISO requirements for a Quality System call for 6 Quality Management System procedures to be in place. These are mandatory written procedures that describe how your organisation performs the activities described in each of the 6 Quality Management System procedures described below:

1. Control of Documents;

2. Control of Quality Records;

3. Internal Audit;

4. Control of Non-conformity;

5. Corrective Action; and

6. Preventative Action.

Documented Procedures should indicate who does what, where and when they do it, why they do it, and how. It is up to the organisation itself to decide the level of detail that is included in the Documented Procedures. Largely, this will depend on:

a) methods used;

b) skills needed;

c) training; and

       d)   extent of supervision required.

Documented Procedures should not contain what you would like to happen in the organisation, but rather an accurate description of what really happens.

A robust Quality Management System will involve staff, to the extent that they can contribute, in the writing of Documented Procedures. The earlier and the more staff that are involved will lead to greater staff involvement, understanding and "buy-in" to the procedures and practices.

6. Management Responsibility

AIS Managers have a number of demonstrable responsibilities within the Quality System. These responsibilities relate to:

       a)   Quality Policy;

       b)   Commitment to Quality;

       c)   Customer Focus;

       d)   Planning;

       e)   Management Representation; and

       f)   Management Review.

Each of these responsibilities is addressed in further detail below.

A quality system is dependent on all those involved in its provision being quite clear about their responsibilities and authorities. The development and use of accurate position descriptions for all staff in AIS that address both the responsibilities and authorities of each position can accomplish this.

Quality Policy

The International Standards require management to have a Quality Policy in place that is in writing and is visible to staff. The quality policy forms the an important element for the work of the AIS, and establishes:

       a)   a commitment to quality;

       b)   what the quality objectives or the organisation are; and

       c)   how the objectives relate to customers expectations.

The Quality Policy must address these issues and ensure that it:

a) is appropriate for the needs of the organisation;

b) includes commitment to meeting requirements and continual improvement;

c) provides a framework for establishing and reviewing quality objectives;

d) is communicated, understood and implemented throughout the organisation; and

e) is reviewed for continuing suitability.

A Quality Policy includes AIS's definition of quality and how management and staff will demonstrate their commitment to the policy, and provides an identifiable focus for all staff in their daily activities.

One of the best techniques to develop a Quality Policy is a facilitated meeting of all staff at which individual definitions of "quality" can be consolidated to provide a definition and statement that encapsulates all staff's beliefs and understandings.

Commitment to Quality

AIS Managers must take an active responsibility in the establishment and maintenance of a Quality System. This role includes:

a) Definition and implementation of quality policy;

b) Communicating the quality policy within the organisation, including the importance of meeting customer, regulatory and legal requirements;

c) Setting objectives, strategies and targets derived from the policy;

d) Position descriptions that describe the role, responsibilities and authorities for all staff;

e) Ensuring that resources are adequate;

f) Appointment and support of a management representative; and

g) Regular reviews of the effectiveness of the system.

Customer Focus

Meeting customer and regulatory requirements is our primary business. To ensure that these requirements are met, and that customer confidence is maintained, AIS must have a clear understanding and defined specifications in the form of user requirements. Measurement and analysis of outcomes will be difficult, if not impossible without this specification.

Planning

The step that follows the publication of the Quality Policy is the setting of objectives, strategies and targets that will show how the organisation expects to implement the quality policy. Targets need to be realistic, relate to the customer's statement of requirements and measurable. The plan must include details of the continual improvement program.

Thorough planning sets the scene for other important aspects of the organisation's operations:

a)   staff performance measurements;

b)   budgets;

c)   overall business performance measurements;

d)   asset and facility purchases;

e)   staff competencies and training requirements;

f)   other resource requirements; and

g)   the continuing improvement program.

In some cases, planning may be conducted as a matter of routine, for example on an annual basis, whereas in others, specific project planning may be required for new or substantially altered products or services.

Planning enables an organisation to exercise control over routine business and changes to ensure that the Quality Management System is effective during the routine activities and after change.

7.   Administration

Responsibility and Authority

A Quality System requires responsibilities and authorities for all staff members to be defined and communicated. This means that everyone in the organisation knows what they are responsible for, what the level of their

authority is and what the reporting arrangements are. Responsibilities and authorities can be identified, recorded and communicated through published job descriptions. An organisational chart should supplement job descriptions.

Management Representative

Quality Systems are required to have a Management Representative who looks after the Quality System, and who has the responsibility and authority that includes:

a)   ensuring that processes for the quality management system are established and maintained

b)   reporting to senior management on the performance of the quality management system, including needs for improvements; and

c)   promoting awareness of customer requirements throughout the organisation.

Internal Communications

Internal communications is all about keeping everybody in the team informed about what is going on and to keep abreast of the processes, changes and outcomes. This includes the good news and the bad news.

Effective internal communications will provide the ability to:

a)   receive information quickly and act on it;

b)   build trust among the staff;

c)   identify business opportunities; and

d)   identify opportunities for improvement.

Quality Manual

A Quality Manual is a controlled document that is perhaps the most important part of the Quality System. This is where it begins and includes the details of:

a)   the scope of the quality management system;

b)   the documented procedures or a suitable reference; and

c)   a description of the sequence and interaction of the processes included in the Quality Management System.

The Quality Manual is the "map" for the organisation, and where the following items would be found:

a)   the quality policy;

b)   the activities of the business;

c)   how the documentation works and where people might look to find information about how to do things;

d)   a definition of any terms having a unique meaning to your business; and

e)   statements of responsibility and authority.

If these items are not specifically included in the Quality Manual, the manual should contain a reference to where they can be found.

AS/NZS ISO 10013 *"Guidelines for developing quality manuals"* provides advice about writing a quality manual.

Section 2 of Chapter 1 of this Guidance Manual contains a sample Quality Manual to be used by an AIS organization.

Control of Documents

All documents required in a quality management system must be controlled. Procedures must be documented to:

a)   review documents for adequacy and then approve them before use;

b)   review, update as necessary and re-approve documents;

c)   identify the current revision status of documents;

d)   ensure that relevant versions of applicable documents are available at points where they will be used;

e)   ensure that documents remain legible, readily identifiable and retrievable;

f)   ensure that documents of external origin are identified and their distribution is controlled;

g)   identify changes in the document; and

h)   prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

Documents defined as Quality Records must also be controlled.

Document control is about making sure that the document in use is the "right" document. A controlled document will be the latest approved and applicable version for the work to be done. This is particularly important if staff are to have the information they need to do the job correctly.

The simplest way to control documents is to make them available on the computing network, preferably without any paper copies. A number of computing software packages make document control relatively simple. For example the "save date" can be saved in a footer or header of every page. A statement can be added to the effect that any paper copy is uncontrolled and that it is up to the reader to ensure that the copy being used is the latest version by checking on the network.

There is no limit to the number of documents that can be controlled in a Quality System, but the additional overhead in controlling the document must be balanced against any potential problems caused by using an inaccurate or obsolete version.

Document Master Copy

Each controlled document has one master copy. This is the copy to which all changes are initially made and from which further copies are made and issued as required. The location of the master copy is recorded on the Document Master List.

Document Owner

Each controlled document has an owner. This is the person or persons authorised to review and approve changes requested to the document. The document owner is also recorded on the Document Master List.

Controlled and Uncontrolled Copies

Documents may be issued as controlled or uncontrolled copies. Controlled copies are those issued to particular persons with a record of who has which copy. This record is kept with the document master copy. For controlled copies the document owner is responsible for ensuring that the registered holder of the copy is given an updated copy when the document is modified.

Uncontrolled copies are issued with no record of who has a copy. For uncontrolled copies the document holder is responsible for ensuring that the copy they have is up-to-date.

Control of Quality Records

Records exist in all organisations. Quality Records are required to provide evidence of conformance with requirements and of effective operation of the quality management system. Procedures must be documented for the identification, storage, retrieval, protection, retention time and disposition of quality records.

A Quality Record is a record produced following a procedure in a Quality System document. This record provides a reference when reviewing progress and/or performance, and is often a form.

Each Quality System document must include definitions of the Quality Records to be produced and kept.

Quality records will provide AIS with information to help manage the business better. This is the part that enables you to "show how you did it".

In some instances, retention periods will be dictated by legal or regulatory requirements, financial requirements or customer's specifications. Details about specific retention periods should be recorded in the documented procedures.

Examples of Quality Records include:

a)   customer orders, specifications and requirements;

b)   meeting notes, *e.g.* Management review;

c)   audit reports;

d)   non-conformance records (service failure reports, customer complaints);

e)   corrective action records;

f)   files on suppliers, *e.g.* evaluation of suppliers and their performance history;

g)   process control records;

h)   inspection and testing reports;

i)   training records; and

j)   records of goods received and delivered.

Records, indexing and filing can be in any appropriate form; hard copy, or electronic. Storage needs to be appropriate to the circumstances and the medium and should be such that the risk of deterioration, damage or loss is minimised.

The International Standards also call for the organisation to identify and document who has access to the quality records.

To help in deciding what quality records need to be kept, it is useful to consider that all quality records can be considered under three different categories:

a) What is received before a procedure starts;

b) What is produced to show intermediary steps have been completed; and

c) What is produced to show a procedure has been completed.

Quality records are usually produced internally however, they may also be produced outside the AIS, for example a customer's order, or an external auditor's report.

For each quality record identified, the following aspects need to be defined:

a) What the record is;

b) Who is responsible for its filing;

c) How long the record is required to be kept;

d) Where the record will be kept; and

e) Who is responsible for the record's disposal.

A tabular layout may be useful to present the information required.

Record	Responsibility	Minimum Retention Period	Location
What the record is	Who is responsible for its filing. Who is responsible for its eventual disposition.	The minimum time the record must be retained for.	Where the record is kept

In some ways, by default, the person deemed responsible for the record's filing is also responsible for and authorised to dispose of the record. In this case, one position can be listed as responsible for the record, and for the filing and disposition.

A minimum period is specified to supply an audit trail for accountability purposes. The audit trail may be required for official inquiries or litigation.

Specification of a minimum retention period allows us to keep records longer if required. Records are often kept on hand for as long as there is space to accommodate them.

In summary, the records management process ensures that all quality records are identified and controlled, in order to provide a ready reference to the effectiveness of our Quality System documents.

The records management process occurs over an extended period and interleaves with other processes, particularly with those for document development and control.

An example of how the records management process might be managed follows in the table below.

Stage	Description	Explanation
1.	The need for a record is identified.	
2.	The record definition is produced and documented.	
3.	The record is produced.	
4.	The record is indexed.	Uniquely identifying individual records assists in filing and retrieval. Records with no un1que identifier can be marked by allocating A specific location for storage. Whatever approach is taken should be recorded as part of the record definition.
5.	The record is filed in the location specified in the record definition.	The location should be chosen to ensure that the record is not damaged for the period it is to be retained.
6.	The record is stored for the period specified in the record definition.	Depending on the retention period, it may be necessary to regularly review the storage to ensure that the records are not being damaged.

7.	The record is disposed of.	The person responsible for its storage (as provided for in the record definition) is authorised to dispose of the record.

Management Review

Quality management systems must be reviewed on a regular basis to ensure that they remain appropriate and relevant. Where changes are planned or being implemented, more frequent review periods may be warranted.

To ensure that the entire quality management system is covered, a consistent approach should be followed to ensure that the review addresses:

- a) the relevance of quality policy and objectives to current needs;

- b) how the quality management system is working and whether the objectives are being met;

- c) any quality problems and actions taken;

- d) any customer complaints;

- e) quality audit reports (both internal and external);

- f) areas for improvement/changes needed;

- g) any outstanding actions from previous reviews;

- h) training needs; and

- i) equipment, working environment and maintenance.

8. Resource Management

Provision of Resources

Organisations are required under the International Standards to determine and provide in a timely manner, the resources needed to:

- a) implement and improve the processes of the Quality Management System; and

- b) address customer satisfaction.

In this context, the term resource applies to personnel, facilities and equipment.

Human Resources

Staff who are assigned responsibilities defined in the Quality Management System must be competent on the basis of applicable education, training, skills and experience.

People assigned to carry out quality activities are required to be competent to do them, otherwise a quality product or service is less likely to result. The standards require competence to be based on appropriate or applicable education and training and also on skill and experience that the people possess. There is however, no requirement to have all four, only those applicable to the particular task.

Appropriately qualified and experienced staff in sufficient numbers are pre-requisites for an AIS organisation to provide safe and timely aeronautical information.

The most obvious users of aeronautical information are pilots. Other users of the information represent those engaged in airline operational control and those involved in the provision of ATS. The AIS must be technically oriented in the nature of the services being provided. Given the relevance of aeronautical information to global air traffic, it is important to promote the correct level of technical proficiency within the AIS and that the AIS has an appropriate status in the parent civil or military organisation.

This part of the Quality System requires AIS to have procedures in place for assessing the competence of personnel required by the organisation to check, edit and publish aeronautical information. These procedures should include the levels of training, qualification and experience necessary to achieve expeditious publication of information.

Equally, staff responsible for the collection, collation, checking, coordination and edition information published in the Integrated AIP Package must have a thorough understanding of the content, standards, format and other user requirements related to the material being published.

Ideally, staff responsible for checking, coordinating and editing aeronautical information should have an extensive background as a pilot or within air traffic services, or have received specialist training in AIS.

For example, staff responsible for the operation of the NOTAM office would be:

    a)   conversant with the standard format, codes and abbreviations for NOTAM;

b)   conversant with the operational requirement for air traffic services, flight operations personnel, flight crews and the services responsible for pre-flight information to be kept informed of operationally significant information that may affect the safety of air navigation; and

c)   competent in the operation of the AFTN.

Training, Awareness and Competency

This part of the standard requires an organisation to:

a)   determine competency needs for personnel performing activities affecting quality;

b)   provide training to satisfy those needs;

c)   evaluate the effectiveness of the training provided;

d)   ensure that its employees are aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives; and

e)   maintain appropriate records of education, experience, training and qualifications.

Checking Competence and Training

AIS needs to regularly review the competence, experience, qualifications, capabilities and abilities of its staff to ensure that any skills and qualifications needed by the AIS are available for the tasks to be completed.

Training is required when deficiencies are noted, or when new employees start work. Any training that is required may be carried out in stages, and may be in the workplace, in-house or at an external location.

The scope of the training and checking is largely a matter for the organisation to determine, but generally, training for AIS would include the following topics:

a)   Principles of the Aeronautical Information Service;

b)   Organisation of AIS;

c)   Responsibilities and Functions of AIS;

> ➢   ICAO Documents
> ➢   AIS Products
> ➢   Responsibilities and Limitations

d)   The Integrated AIP Package;

e)   Relationships with External Agencies;

f)   Change Management;

➢   Applicable Policies and Procedures
➢   Standard Operating Procedures
➢   Quality Processes
➢   Coordination Requirements
➢   Collation and Processing
➢   Data Entry and Verification
➢   Data Structures
➢   Formats to be used
➢   Checking Procedures and Processes
➢   File Management
➢   Record Keeping
➢   Publication and Production
➢   Distribution

g)   AIS Automation.

Records should be maintained to show what competences staff possess, and to show what training has been carried out, and the results of that training. Records that demonstrate successful completion, *i.e.* effectiveness, of a training program and the competence of staff can and should be kept simple.

At their simplest, records may consist of a "sign-off" to confirm that staff can carry out specific processes or follow certain procedures. These records should include a clear statement when a person is deemed to be competent to do the task for which they have been trained.

Facilities and the Work Environment

In addition to adequate numbers of suitably experienced and competent personnel, AIS also requires appropriate accommodation and adequate facilities to get the work done and so provide quality services.

This part of the ISO Standards call for AIS to determine, provide and maintain the facilities it needs to achieve product conformity, including:

a)   Workspace;

b)   Equipment, hardware and software; and

c)   Supporting services

In simple terms, this means that AIS needs to identify, provide and maintain adequate space, suitable equipment, tools and systems to enable staff to do their job.

ICAO *Aeronautical Information Services Manual* (Doc 8126) provides guidance on facilities and equipment for aeronautical information services.

At the most basic level, facilities for AIS should include:

a)   Suitable furniture for staff to work comfortably, efficiently and ergonomically;

b)   Sufficient space between work-stations to avoid disruption to other staff;

c)   Noisy equipment isolated away from staff or sound-proofed;

d)   Adequate overhead or specialist lighting to be able to easily read source document;

e)   A quiet area for proof-reading; and

f)   Suitable computing equipment for word-processing and data capture.

AIS organisations are moving more and more towards automated systems to improve the efficiency, accuracy and cost effectiveness of their businesses. AIS' need to ensure that any systems automation and services are designed with the intent of avoiding incompatibilities, divergences and unnecessary duplication of effort and importantly that there is an overall systems integration management plan in place.   Standardisation of procedures, products and services is essential for the successful automation of aeronautical information services.

9.   Product Development and Realisation

Product Realisation

Product realisation is the sequence of processes and sub-processes required achieving the delivery of a product.   Planning of the realisation processes must be consistent with the other requirements of the organisation's Quality Management System and documented in a form suitable for the organisation's method of operation.

During the planning of the processes to bring a product to fruition, AIS would consider the following matters:

a)   objectives for the product, project or contract;

b)   the need to establish processes and documentation, and provide resources and facilities specific to the product;

c)   verification and validation activities, and the criteria for acceptability; and

d)   the records that are necessary to provide confidence of conformity of the processes and resulting product.

All this planning information should be documented. For regular product and/or service, this planning activity only needs to be carried out at the initial stage and revised when there is a change in process or resources that will affect the delivery of the service or manufacture of the product.

For project work and "one-off items", you may have to carry out the planning process for each project and item.

Note: Documentation that describes how the processes of the Quality Management System are applied for a specific product, project or contract may be referred to as a quality plan.

Identification of Customer Requirements

As with any business, AIS needs to determine its customer requirements. These requirements include:

a)   product requirements specified by the customer, including the requirements for availability, delivery and support;

b)   product requirements not specified by the customer but necessary for intended or specified use; and

c)   obligations related to product, including regulatory and legal requirements.

The following definitions are used in the Section:

Customer	The eventual (individual) user of the AIS products or services
Author Area	An identifiable group or organisation that has ownership of the information provided by AIS.

Note:	For the purposes of these Guidelines and the ISO requirements, the Author Areas can be considered to be a special type of customer since they have a vital role in determining if the information provided to and by AIS is correct and appropriate.

Who are the Customers?

AIS provides a range of aeronautical information and data for pilots, aircraft operators, ATS personnel, flight planning companies and data vendors. Each of these can be considered to be customers of AIS.

Review of Product Requirements

AIS with an established Quality System, or in the process of establishing such a system would review the identified customer's requirements, together with any additional requirements that might be necessary.

This review must be conducted prior to the commitment to supply a product to the customer, *e.g.* submission of a tender, acceptance of a contract or order, and to ensure that:

a)   product requirements are defined;

b)   where the customer provides no documented statement of requirement, the customer requirements are confirmed before acceptance;

c)   contract or order requirements differing from those previously expressed (e.g. in a tender or quotation) are resolved; and

d)   the organisation has the ability to meet defined requirements.

The results of the review and subsequent follow up actions must be recorded and form part of the quality records.

When product requirements are changed, the AIS must ensure that any associated documentation; procedures, processes etc are also amended to reflect the changes, and that the staff are kept aware of the changed requirements.

An example of a customer requirement might relate to the supply of aeronautical data or information in a specific electronic format to meet customer needs and specifications.

Customer Communication

Effective communications with our customers are an important part of the work of AIS. This part of the standard requires the organisation to identify and put arrangements into place for this communication to take place.   The communications plan must include information about:

a)   product information;

      b)   enquiries, contracts or order handling, including amendments; and

      c)   customer feedback, including customer complaints.

Understanding and Meeting Your Customer's Requirements

All parts of the customer's order or contract need to be reviewed to ensure that you can meet your commitments.

The manner in which the customer provides the order may vary in form and may be a:

      a)   written order;

      b)   verbal agreement; or

      c)   telephone order.

Often problems can arise because of a misunderstanding about what was ordered. This makes good communications with your customer an essential part of good business and is essential to resolve any misunderstandings. This might mean that AIS will make someone specifically responsible for communications with your customers.

Written orders, such as those received by mail or facsimile, provide a permanent record of the order details.

When telephone and direct computer link orders are received, special provisions need to be made to record and confirm the order. Methods of handling these could be as follows:

One approach to telephone orders is to provide a pad (these could even be pre-printed forms) for the order receiver to record the details of the order and read it back to the, customer, asking for confirmation. Alternatively, the details may be faxed or mailed back to the customer.

Where electronic media are involved, two options exist: either save permanently on disk or print out the details.

At the time the order is received you need to determine if there are any design requirements in the order and to see if the commitment to the customer can be met.

The record of the review can be as simple as a notation on the order that it can be fulfilled with the signature of the reviewer and the date. Where a more complex review is called for, how the review is recorded is at your discretion.

10. Design and/or Development Planning

Many AIS' provide a Procedures Design function. This means that the AIS is required to plan and control design and/or development of the instrument procedures.

Design and/or development planning is required under this part of the Standard to determine:

 a) stages of design and/or development processes;

 b) review, verification and validation activities appropriate to each design and/or development stage; and

 c) responsibilities and authorities for design and/or development activities.

Interfaces and internal communications between different groups involved in design and/or development must be managed to ensure effective communication and clarity of responsibilities.

A Disciplined Approach to Design and/or Development

It is important to understand that this part of the ISO Standard is intended to provide controls for the design and/or development process and in no way attempts to restrict the creativity of the designer.

The design controls should generally cover the following to establish:

 a) the design aims, planning how the design is to proceed, and who is to carry out the design;

 b) what is needed to be known for the design to proceed;

 c) the form of the output from the design;

 and to:

 d) review, on completion of the design, whether it has achieved what was wanted (flight validation);

 e) modify the design to include changes, which may occur at any stage of the process and for any reason.

Who is Going to Do What?

You need to plan what is to be done and who is going to do it in relation to the design. Responsibilities for design should be clearly assigned and the methods for the development and updating of the design plans should be established.

Design plans do not have to be complex. They can be as simple as a flowchart, showing the steps to be taken and who is to do them.

As part of the requirements, the AIS should also plan how the design review, verification and validation activities are to be carried out.

Design and/or Development Inputs

Inputs relating to product requirements must be defined and documented, and include:

a)   functional and performance requirements;

b)   applicable regulatory and legal requirements;

c)   applicable information derived from previous similar designs, and

d)   any other requirements essential for design and/or development.

These inputs must be reviewed for adequacy and any incomplete, ambiguous or conflicting requirements resolved.

Have We Got it Right?

Verification is checking that the results at the end of the design process meet the requirements identified as necessary at the beginning of the design process. For larger projects, the design process is often broken into stages and design verification may be carried out on a stage-by-stage basis.

The design plan should identify the verification method to be used, including who is to carry it out, how it is to be performed and what records are to be kept. There are many ways to verify the design, such as:

a)   performing alternative calculations;

b)   comparing the new design with a similar proven design (if available);

c)   undertaking tests and demonstrations e.g. flight validations; and

    d)   reviewing the design stage documents before release.

You should determine which are appropriate and effective. Sometimes, regulatory agencies will describe the means required to verify the design.

Customers may need to be involved in the verification process.

Does it Work?

Validation is the process of checking that the final product and/or service will be capable of meeting or does meet the customer's needs in use.

This may include marketing trials or operational testing. It is the final stage in the design process and is an important opportunity to prevent serious financial loss by failure to supply acceptable product and/or service. The results of the verification and validation processes can be fed back into each stage of the design process, leading to modifications and improvements or even the next design revision or product and/or service generation.

For many products and/or services, validation is a relatively simple process. An example could be a new design of a visual chart, which could be validated by testing of the prototype, followed by test marketing.

For other types of product and/or service, the validation of the total performance range cannot be achieved until the actual conditions occur.

It is also acceptable for the customer to perform the validation and to provide feedback of the results to the designer. Many software projects are validated in this way.

Control of Design and/or Development Changes

Design and/or development changes must be identified, documented and controlled. This includes evaluation of the effect of the changes on constituent parts and delivered products. The changes shall be verified and validated, as appropriate, and approved before implementation.

The results of the review of changes and subsequent follow up actions must be documented.

Note: See ISO 10007 for guidance.

Controlling Changes

For AIS, change is a way of life. Changes occurring due to the customer, market, design review, verification or validation activities must be recorded, reviewed and approved. The extent to which the design needs to be to be modified as a result of the changes needs to be considered.

The Quality Management System has formal requirements for document and change control that must be followed.

Design changes may also require you to reconsider reviewing with your customer what is actually required.

The design change control process may need to be no more complicated than the system described earlier to control other documents. In other situations, the controls may need to be more complex, *e.g.* those involved in software design, may have to be involved in configuration management. Further advice on this aspect is available in ISO 10007, *Quality Management – Guidelines for Configuration Management.*

Product Identification and Traceability

AIS must identify;

a) the product by suitable means throughout production and service operations when appropriate;

b) the status of the product with respect to measurement and monitoring requirements; and

c) record the unique identification of the product, when traceability is a requirement.

Examples of this might be the use of amendment numbering or specific page identification.

Keeping Track of What You're Doing

Identification is knowing what the product and/or service resulting from a particular process is, even an intermediate process. When you need to identify a product and/or service, the methods used and the records to be kept need to be defined. The recording of part numbers, job numbers, bar codes, the name of the person who carried out the service, colour codes or the revision status and version number of a software package being developed are just some examples of identification.

Traceability is knowing where the product and/or service came from, where it is now and in the case of services, what stage it is at. Most businesses, irrespective of size, will have a need in some stage of their operations to keep track of what goes where, what's been done and what still is to be completed. When traceability is a requirement, typical methods used include:

a) Job card entries;

b) Data checked and confirmed, data entry complete;

   c)   Service records, e.g. signing-off a particular work aspect;

   d)   Tagging;

   e)   Computer tracking.

| AIP changes from an author area | → | Data checks and entry | → | Data sign-off and page check | → | AIP Amendment No. 15 |
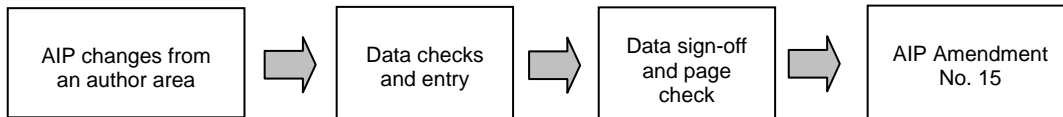
When servicing a car, the status of each operation on the service checklist is changed from "to be done" to "done" by ticking off each operation on completion.

In a phone answering service, the status of messages taken is initially 'message received'. On passing the message on to the client, the status changes to 'message delivered'. The phone answering service would have some suitable means of identifying the status.

Some of the above techniques may be also used for identification. You need to be aware that the requirements for traceability may result in additional paperwork and costs, so you have to be aware of the balance between really needing to know and superfluous information.

A example of a checklist.

Action		Status	
	Reg No.	Completed	Yet to be done
Change details registered	WP16/00	✓ (DS)	
Data checked and verified		✓ (DS)	
Data Entry		✓ (CS)	
Entered on Charts		✓ (CH)	
Airspace Handbook			X
AIP Book			X
Document checks complete			X
Chart checks complete			X
Publications to printer			X
Publications to dispatch			X

You need to establish what your internal requirements are and document them.

In AIS, identification and traceability are specified requirements. If the need for a product recall arises, an effective identification and traceability system

will make the task a lot easier. An effective identification and traceability system will make it much easier to replace the poor quality service and initiate steps to avoid recurrence such as retraining or a review of process operations.

Records that provide the traceability (including the change requirements) should be retained as part of the Quality Records.

The method(s) you adopt as being most suited to your business should be described, *e.g.* in your work instructions, so that everybody knows how it works.

Customer Property

AIS must exercise care with customer property while it is under the organisation's control or being used by the organization. The organization must identify, verify, protect and maintain customer property provided for use or incorporation into the product. Occurrence of any customer property that is lost, damaged or otherwise found to be unsuitable for use shall be recorded and reported to the customer.

Note: Customer property may include intellectual property.

Looking After What the Customer Gives You

Occasions may arise where the customer gives you material or equipment to be used in producing the items or delivering the service. Examples could include:

a)   instruments provided by the customer for measurement purposes;

b)   training room provided by the customer;

c)   special hardware of software; and

d)   special paper for specific products.

Whilst a documented procedures is not required for this aspect, the organisation is responsible for ensuring that the control of customer property is sufficiently documented to describe how it is identified and cared for. The document could simply reference in-house processes that are in use.

Looking After the Product and/or Service

AIS must preserve conformity of product with customer requirements during internal processing and final delivery to the intended destination. This includes identification, handling, packaging, storage and protection, and also applies to the constituent parts of a product.

This part of the Standard means that none of these activities are allowed to affect the quality of the product and/or service being provided. It is up to you to determine how you will ensure that this is the case.

Depending on the nature of your business, some or all of the requirements of this part of the Standard may apply. When they do apply the arrangements for handling, storage, packaging, preservation and delivery should be recorded in your process documentation.

There are a number of areas where handling, storage and preservation, packaging and delivery problems can affect the quality of the product and/or service. Some examples are found in the following areas:

Handling: This might be the use of computers and/or a filing system, job-cards, or work-packages to control work in progress.

Storage/Preservation: Use of computer systems to store work in progress, and off-site or other back-up arrangements.

Packaging/Delivery: Use of mailing tubes or electronic transfer of data to deliver charting products to a printer for reproduction.

You will need to examine your own procedures to determine the extent special handling procedures are needed and to document them.

Packaging should be appropriate for the materials. In many cases, little or no packaging will be required. Bulk materials, such as sand, coal, wheat etc are examples where packing consists simply of filling the carrying container. Even for such bulk transport, there needs to be a check that the container is suitable and does not contaminate the product. Large fabricated components may be simply loaded onto a truck and strapped down.

Packaging should be appropriate for the product, the intended transport and end use. You should make sure that where packaging and marking materials are used, that they are compatible with the products being packaged or marked. Marking materials can cause corrosion or otherwise damage products and should be selected with care.

Additionally, you should be aware if any regulations exist regarding packaging. These could require "use-by-dates", handling instructions or specific information regarding the contents to be displayed on the package.

Examples of this might be the packaging required for chart negatives to be dispatched to the printer. Packaging needs to be robust to ensure that the film is not damaged in transit, and may require some marking to ensure that the contents are not bent or folded.

Stock Control

Most businesses will probably already have a stock control system. During stocktaking it is usually possible to check the condition of products. You need to identify the storage requirements for your products and assign appropriate storage areas. Each product does not necessarily require a separate storage area.

A periodic check of the condition of the product in stock is necessary if it is likely to deteriorate or become contaminated. The frequency is dependent on the nature of the product, with robust types requiring a less frequent check than perishable or fragile products. There may be regulatory and legislative requirements or the preservation system may be specified in the customer's order.

The protection of the quality of the product after final inspection and test now extends to include delivery to destination. If this is to be subcontracted out then you will have to ensure that appropriate procedures or instructions are given in order that final delivery does not prevent or affect the product and/or service from meeting customer requirements. You may need to carry out a supplier evaluation.

This may involve you in taking responsibility for the transport. In such cases, you would need to be aware of any legislation or regulations that might apply.

Control of Measuring and Monitoring Devices

When necessary, AIS must identify the measurements to be made and the measuring and monitoring devices required to assure conformity of product to specified requirements.

This part of the standard is only applicable to those AIS' where measuring or testing equipment, including test software, is used to check that what you are providing meets your customer's requirements for example the supply of data electronically to a data vendor, for example the use of cyclic redundancy checks (CRC). If however, for example, your inspection method is visual inspection such as that use for some maps and charts, you may not need to have any measuring equipment or instruments and this part of the Standard does not apply.

Measuring and monitoring devices must be used and controlled to ensure that measurement capability is consistent with the measurement requirements.

When applicable, measuring and monitoring devices must:

> a)   be calibrated and adjusted periodically or prior to use, against devices traceable to international or national standards; where

no such standards exist, the basis used for calibration must be recorded;

b) be safeguarded from adjustments that would invalidate the calibration;

c) be protected from damage and deterioration during handling, maintenance and storage;

d) have the results of their calibration recorded; and

e) have the validity of previous results re-assessed if they are subsequently found to be out of calibration, and corrective action taken.

Note: See ISO 10012 for additional guidance

Software used for measuring and monitoring of specified requirements must be validated prior to use.

Having Confidence in the Equipment Used to Check Your Work

If use is made of measuring and testing equipment for checking compliance with your customer's requirements, you will need to consider how it is controlled, stored, used and its accuracy maintained at the level needed.

It should be emphasised that the requirement applies only to equipment that can affect quality. If you are using measuring and testing equipment for indication purposes only, it does not necessarily have to be calibrated. The key message here is do not automatically calibrate everything.

Calibration is the process of periodically comparing your equipment against a reference standard to determine how accurate it is and whether or not it is still capable of meeting the accuracy required for the measurements made with it.

"Periodically" can mean on a time basis (monthly, annually) or a usage basis (before each use or after a number of times used).

The reference standard may have been provided with the equipment. For example, a paint thickness meter is normally supplied with a set of thickness standards. In other instances, you may have to have access to a suitable reference standard by buying one or using a supplier.

For a reference standard to have validity, it needs to be traceable back to an appropriate recognised accurate source. This will normally be a national or international standard. There are cases where a national standard does not exist. In these cases, the sources or frame of reference needs to be described.

You also need to take into account just how accurate the measurements need to be. How accurate your equipment needs to be will depend upon how much tolerance is permissible in what you are measuring. A measuring device usually has to be capable of measuring to a much closer tolerance than the tolerance specified for the item being measured. However, there is no point in having measuring devices calibrated to unnecessarily high precision if you do not need that precision for your operations. Allied with these factors is how skilled the personnel need to be to use the equipment.

To make sure the measuring equipment operates effectively and gives reliable results, you need to:

a)   make sure it is looked after, regularly calibrated and adjusted as needed;

b)   describe how this will be done so that records are available which show calibration is traceable to national standards; and

c)   make sure it is possible to identify which equipment has been calibrated and that it is suitable for use, *e.g.* label the equipment.

If equipment is found to be faulty, you need to find out at what stage it went wrong. You need to decide whether you need to do anything about product you have passed using that equipment. The results of any review may indicate that no action is required or that a product recall is required.

Test software needs to be subject to some form of validation to make sure that it can perform the required measurements. One way is to ensure that this software can accurately and reliably identify product with a known set of faults and deficiencies. The details of how the test software is validated should be documented.

Unlike hardware test equipment, test software does not experience 'drift' or ageing, so periodic revalidation may not appear to be necessary. However, software can be subject to unintended errors. Therefore the purpose of revalidating test software is to ensure its continuing ability to perform the required measurements.

Some type of secure write protection should be used, in the same manner as seals are used on hardware calibration adjustments, to minimise inadvertent adjustments.

If you decide to carry out your own calibrations, you will need to have procedures for calibrating each type of equipment you use.

If you decide to use a supplier, some additional points you will need to consider are:

a)   ideally, the organisation should be endorsed as a calibrating service by a suitable certifying body;

b)   the organisation should issue a certificate of calibration, which states the uncertainty of measurement. (This is another way of stating how accurately the instrument can measure);

c)   the certificate should indicate that the organisation can trace your calibration back to a national or international standard.

You are free to use an organisation that has not been endorsed as described above to carry out your own calibration if this is practical, *e.g.* original equipment manufacturer or neighbouring company. However, the resulting records must confirm that the reference standards used for calibration are of known accuracy, normally traceable to a national or international standard.

It may be possible, if you have several measuring instruments of a similar type, for the most accurate of these to be calibrated by a supplier then used as the basis for calibration of the others. For example, an accurately calibrated digital thermometer may be suitable as a reference standard for other less accurate temperature measuring equipment.

Calibration is an expensive operation. For AIS, the costs of calibration can be considerable. You should ensure, therefore, that you know the difference between checking that process control equipment is fit for purpose and calibrating equipment that is required to give confidence in your inspection and test measurements.

You need to make sure that the calibration frequency, and standards of accuracy specified are appropriate to the actual equipment usage and not excessive. Once having determined the initial calibration procedure it does not have to remain fixed forever; it can be adjusted in light of experience.

In addition to calibrating equipment, records need to be kept to show:

a)   when the equipment was last calibrated, who did it, the calibration procedure, the acceptance criteria, what the result was, its acceptability and how this affects the equipment suitability (calibration status); and

b)   when the next calibration is due-the period is dependent on the type of equipment, its usage and how critical the measurements are to the process.

c)   measuring equipment needs to be suitably stored when not in use, to protect it from damage or deterioration. It should also be suitable for use in the proposed operating environment. These

precautions apply even more so to any 'master' measuring equipment or reference standards used for calibration purposes.

Measurement and Monitoring of Products

AIS must measure and monitor the characteristics of the product to verify that requirements for the product are met, and must be carried out at appropriate stages of the product realisation process.

Evidence of conformity with the acceptance criteria must be documented, and records must indicate the authority responsible for release of product.

Product release and service delivery must not proceed until all the specified activities have been satisfactorily completed, unless otherwise approved by the customer.

Checking Things are Right

This part of the Standards requires that you establish how you intend to check and monitor both your processes and your product and/or service. Frequently there will be considerable overlap between the two and in many cases the same monitoring processes will be adequate for both purposes.

Some examples of measurement and monitoring include:

a)   measuring dimensions;

b)   proof-reading publications;

c)   matching colours; and

d)   looking at things and deciding if they are what were asked for.

You need to decide what your measurement and monitoring requirements are and how they are to be carried out. People who carry out measurement and monitoring may need to be trained for what they are doing.

You also need to decide and record who has the authority to say a job is finished and the product and/or service can be delivered.

Individuals may check their own work, without secondary checking by another person. Such flexibility is sometimes necessary in AIS where excessive duplication of effort should be avoided.

Verification, *i.e.* examining something to see if it meets requirements, is also a measurement and monitoring operation. In some industries, such as publishing industry, visual verification may be the main form of measurement and monitoring carried out.

Somebody has to be responsible for the actual measurement and monitoring. The person does not have to have a staff or managerial status. For example, in a small AIS with only a few employees, it may be necessary for cartographers to inspect their own work before passing it on to the printing and dispatch area. A job card may follow the work, and the operator signs off the work performed on the job card. This works well because the work of the next operator down the line is affected if the incoming work is not correct.

The final approval phase includes not only checking the finished product and/or service, but that all the inspections and tests that ought to have been done, have in fact been done and that if any paperwork is to go with the product and/or service, that it has been prepared and is satisfactory. In other words, if you were the customer, these are all the things you would want to know have happened before you took delivery of the product and/or service.

The measurement and monitoring to be carried out may be listed in a number of ways, such as:

   a)   a quality plan;

   b)   a sampling plan;

   c)   an inspection and test plan;

   d)   a procedure;

   e)   an instruction; and

   f)   the customer's order.

There needs to be a consistent method of recording that the measurement and monitoring has been carried out. In AIS, the supervisor could sign off a checklist to show all the inspections have taken place.

Your Quality Management System should be capable of identifying the job and include a procedure to recall the job if the item subsequently proves defective.

You need to have a system for keeping the necessary testing and inspection records or have other means of showing that the inspections have taken place.

Your records should indicate whether any failures occurred and the proposed action.

Inspection and test failures are handled by the activities described for non-conforming products.

Inspection and test failures should not be confused with normal processing activities to bring the product and/or service within specification before it is released to the next stage of operations.

A typical example might be a publishing company that measures, adjusts and readjusts colour densities on a chart until the required levels are achieved. Such an iterative approach does not constitute an inspection failure.

However, if the printer signs the system off as meeting specification, and it is subsequently found to be outside specification, this is a non-conformance.

Control of Non-conformity

AIS must ensure that products that do not conform to requirements are identified and controlled to prevent unintended use or delivery. These activities shall be defined in a documented procedure.

Non-conforming products must be corrected and subject to re-verification after correction to demonstrate conformity.

When non-conforming products are detected after delivery or use has started, the organisation shall take appropriate action regarding the consequences of the non-conformity.

Some customers may require notification of any non-conforming product and/or service and approve what steps should be taken. If this is the case, it will be necessary to notify the customer following detection of the non-conforming product and/or service. You may wish to include the steps you propose taking along with the notification.

Records will need to be kept of any decision made, approval given by the customer, any rework or repair procedure, and the results on the inspection and testing on any rework or repair.

If, for example, a publishing company discovers that it has inadvertently used inks that are beyond their "use by-date" (or shelf life) in the printing of maps and charts. A number of actions might be required to fix the problem:

      a)   investigation to find out the extent of the problem;

      b)   segregation and quarantine of the remaining ink supply from that consignment;

      c)   segregation and quarantine of affected maps and charts awaiting delivery; and

d)   recall of those maps and charts likely to be similarly affected, and that could affect safety.

Depending on the potential risks, there may be a need to involve the applicable regulatory authorities and to make the public aware of the problem.

Analysis of Data

This part of the Standard requires AIS to collect and analyse appropriate data to determine the suitability and effectiveness of the Quality Management System and to identify improvements that can be made. This includes data generated by measuring and monitoring activities and other relevant sources.

In this regard, the AIS must analyse data to provide information on:

a)   customer satisfaction and/or dissatisfaction;

b)   conformance to customer requirements;

c)   characteristics of processes, product and their trends; and

d)   suppliers.

Do the Measurements Reveal Any Trends?

As a result of your measuring and monitoring activities, you probably will have collected significant amounts of data, which can be analysed to indicate any trends. Any trends that you may find could suggest where there are problems in your quality management system, which indicates areas where improvement is needed.

You may also find activities that, although effective as they are now performed, could be improved further.

You may find that statistical techniques are useful tools for the analysis process.

The Standard identifies four areas where analysis is to be applied but you can extend data analysis to whatever areas provide you with useful information.

Planning For Continual Improvement

Understandably, AIS must plan and manage the processes necessary for the continual improvement of the Quality Management System to facilitate the continual improvement of the Quality Management System through the use of the quality policy, objectives, audit results, analysis of data, corrective and preventive action and management review.

What Improvements Do You Plan to Make?

Continual improvement of the Quality Management System is now a mandatory requirement. It is important to understand that continual improvement doesn't mean that it occurs without a break or without ceasing. Instead, improvement should be interpreted as a repeated activity to be implemented as each opportunity is identified and there is justification for proceeding.

The standard lists a number of tools and inputs that you can use to both plan and actually implement improvement.

Corrective Action

AIS must take corrective action to eliminate the cause of non-conformities in order to prevent recurrence. Corrective action must be appropriate to the impact of the problems encountered.

The documented procedure for corrective action must define requirements for:

a)   identifying non-conformities (including customer complaints);

b)   determining the causes of nonconformity;

c)   evaluating the need for actions to ensure that non-conformities do not recur;

d)   determining and implementing the corrective action needed; and

e)   recording results of action taken reviewing of corrective action taken.

Preventive Action

AIS must identify preventive action to eliminate the causes of potential non-conformities to prevent occurrence. Preventive actions taken shall be appropriate to the impact of the potential problems.

The documented procedure for preventive action must define requirements for

a)   identifying potential non-conformities and their causes;

b)   determining and ensuring the implementation of preventive action needed;

c)   recording results of action taken; and

d)   reviewing of preventive action taken.

Fixing the Causes of Problems

Both corrective and preventive action can be seen as steps in a quality improvement cycle. The need for corrective action can arise when an internal nonconformity (product and/or service or quality management system) occurs, or from external sources such as a customer complaint or warranty claim, or problems encountered with a supplier.

Corrective action involves finding the cause of the particular problem and then putting in place the necessary actions to prevent the problem recurring.

Preventive action starts with considering and analysing the data from all the incidences of non-conformities, all the customer complaints, all the warranty claims, all the problems with suppliers as well as any other sources of problems to find out if any trend is occurring.

Where this analysis shows that the potential for problems exists, preventive action then involves putting in place the necessary steps to eliminate these potential causes.

The documented procedures for both corrective and preventive actions should define the responsibilities and authorities for these activities.

Fixing the Cause of Known Problems

There is a difference between carrying out corrective action and fixing a non-conformity. Fixing a non-conformity is about making good the problem either by reworking, replacing or any of the other activities described in the guidance material. A corrective action is concerned with finding out why the nonconformity occurred and making sure that the problem does not occur again.

The need for corrective action could be indicated by a number of factors, some of which could be:

a)   customer complaints;

b)   non-conformances;

c)   rework or repairs; and

d)   audit reports.

Analysis of the causes may suggest some solutions such as retraining employees or amending a process control practice.

The size of the problem and the associated risks to your business will determine the actions that you need to take.

When corrective action is taken, it should be recorded and followed up within a reasonable period to find out whether it has worked. It may be necessary to change the quality manual, documented procedures, instructions and any other relevant documentation. Changes should be made in accordance with the provisions shown for the Control of documents.

Fixing the Cause of Potential Problems

You should use your records to see if any trends exist which show a potential problem could arise. Typical examples of where information might be found and used for such analysis are from such sources as:

    a)   difficulties with suppliers;

    b)   in-process problems, rework rates, wastage levels;

    c)   final inspection failures; and

    d)   customer complaints and customer surveys.

Other sources might include market surveys, audit reports and quality records. Where a potential problem is identified, a course of action may need to be developed and put in place to reduce or eliminate the risk of the problem.

If preventive action is found to be necessary, it should be recorded and followed up within a reasonable period to find out whether it has worked. As a result of preventive action, the quality manual, documented procedures, instructions and any other relevant documentation may need to be changed.

Examples of where preventive action may be applied include:

    a)   identifying possible situations where product damage may occur and implementing practices to prevent it from happening;

    b)   feedback from personnel may indicate a more efficient process; and

    c)   re-assessment of suppliers to overcome potential supply problems.

In AIS, there is little justification in separating management review arrangements from long-term corrective and preventive action. Where there are few personnel and the same people are involved in both activities, an artificial separation may result in duplication of effort. If this approach is taken, it should be included in the quality manual.

11.   Purchasing

Purchasing Control

Controlling provision/production is of little consequence if the raw materials brought into AIS are unsatisfactory. Complying with the part of the Standard therefore requires:

a)   Documented procedures for ensuring purchased products meet requirements;

b)   The evaluation, selection and reviewing of contractors;

c)   Clear definitions of requirements of contractors; and

d)   Procedures for verifying and allowing customer verification of contractor operation at the contractor's premises.

As with any other business, AIS needs to, and the ISO Standards require that its purchasing processes are controlled to ensure that the purchased product conforms to requirements. The type and extent of control shall be dependent upon the effect on subsequent realisation processes and their output.

Examples of products or services that AIS might purchase are:

a)   Hardware;

b)   Software;

c)   Aeronautical data;

d)   Cartographic services.

The organisation must evaluate and select suppliers based on their ability to supply products in accordance with AIS' requirements. Criteria for selection and periodic evaluation need to be defined and recorded.

Stating Purchasing Requirements

Who do we get it from?

You will need to identify those materials and services that you buy which can affect the quality of your product and/or service. You will then need to select from suppliers who can supply these materials and services, those you intend to use. Remember that sub-contracted services such as design, transport and delivery, calibration services etc. may affect quality and may need to be considered.

Most AIS' usually have a number of reasons why they deal with a particular supplier. You can continue to use existing suppliers when developing your quality management system. The standard simply requires that selection be carried out in a controlled manner.

When you decide why a particular supplier is to be used, you should write down the criteria and basis for the selection. Questions you may wish to ask in selecting suppliers may include one or more of the following:

      a)   how reliable are they?

      b)   can they supply what you want?

      c)   do they have the necessary resources, *e.g.* equipment and personnel?

      d)   is the quoted delivery time and price acceptable?

      e)   do they have a quality management system?

      f)   have you used them before successfully?

      g)   have they a good business reputation?

Where a proprietary or brand name product is to be purchased, an obvious source may be a wholesale or retail outlet offering an off-the-shelf or self-selection service. A wide range of products are available from such sources, such as cartographic and stationery resources, hardware and some software supplies.

In these circumstances, the criteria for supplier selection and the associated records may be minimal.

You may wish to consider buying for a trial period, with a review at the end of the period to establish the acceptability of the supplied product and/or service or the supplier.

As well as maintaining records of approved suppliers and basis of approval, you should also regularly monitor the performance of those suppliers to ensure that they still meet the selection criteria. However, as a somewhat small business, you need to be aware that your purchasing power is limited, and threats to remove suppliers from your supplier approval system may be ineffectual. This is particularly true where you are obtaining product and/or service from very large national or international organisations. Your quality manual needs to reflect the real life situation.

The extent to which you monitor supplier's performance depends on how critical the product and/or service being supplied is to the quality of your product and/or service.

For example, the paper quality could be critical in an external business that provides printing services to AIS.   Other businesses might use normal, commercial stationery, which would not need any quality related purchasing controls, but in the case of some AIS products, paper thickness and longevity, colour matching or ink bleeding through can create a number of problems for the delivery of quality products.

The printing business may monitor the performance of its paper suppliers very closely to ensure the quality of its printed product and/or service remains at the expected level.

Purchasing Documentation

Purchasing documents must contain information describing the product to be purchased, including where appropriate:

 a) Requirements for approval or qualification of

- Product;

- Procedures;

- Processes;

- Equipment; and

- personnel.

 b) Quality Management System requirements.

When making a purchase, AIS must ensure the adequacy of specified requirements contained in the purchasing documents prior to their release.

Stating Purchasing Requirements

What do we need?

In order to get what you need, the purchase instructions should leave no doubt of what it is you want.   Instructions are preferably given as a written order.   As discussed before, remember that phone instructions are open to misunderstanding by your supplier and you may need to take additional precautions to ensure that your instructions are understood.   Irrespective of whether the order is written or verbal, you will need to keep a record of what was ordered so you can confirm you got what you asked for.

This part of the purchasing requirement deals with the details that you should include, as appropriate, in advising your purchase requirements. The extent to which the details listed in Items (a) and (b) apply depends on the extent that the goods and services being ordered affect the main business and the quality of your product and/or service.

It is essential that all relevant details of the items or services wanted are clearly stated at the time of ordering. These may include drawing, catalogue or model numbers and required delivery date and place. In some cases, a catalogue number, or a part number may cover the complete description. While it is essential to fully describe what you want, unnecessary detail can lead to misunderstanding and incorrect delivery.

Verification of Purchased Products

The organisation must identify and implement the activities necessary for verification of purchased product.

Where the organisation or its customer proposes to perform verification activities at the supplier's premises, for example factory acceptance testing of hardware of software on a Test and Evaluation Platform before introduction onto an operational platform, the organisation must specify the intended verification arrangements, *e.g.* a test plan and method of product release in the purchasing information.

Did You Get What You Ordered?

Most businesses have some form of incoming measurement and monitoring, even if it is simply an employee checking the delivery docket and signing it to confirm that goods were delivered. A further check is that goods are what was ordered and have been received in good order. However, you need to decide whether the goods and services you receive should be inspected, by whom and how.

When a supplier has a Quality Management System in place, it may be possible to reduce the extent of measurement and monitoring.

The extent of measurement and monitoring also depends on the nature of the goods being received; *e.g.* the inspection of office supplies may be simply a verification that the quantity ordered was delivered. The delivery docket, signed by the employee, may be all the documentation required.

If you order goods or services, or both, from a supplier, and wish to inspect the goods or services, or both, at the supplier's premises, the arrangements for such an inspection need to be agreed and included in your order. Some examples of this requirement are:

a)   factory acceptance testing of software of hardware before taking delivery;

b)   monitoring employees being trained at a training organisation.

If your customer wants to visit your supplier's premises to check the product and/or service, this needs to be stated in both the customer's order to you and in your order to the supplier.

Whether or not the customer actually does this, you are still responsible for ensuring that all the products and/or services obtained from suppliers meet the requirement of the customer's order.

Production and Service Operations

Operations Control

The organisation must control production and service operations through the:

a)   availability of information that specifies the characteristics of the products;

b)   availability of work instructions when necessary;

c)   use and maintenance of suitable equipment for production and service operations.

d)   availability and use of measuring and monitoring devices;

e)   implementation of monitoring activities;

f)   implementation of defined processes for release, delivery and applicable post-delivery activities.

Controlling What You Do

Perhaps a more easily understood title for this part of the standard might be Process Management. Remember that this applies equally to services as well as "hardware" type products.

How your processes, which are necessary to produce the required product and/or service, interact with each other and the order in which they occur has to planned and then put into practice.

Note that a documented procedure is not required, but may prove beneficial to AIS for staff to understand all of the processes and relationships.

You need to understand how each of these processes impacts on the final product and/or service and to ensure that appropriate controls are in place to

be able to meet whatever customer requirements have been specified. In many companies, the control is exercised through internal orders, drawings, production schedules, service specifications, operator instructions, etc.

You need clearly understandable work specifications or work instructions when they are necessary to ensure the product and/or service conforms to the specified or customer requirements. One of the key issues here is that it is not necessary to write a document with all the details that a competent operator would be expected to know.

For example, there should be no need to describe to a trained cartographer how to operate CAD equipment. If the cartographer cannot operate the equipment, the answer is not written instructions but training. However, the procedure might refer to ICAO SARPS and procedures for depictions or routine file maintenance and record keeping.

When product quality is dependent on avoiding any deterioration of the condition of process equipment, you need to establish arrangements for maintenance of that equipment, *e.g.* plotters or printers may only continue to produce quality output if there is periodic maintenance of ink cartridges or toner.

Control of operations will require you to ensure your equipment is fit for purpose and that there are no problems due to the work area.

Many of the requirements for equipment control and working environment may be specified by your customer or by regulation such as Occupational Health and Safety and will need to be reflected in your own process controls.

Process controls should also include how the process condition or the product itself is to be monitored, *e.g.* the printer may monitor the colour values of the charts or the operation of the printing equipment. To assist there may be proof charts or photographs available to indicate the required colours for the charting output and the folding required. Another example might be the use of data integrity checks to ensure that the output is that required.

Many goods and services are sold with a commitment to provide post delivery maintenance and support, *e.g.* hardware and software as part of the overall contract. Remember that commitments made as part of a warranty also form part of the contract and this part is relevant.

In dealing with post delivery activities, your process will need to address the following aspects:

      a)   general provisions of a servicing programme;

      b)   planning the servicing activities;

c)   personnel needed and any training requirements;

d)   spare parts management;

e)   preparation of servicing instructions; and

f)   records of servicing activities.

When providing servicing, it is important to remember that any product and/or service non-conformances should be fed into the corrective action system so that the reason for the failure can be identified. Remember, if warranty repairs were required, the product did not perform as intended and this is a form of non-conformance.

As always, records that show what you did to measure how your process was under control should be kept.

Contract Review

All agreements with the customer base must first be defined as requirements and then controlled to ensure that:

a)   all requirements are adequately defined;

b)   any differences between the end product and the requirements are resolved; and

c)   the terms of the agreement can be met.

To ensure this occurs, the following steps are necessary:

a)   a documented procedure for reviewing and approving agreements;

b)   a documented process for managing changes to agreements; and

c)   the keeping of records of the agreements and their review and/or approval.

12.   Customer Satisfaction

The Standards require AIS to monitor information on customer satisfaction and/or dissatisfaction as one of the measurements of the performance of the quality management system. The methodologies for obtaining and using this information must be determined.

How Satisfied are Your Customers?

This is an important new aspect to the 2000 version of ISO 9001. You are required to monitor your performance as a supplier to your customers. More specifically, you are required to monitor information on satisfaction or dissatisfaction. To do this you will need to find out how satisfied your customers are.

More Than One Type of Customer

Firstly it is important to remember that you may have more than one type of customer. For example, if you are a map or chart manufacturer, you may sell to wholesalers who then sell to retailers who then sell to the general public. In this case you have three types of customer and they all have different requirements. You may be satisfying one group and upsetting another. For your product and/or service to sell successfully you will need to satisfy them all.

Satisfaction and Dissatisfaction

Another important point is to understand that satisfaction is not the opposite of dissatisfaction. Your customers are entitled to be satisfied and may take good quality of products and/or services for granted. On the other hand, if they are dissatisfied, they may react quite badly or strongly. So satisfaction may produce a neutral response whereas dissatisfaction may produce a strong negative response. There is a third possibility, which is a strong *positive* response. This is sometimes referred to as 'delight', something beyond the normal level of satisfaction.

Monitoring Satisfaction

There are many ways of finding out what your customers think of you. Amongst the most widely used are:

a)   telephone calls made periodically or after delivery of product and/or service;

b)   questionnaires and surveys;

c)   using a market research company; and

d)   focus groups.

All of these have merits and disadvantages. For a small AIS organization, it recommended that you start with simple methods such as calling your customers. You may gain a useful insight by calling someone who is senior to the one that you normally deal with. Such a person is likely to know how you perform and is likely to tell you, good or bad.

Surveys and questionnaires are being extensively used. For example, how many do you receive in a year? You may get some good ideas from the ones sent to you. You can give your customers the option of giving their name or staying anonymous. You may get more negative responses from anonymous people, because some people do not like being the bearer of bad news. If they can hide their identity, they may tell you something they would not otherwise do. Remember criticism is vital information, which will help grow your business.

Questionnaires and surveys have their disadvantages because they are time consuming. If you use a questionnaire, keep it simple. Choose your questions very carefully. Ensure that they are clear. Why not test it out on a trusted friend before you send it out?

If you really want to know what your customers think, it is probably best left to the professional market research companies. Their independence enables them to gather an objective perspective of you performance and your customers' satisfaction.

Customer focus groups are a powerful tool for finding out the reasons behind the measure of satisfaction. A group of customers is brought together in a small meeting where they discuss the merits of your product and/or service. This needs facilitation, which is best left to a professional.

Satisfaction As a Measure of Your System Performance

The new version of the Standard makes it clear, that you are to use customer satisfaction as a measure of the performance of your Quality Management System.

At its simplest, this could be the percentage of dissatisfied, satisfied and delighted customers. In reality, it tends to be more complicated than that.

One customer may be both satisfied and dissatisfied. He or she may be satisfied with the product and/or service but dissatisfied with your delivery performance, for example. Therefore, you need to think it through and come up with a practical measure. Perhaps you could ask your customers to rate your performance on a scale from 1 to 10. Alternatively, perhaps it would be worthwhile measuring several aspects of your business, for example, appearance, delivery performance, packaging, functionality, and value for money.

Civil Aviation Authorities (CAAs) must conduct periodic internal audits to determine whether the quality management system:

      a)   conforms to the requirements of the International Standard; and

b)   has been effectively implemented and maintained.

CAAs must plan the audit program taking into consideration the status and importance of the activities and areas to be audited as well as the results of previous audits.   The audit scope, frequency and methodologies must be defined.   Audits must be conducted by personnel other than those who performed the activity being audited.

A documented procedure must include the responsibilities and requirements for conducting audits, ensuring their independence, recording results and reporting to management.

AIS Management must take timely corrective action on deficiencies found during the audit.

Follow-up actions shall include the verification of implementation of corrective action and the reporting of verification results.

Note: See ISO 10011 for guidance.

Are You Doing What You Said You Would Do and Does It Work?

Audits are about getting information, in a planned way, from a variety of sources and comparing it all to confirm that things are being done properly. The steps of gathering this information should include:

a)   reading the documented procedures;

b)   reading relevant process control documents;

c)   observing processes being carried out;

d)   talking to the people carrying out the processes; and

e)   looking at the records.

All these need to tell the same story; i.e. that you are doing things right, the way you said you would.

For a well organized and run AIS, where familiarity with the day-to-day activities is the norm, a properly conducted audit can be beneficial.   You should use audits to stand back and look at your business objectively to confirm that the Quality Management Ssystem is helping you do what you want to do and what you need to do.

You need to find some form of evidence, documented or otherwise, which can confirm that the Quality Management System is performing in the way it was intended.   It is not sufficient to simply do an overview and conclude without

any proper basis or supporting evidence that the quality management system is operating satisfactorily. This requirement is reinforced to require you to develop some means for measuring how the Quality Management System is performing.

Seeking out areas for improvement is now particularly important as it is this information that is required to be added to the data to be analysed.

The information from internal audits should also be used as part of your management review. The better your audit, the more useful your management review will be.

When an internal quality audit shows up non-conformances and inconsistencies, you need to develop the necessary corrective actions and then put them in place.

These may be as simple as:

  a)   writing or revising a documented procedure or a process control document;

  b)   redesigning a form to incorporate more information; and

  c)   arranging for employee retraining.

Audits should be scheduled to cover all the quality-related activities you undertake and all the requirements of the standard. In deciding how to manage the audit schedule and how often any particular aspect should be audited, the following factors may be considered:

  a)   Are there any complex procedures or processes that would justify individual audits?

  b)   Are there any aspects or areas that have a history of problems?

  c)   Does your 'hands-on' approach indicate a need for less frequent audits?

A report or summary of each audit should be made out, listing the findings and what action if any is to be taken. The record need not necessarily be complex. For example, a simple entry in a daybook may be sufficient. If the previous audit recommended or required action to be taken, the current audit should check how effective the change was and this should be recorded.

There is a requirement in the Standards that "audits shall be conducted by personnel other than those who performed the activity being audited". For example, it is acceptable for the office personnel to audit the

production/service activities and vice-versa. This can provide benefits in developing an understanding of each other's problems.

In a small AIS where there may be only one or two people in the entire management structure, this requirement may not be achievable. It is suggested that in such cases, the manager, carrying out the duties of an auditor tries to step back from direct involvement in the business operations and be very objective about the audit.

Another approach would be to seek the cooperation of another work area and each provides the internal quality audit facility for the other. This may prove attractive if there are good relations between the two businesses.

Effective use of internal quality audits is an area that you may use to minimize the ongoing costs of certification/ registration. If the auditor from the certification/registration body can see that internal quality audits are being used to effectively monitor and control the quality management system, the auditor does not need to spend as much time verifying the quality management system operation. Again it must be emphasized that what the auditor will be seeking is objective evidence with respect to internal quality audits.

13. Steps Towards Implementation of a Quality System

There are many ways an organisation can go about implementing a Quality Management System. This Section of the Guidance Material is intended to provide an example of implementation into AIS.

Note: This example is intended as guidance only and should not be regarded as the only method of implementation, nor necessarily the best or only method of implementation.

The approach in this example consists of three stages:

a)   Considering what happens in AIS;

b)   Implementing a Quality Management System; and

c)   Improving the Quality Management System.

(a) Considering what happens in AIS	Step 1	Consider the business of AIS, *i.e.* the different flows of work through the organisation and list them.
	Step 2	With this list in mind, decide if there are any "permissible exclusions" (refer to Standards Guidelines for details) that apply to the AIS. Remember that any exclusions will need to be justified in the Quality Manual.
(b) Implementing a Quality Management System	Step 3	Get people involved in writing down what their jobs cover.
	Step 4	Collate this in sequences relevant to the list of main business activities collected in Step 1.
	Step 5	Identify where the standards and this list of your main business activities link together.
	Step 6	Apply the standard and the Quality Management System.
	Step 7	Keep the Quality Management System simple and functional, *i.e.* relevant to the business operations.
(c) Improving the Quality Management System	Step 8	Consider the feedback of information from the Quality Management System to lead to improvements in ideas and activities
	Step 9	Monitor and measure the changes so that everybody is aware of the gains made by the system.

Now that you have determined that you would like to analyse the business and would like to work in a more efficient manner, where do you start?

The stages and their associated steps have been outlined above, the next section provides an amplification of the details.

Step 1	**CONSIDER WHAT YOUR MAIN BUSINESS ACTIVITIES ARE AND LIST THEM**
	Those elements described in Annex 15 form the main business activities of AIS.
	- receive and/or originate - collate or assemble - edit - format - publish/store - distribute
	Aeronautical information/data
Step 2	**WITH THIS LIST OF MAIN BUSINESS ACTIVITIES, DETERMINE IF ANY OF THE ACTIVITIES REQUIRE YOU TO DO DESIGN WORK**
	Design means taking raw ideas or concepts and either though design drawing, computer design or academic thought process developing a product and/or service design or project plan to suit the needs of your customer. Generally for AIS, design work will manifest itself through the design of instrument procedures.
	If you determine that you do not design, and the products and/or services are done against tried and previously developed standards or specifications, you may be able to claim a "permissible exclusion".
	To achieve the next step, you need to keep the list of main business activities firmly in mind. It may help at this stage to produce these activities in the form of a flow chart to assist in the development of a Quality Management System.
	The purpose of setting activities out in this way is to identify:
	the different components of the AIS and decide if they all fit together, or if changes are required to make the whole process work better; and
	where and if the elements of the standard are covered.

Step 3	**GET PEOPLE INVOLVED BY WRITING DOWN WHAT THEIR JOBS COVER**
	Now is the time to get everyone concerned involved in writing down how they carry out the parts of the AIS activities they are responsible for, stating:
	• who is responsible for performing and checking activities;
	• where the activity takes place;
	• when it will happen; and
	• what happens, that is, how the activity is performed.
	Some important points you will need to think about are:
	a) As the job is being carried out by a specialist, you will only need to reference the type of person and the qualifications.
	b) If, the work is done by non-specialist staff, or there are specific in-house requirements, more detail may be required.
	c) The sequence of the activities may still need to be defined, for example:
	• How a job is initiated.
	• How does the work get started?
	• Who monitors the progress?
	• How is the work processed and inspected?
	• Who decides when the work is finished?
	• How is delivery made?
	• What follow up action is needed and who does it?
	• What records are kept and who keeps them?
	If your organisation already has its details written down as operating or work instructions, your job is already half done. Do not rewrite what is already documented, make a note of the name and title of the document so it can be controlled and if necessary referenced in other quality management system documentation at a later date.
	d) Most important ... Keep written documentation simple.

Step 4	**COLLATE THIS IN SEQUENCES RELEVANT TO THE LIST OF BUSINESS ACTIVITIES (STEP 1)** Once everyone has written down (or collected previously written) work instructions relevant to their part of the activity or particular job responsibilities, you as manager should take time out with someone else from the business to look at: • What has been written; • Satisfy yourself that it all fits together; and • Deal with any gaps or inconsistencies. By appointing someone to assist you, you have basically appointed a management representative or if you are doing most of this yourself as manager, you have assumed the role of management representative. You have now addressed one of the first requirements of the standard. By collating all these documents, you now have a procedures manual (which is another requirement of the standard). You should adopt a consistent style for these documents which you and your people are comfortable with. This may provide an opportunity to review and improve the procedures themselves.
Step 5	**IDENTIFY WHERE THE STANDARDS AND THIS LIST OF YOUR BUSINESS ACTIVITIES LINK TOGETHER** You or your management representative need to go through the documents you have written with a copy of the standard beside you and determine if you have met: • the requirements of the standard; and • your process control requirements. If you identify an area of the standard you have not addressed you will need to consider how you will cover that particular requirement. You may need to add some detail to one of the existing procedures to ensure the requirement is met. It may require some additional documentation, but be careful, make sure it is relevant to the work of the AIS. You may have to use external documents in your business activities. Some examples are dealers' manuals, maintenance manuals and installation manuals. It is not necessary to rewrite these to include them in your quality management system. All that is needed is to make an appropriate reference to the process control document in your manual.

Step 6	**APPLY THE STANDARD AND THE QUALITY MANAGEMENT SYSTEM**
	If you continue to involve others in your organisation, they are more likely to grow with the quality management system and have input. The quality management system will then reflect reality rather than become irrelevant paperwork. The following points should be noted:
	• Do not create unnecessary paperwork, forms, and the like. Look at what is currently done and write your procedures to show how the job is done, not how you wish it was done or should be done.
	• Only create a form if it is going to capture a critical activity or is going to help someone. A signature on or an extension to an existing form may suffice.
	• Remember, keep a record when:
	➢ a problem arises;
	➢ a good suggestion is raised; or
	➢ a customer or employee expresses a need for action.
	• To implement the quality management system, everybody needs to be have access to the documentation that relates to their activities. They need to be given some insight into how the quality management system works and why, for example, document control ensures that they have the latest copies of information relevant to their jobs and can rely on making decisions based on up-to-date information.
	• Everybody needs to be trained to understand how to keep the quality management system up-to-date themselves, if changes take place in areas they are responsible for. Everybody needs to know how to make changes to the quality management system as well as noting problems and putting forward ideas for improvement. Remember that you need to approve any changes before they are put in place.

Step 7	**KEEP THE QUALITY MANAGEMENT SYSTEM SIMPLE, FUNCTIONAL AND RELEVANT TO THE BUSINESS OPERATIONS**
	The following points are worth noting:
	• The purpose of implementing a Quality Management System is to ensure that the business activities of the AIS are operating in a controlled manner and the people responsible for the various activities know and understand their roles and responsibilities.
	• Quality Management System documentation should be a ready reference point to identify how, when, where and sometimes why a job should be done, or an activity managed. For that reason, the wording should be simple and in the language used in the workplace on a daily basis.
	• Documentation should be in a format that is easily used in the organisation. For example:
	➢ if computers are available, it may be easier to have a computerised system, rather than a paper system;
	➢ where there may be language or other differences in the workforce, it may be necessary to use pictures or several translations of the documents.
	• Documentation should reflect what is currently happening in the business. During the audit process, questions will be asked and objective evidence sought, to show that personnel are using and understanding the quality management system. The objective evidence is provided by the documentation.

IMPROVING THE QUALITY MANAGEMENT SYSTEM

An effective Quality Management System uses feedback loops to improve how you go about doing things, which in turn should lead to an improvement in product and/or service quality.

Step 8	CONSIDER THE FEEDBACK OF INFORMATION FROM THE QUALITY MANAGEMENT SYSTEM TO LEAD TO IMPROVEMENT IN IDEAS AND ACTIVITIES
	By noting areas of concern from corrective action activities (Step 6), you will gather data, or note trends that you can look at and consider for improvement.
	Improvements may be simple and easily achieved in the initial stages but may become more challenging once the obvious opportunities for improvement have been taken. It is worthwhile persevering with a systematic approach to quality improvement, since the benefits can be considerable.
	Normally, improvements are adopted over a period of time as money and resources become available. A realistic approach and steady progress will build confidence and maintain enthusiasm.
Step 9	MONITOR AND MEASURE THE CHANGES SO YOU KNOW WHAT YOU HAVE GAINED
	It is important to remember to measure your progress. One-way of doing this is to monitor mistakes and their cost. This gives you the opportunity to identify areas where cost savings may be made.
	Noting how long or how many resources are spent on an activity or service delivery may also obtain measurements. This should always be recorded on any activity that has been chosen for improvement, prior to commencement and compared again at the end, even though the activity may be small and simple.

CONCLUSION **Remember:** small steady changes leading to improvements, well thought through and effective, are going to have long term advantages.

These nine steps can help you take advantage of the quality management system approach and allow it to contribute to the growth of your business.

14. What Does Certification and Registration Mean

Starting Out

Certification/registration of Quality Management System is not mandatory but the following provides a brief outline for those wishing to follow this path.

Before the actual certification/registration can take place, it is essential to have all aspects of the Quality Management System in place and running for several months. You can then see the Quality Management System in operation and have the opportunity to improve it. Any improvements you can achieve at this stage can simplify the certification/ registration process. This can save you time and money.

Certification/registration bodies do not operate on the principle of "what is going to happen". They want to see what has happened. You will need sufficient records to demonstrate that your Quality Management System has become established and effective.

Who Does the Certification/Registration?

There are two types of certification/registration; one is carried out by your customer(s) and the other by an independent party. The outline below is based on that typically adopted by independent third party certification/registration bodies.

Brief Outline

The process generally takes the form of the following steps: You make a formal application to the certification/registration body. The application normally includes a description of your business activities, the product and/or service range, and any other information requested. The certification/ registration body may ask for a questionnaire to be filled out.

Next, the certification/registration body will review your quality manual. What it will be looking for is how well the quality manual describes what you say happens against what the standard says should happen.

When there are deficiencies, the certification/registration body will indicate where the problems are. Amendments to the quality manual will usually overcome most problems, but you may also have to develop additional procedures.

A further review of any changes is carried out and is often combined with one of the subsequent stages. The certification/registration body may then hold a pre-assessment check or go straight to the certification/registration audit.

In the certification/registration audit, the auditor (and there may be more than one) will use the quality manual and any procedures as a guide to how your business operates. The auditor's operative words will be 'Show me'. The auditor will be looking for records, documents, or other objective evidence to see that you are doing what your quality manual/procedures say you do.

Where inconsistencies (non-conformities) are found, the auditor's actions depend on how serious these are. For major non-conformities, the certification/registration could be withheld pending rectification. For minor non-conformities, a qualified certification/registration might be issued, pending rectification by the next compliance audit.

Once certification/registration is granted, the certification/ registration body will carry out compliance audits of the Quality Management System over the period for which the certification/ registration is valid. These audits are not as comprehensive, in that the full quality management system is not necessarily assessed at each compliance audit.

If non-conformities are found during a compliance audit and not rectified within specified times, certification/registration may be withdrawn. Minor non-conformances will be required to be rectified by the next compliance audit, which under these circumstances may seem to come round very quickly.
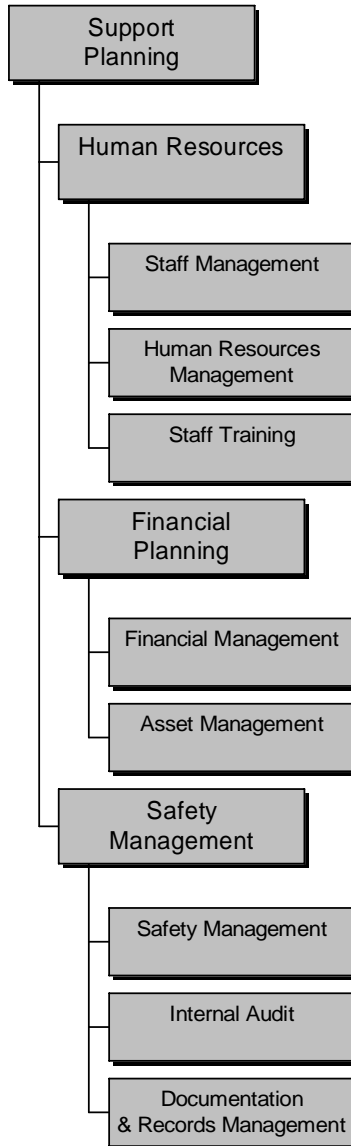
Terms and Definitions

Bibliography

ISO 9000

HB66(Int) 2000

AS/NZS ISO 9001:1994 – Quality Systems. Model for quality assurance in design, development, production, installation and servicing.

Support Planning

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                    ┌─────────────────┐
                    │     Support     │
                    │    Planning     │
                    └────────┬────────┘
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                    ┌────────┴────────┐
                    │ Human Resources │
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                    ┌────────┴────────┐
                    │ Staff Management│
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                    │ Human Resources │
                    │   Management    │
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                    │    Financial    │
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                    │ Asset Management│
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                    │ Documentation   │
                    │& Records Mgmt   │
                    └─────────────────┘
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(State)

Aeronautical Information Service

Quality Management System

Quality Manual

WARNING

CONTROLLED COPY No:

If the number is:

RED   Then this is a Controlled copy

BLACK   Then this is **NOT** a Controlled copy

CHAPTER 1

PART 2 –

SAMPLE QUALITY MANUAL

INTENTIONALLY BLANK

\<Insert the name of the AIS Unit\>

Quality Manual

CONTROLLED COPY NUMBER

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Table of Contents

1. Introduction

This Quality Manual relates to the operation of <insert the AIS Unit> and provides guidance on the policies and procedures applicable for the provision of an aeronautical information service by the State of <insert State name>.

The policies and procedures within this manual have been implemented to ensure that the requirements for a quality system for the AIS of <insert State> are documented and so ensure compliance with the requirements of ICAO Annex 15-*Aeronautical Information Services* and other relevant standards.

The <insert> AIS Unit forms part of <insert the organisational arrangements, *e.g.* Air Traffic Services Division> within the <insert parent body, *e.g.* Civil Aviation Administration of …>

This AIS Unit is located at:

<insert address>

Tel:	<insert contact number>
Fax:	<Insert contact number>
Email:	<insert contact details>
AFTN:	<Insert contact details>
Web Site:	<Insert contact details eg www.>

The contents of this Manual are reviewed on an as required basis, but not less than annually. <Insert who is responsible for coordinating changes to the Manual eg the Administration Manager, Aeronautical Information Service> is responsible for coordinating requests for changes and amendments to the Manual.

The approving officer and issuing authority for this Manual and subsequent amendments is <insert title or position of authority>.

<Insert who is responsible for the Manual eg the Administration Manager, Aeronautical Information Service> is responsible for the maintenance and distribution of this Manual.

Issuing Authority:

Signed: _____   Name: _____

Date: _____

2. Scope and Field of Application

The Scope of this Manual is to define <insert the scope of the Manual>

The provision of AIS for the State of < state name >.

> **Note:** If this manual only covers part of the AIS, e.g. NOTAM, this needs to be specified.

Document the Scope, including the:

   a)   boundaries within which the AIS operates;

   b)   deliverables of the AIS eg product range;

   c)   exclusions (see below);

   d)   related work areas and interdependencies with other areas;

   e)   constraints – ensure that any constraints in terms of time, money or other factors are clearly identified;

   f)   assumptions – specify any assumptions that have been necessary when describing the scope.

Exclusions

<List any exclusions to the Standards or other areas that are not covered by this Manual. This is to ensure that there is no ambiguity about what is within the Scope of the AIS and what is outside>

3.   References and Associated Documents

List applicable State Civil Aviation documents, regulations, orders and rules.

- ➤   ICAO Annex 4-*Aeronautical Charts*
- ➤   ICAO Annex 5-*Units of Measurement*
- ➤   ICAO Annex 15-*Aeronautical Information Services*
- ➤   ICAO *Aeronautical Information Services Manual* (Doc 8126)
- ➤   ICAO *Aeronautical Charts Manual* (Doc 8697)
- ➤   ICAO *Abbreviations and Codes* (Doc 8400)
- ➤   ICAO *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services* (Doc 8585)
- ➤   ICAO *Aircraft Type Designators* (Doc 8643)
- ➤   <insert other relevant documents, *e.g.* Business Plans>

4.   Document Control Information

Document Control Sheet

This document is a controlled document and is identified as such when the controlled copy number is shown in <insert colour, usually red>. All other copies are uncontrolled.

The Manager Aeronautical Information Service <insert if someone else is responsible>:

> ➢   maintains a distribution list and the master control copy of the AIS Quality Manual;

> ➢   is responsible for keeping a register of controlled copies; and

> ➢   ensures that each copyholder verifies receipt of all controlled documents and subsequent amendments.

Uncontrolled copies may be issued with no record of who has the copy. For uncontrolled copies the document holder is responsible for ensuring that the copy they have is up-to-date.

The control information for this manual is detailed in the table below:

Title:	AIS Quality Manual
Owner:	<insert>
Location of master copy:	Aeronautical Information Service
Date last updated:	<insert date>
Holders of controlled copies:	A register of holders of controlled copies is shown on <insert page> of this manual.

5. Controlled Copies of This Document

Copy No:	Holder
1.	
2.	
3.	
4.	**\<insert as appropriate\>**
5.	
6.	
7.	
8.	

This manual must be made available to all AIS staff. It may also be advantageous to distribute the manual to those organisations that make substantial contributions to the AIP. eg: ATS, Various methods of distribution can be considered, eg paper and electronic formats.

6. Amendments and Amendment List Record Sheet

Change Summary

Changes made to this document are summarised in the following table.

Date	Pages	Description
<insert>	All	Initial Draft

Amendments

Amendments to this manual must be by page replacement, addition, and deletion or by complete re-issue.

Staff carrying out an amendment to this Manual must complete the Amendment Record sheet below.

Amendment Number	Amendment Date	Amended by	Date

7.   Check List of Effective Pages

	Page Number	Date		Page Number	Date

8. Quality Policies

The following statement should clearly and simply state principle policy or policies relevant to the provision of AIS.

<insert the parent organisation name> mission is to provide a safe, efficient and effective air traffic system. <insert the organisation name> recognises that high quality aeronautical information services are essential to achieving this mission.

The <insert name> AIS Unit is committed to providing high quality aeronautical information services to meet the needs and requirements of its customers and to seek continuous improvement in the provision of those services through a quality framework.

Quality will be an integral part of all AIS activities.

The quality framework will be based on the ISO 9000 series of International Standards and will draw as appropriate, on ICAO Standards and requirements and other International and <insert the name of the State> Standards.

AIS will be provided in a manner consistent with the standards and recommended practices contained in the applicable ICAO Annexes, in particular Annexes 4 and 15.

A statement similar to the following can be used in circumstances where the AIS provider also has commercial objectives:

The AIS will be provided in a manner that is consistent with the commercial objectives of both the < name of government department or agency responsible for the provision of AIS > and customers.

The following statement should be included in all cases.

The policies and procedures detailed in this manual are binding on all AIS staff.

9.   Quality Objectives

These objectives should reflect the principles of the Quality policy.

The Quality Objectives of <insert> State are to (*e.g.*):

a)   provide quality information and data services to meet the demands and requirements of our internal and external customers;

b)   ensure that products are constructed, produced and distributed in such a way as to enable users to operate safely and efficiently;

c)   ensure the quality and timely promulgation of products for which AIS is responsible;

d)   ensure that products comply with applicable standards and regulations;

e)   ensure as far as practicable that the information published is accurate and up to date;

f)   provide the end user with value-added, defect-free products, that are timely and competitively priced;

g)   institute a program of continuous learning within the AIS;

h)   foster an environment where quality is the accepted way of doing business;

i)   foster the participation of our staff in the work and decision making processes of the AIS; and

j)   pursue commercial business opportunities within the areas of expertise of the AIS.

10. Communicating the Quality Policy and Quality Objectives

Each staff member in the <insert> AIS has access to this Manual and consequently to the Quality Policy and Quality Objectives.

The <insert who is responsible eg Manager, AIS and/or Management Representative> is/are responsible for making staff aware of the Quality Policy and Quality Objective, for the implementation of quality practices to achieve these Objectives, and to monitor their application.

Staff members are kept informed of these matters through staff meetings, performance agreements, appraisals and competency checks.

11. Organisation

Provide here a summary of how the AIS is organised, where it is located, how it is staffed and the relationship of the AIS to other departments of the Civil Aviation administration.

ICAO DOC 8126, Chapter 2 provides guidance on the establishment of a sound organisational base and management structures. An organisation chart such as the example shown in Fig 1. Below is a useful way of showing the how the AIS is organised and its relationship to other departments and work areas.

Organisational Arrangements - <Insert> AIS
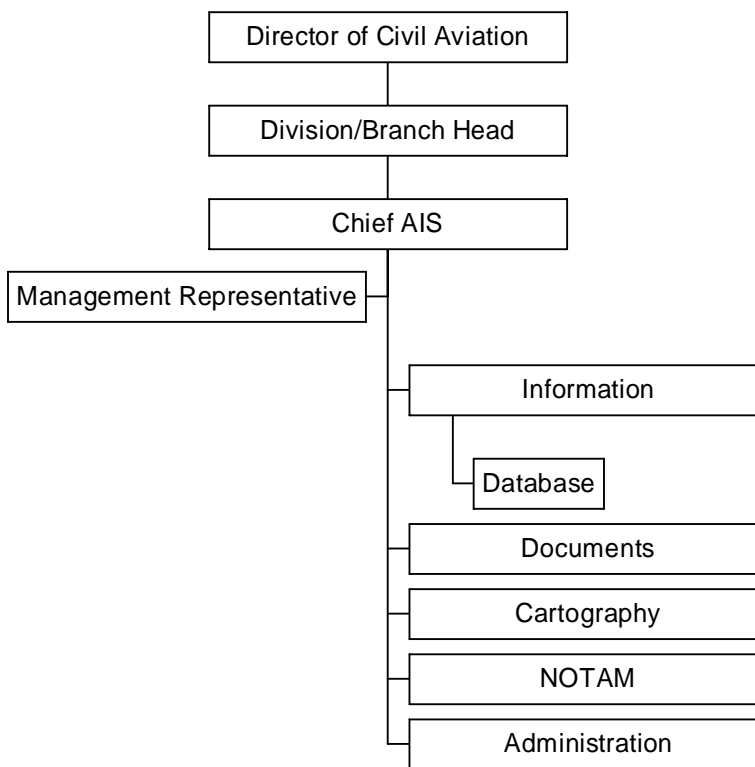
Fig. 1

Management Representative

It is important to identify one person who has overall responsibility for the implementation and monitoring of the quality policies and procedures described in this manual.

Responsibility and authority for all quality processes and functions described in this manual and associated aspects of the AIS are held by the < specify title or position of manager with overall responsibility for the AIS quality system >.

< specify title or position of manager with overall responsibility for the AIS quality system > has the responsibility and authority for:

a)   ensuring that processes for the quality management system are established and maintained;

b)   reporting to senior management on the performance of the quality management system, including improvements; and

c)   promoting awareness of customer requirements throughout the organisation.

> *As shown in the above organisation chart, it may be useful to structure the AIS as function teams, where each team of one or more staff could be responsible for certain aspects of the AIS. These could include an Information Team, Cartographic Team, Publishing Team, NOTAM Team and an Administration Team. Suggestions on the responsibilities of each of these are shown below.*

Information Team

The Information Team includes a Coordinator and < number > assistants. This team has primary responsibility for the collection and verification of information for publication in the AIP, and for database entry.

Documents Team

The Documents Team includes a Coordinator and < number > assistants. This team has primary responsibility for the processing of changes provided by the Information and Cartographic Teams to create AIP amendments and other document changes for printing and distribution.

Cartography Team

The Cartographic Team includes a Coordinator and < number > assistants. This team has primary responsibility for the processing of amendments to charts.

NOTAM Team

The NOTAM Team includes a Coordinator and < number > NOTAM Officers. This team has primary responsibility for operation of the International NOTAM Office and the provision of Pre-flight Information.

Administration Team

The Administration Team includes a Coordinator and < number > assistants. This team provides administration support to the AIS.

12.   Responsibility and Authority

Position Descriptions

The responsibilities and authorities of each staff member are detailed in individual Position Descriptions, copies of which are held by each staff member and on file <insert the file name and reference>

Position Descriptions are important - they should clearly specify the responsibilities of each individual staff member.

Position Descriptions should be held on file and not included within this manual. This enables changes in staff to be made without the need to amend this manual. A suggested position description for an AIS team member is shown in Appendix 1.

Written contracts are held by both the AIS and various Sub-contractors for the provision of those services listed below.   These contracts detail the responsibilities and authorities relevant to the services provided.

Sub-Contractor	Service Provided	Location of Contract
<insert details>	<insert details>	<insert details>

13. Document Control

Note: These procedures relate to the amendment and control of this and any other manuals that document the policies, processes and procedures for the Quality System. The Document Control measures in place in the AIS should be specified in this part. Parts of the text shown below may be suitable for inclusion in this quality manual.

Document control procedures are developed for all documents that are part of the Quality System to ensure that:

a)   pertinent issues of appropriate documents <u>only</u> are available at all locations where operations essential to the effective functioning of the quality system are performed;

b)   obsolete documents are promptly removed from all points of issue or use;

c)   documents are regularly reviewed for applicability; and

d)   all documents clearly show traceability to source.

All documentation that is part of the Quality System should be reviewed in conjunction with Management. When the procedures or standards detailed in this manual are derived from other references (such as ICAO Annexes), amendments to such references should be reviewed upon receipt, and where necessary, the relevant procedures or standards amended to reflect the requirements of such references.

All amendments to Quality System documents must be brought to the attention of the appropriate staff.

Controlled Documents (Example text)

A controlled document is a document for which the release, status, storage, distribution, revision and disposal are managed according to documented procedures. The documents in a quality system, and any other important reference, must be controlled to keep them accurate and up-to-date.

<u>Example:</u>

➢   AIS Quality Manual
➢   Standard Operating Procedures – AIS Charting
➢   <insert other examples as appropriate>

Controlled and Uncontrolled Copies

A controlled document is an individually numbered document assigned to a specific registered copyholder. Controlled copies are identified by the <insert the colour eg red> colouring of the controlled copy number on the front page.

All controlled documents must have a copy number entered in red ink in the space provided on the cover sheet by the officer responsible for issue of the document.

Roles and Responsibilities

A full description of procedures relating to the control of Documents is shown in Section <insert> of this Manual. The responsibilities shown below only address the responsibilities of persons holding controlled and uncontrolled copies of this document.

Holders of Controlled Copies

Holders of controlled copies are responsible for ensuring the copy is current before it is used and for disposing of the controlled copy once it is superseded.

Holders of Uncontrolled Copies

Holders of uncontrolled copies are responsible for ensuring the copy is current before it is used and for disposing of the uncontrolled copy once it is superseded.

Document Identification (Example text)

All controlled documents must show the following identification elements:

      a)   title

      b)   effective date

      c)   page number

This is to be achieved by using appropriate titles on drawings and headers and footers on documents.

> *Where a document consists of several pages and is permanently bound, only the front page needs to show the full identification of the document. All other pages should be identified by document title and page number.*

Document Format (Example text)

Overview

Amendments to this document must conform to the formats described in this part.

Element	Style
Page size	<insert eg A4>
Font	<insert eg Arial 12 pt>
Margins	<insert>
Etc	<insert>

Text Conventions

The word "must" is to be standard in the "shall/must" situation and means that conformance with the procedure or instruction is compulsory.

The term "should" implies that all users are encouraged to conform to the applicable procedure.

Abbreviations must be avoided when not in common usage, or when the document's intended recipients are not specialists familiar with the terms.

If an abbreviation is not in common use, the first instance must be shown in full with the abbreviations in brackets, eg Office of Legal Counsel (OoLC). Thereafter the abbreviation may be used exclusively.

When in doubt, the word or term must be spelt in full throughout the document.

Layout

Change bars must be shown to indicate any additions or deletions or alterations to text.

A bold **"D"** must be shown next to the change-bar to highlight areas of text that have been deleted.

Paragraph numbering is not required.

Footers must contain:

      a) Document title;
      b) Issue date;
      c) Authorisation; and
      d) Page numbers.

Document Amendment (Example text)

For convenience, and to coordinate with changes in both reference documents and products, where possible, amendments should be issued to become effective on the ICAO determined AIRAC dates.

Amendments to documents should be indicated < detail how amendments are identified >. Changes to charts and diagrams should be indicated by a note along the inside margin.

Hand amendments to hard copy documents should only be used for minor typographical amendments. Amendments to policies, procedures and associated forms should only be by the issue of replacement documents, pages or forms. All hand amendments should be initialled and the authority indicated.

Documents should be reissued after a practical number of changes have been implemented.

Document Issue

The <insert the person responsible for the issuance of controlled documents eg Administration Coordinator> maintains a master document list which records:

   a)   document title, file reference (both software and hard copies);

   b)   the author;

   c)   the authorities for all documents;

   d)   the version;

   e)   documents received by recall;

   f)   follow up action;

   g)   distribution lists and copy numbers; and

   h)   receipt of document.

The <insert the person responsible, *e.g.* Administration Coordinator> is responsible for ensuring that all documents issued are signed as authorised copies. The <insert the person responsible> should record the details of the received documents and arrange distribution as per the distribution list and recall of the obsolete documents.

All amendments to documents must include a Record of Receipt. The Record of Receipt is to be completed by the recipient and returned to the Administration Coordinator along with obsolete documents.

If, within 10 working days of document distribution, the obsolete documents are not received, reminder notices should be despatched.

One copy of all document versions must be archived to show the amendment traceability. All archived documents should be annotated as "Cancelled". All other obsolete copies should be destroyed.

External Documents

A range of external documents is held by the AIS for reference purposes. These include legislation standards, recommended practices and AIP documents from other states.

If information from an external document is used in the preparation of a new product, the document must be checked to ensure the status and currency of information.

A register of ICAO documents is be maintained by the <insert the person responsible eg Administration Coordinator>.

14. AIS Quality System – Documented Procedures

AIS Responsibilities

This section should clearly define the responsibilities of the AIS with respect to the collection, publication and promulgation information. In particular, it is recommended that a clear understanding exists between information originators and the AIS as to where the responsibility for the accuracy of source data vs editorial accuracy lie.

Collection of Information

AIS receive aeronautical data and information for publication in the AIP and NOTAM from, but not limited to the following organisations that provide services in support of the air navigation system:

a)   aerodrome operators;

b)   telecommunication service organisations;

c)   Air Traffic Service organisations;

d)   air navigation service organisations;

e)   meteorological organisations;

f)   other AIS organisations;

g)   Customs, Immigrations, Conservation and Health Authorities;

h)   defence organisations;

i)   other government departments and ministries; and

j)   other States.

Information for inclusion in the AIP or NOTAM is sent direct to the AIS. This material is authenticated as described in "Authorisation of Original Material".

Data and Information from other States

Aeronautical data and information is received from other States:

Information	State	Source
<insert>	<insert>	<insert eg AIP, NOTAM, bi-lateral agreement etc>

Editorial Responsibilities

<insert> AIS has the following editorial responsibilities:

a)   ensuring that the data and information collected is published in the appropriate format, in accordance with the applicable

standards and distributed according to the operational significance of the information;

b)   ensuring that the information received is accurately promulgated;

c)   ensuring that aerodromes published in the AIP are shown on the applicable aeronautical charts;

d)   ensuring the preparation, accuracy and distribution of all aeronautical charts;

e)   monitoring the data and information to ensure that it is reviewed by the originating organisation on a regular basis; and

f)   ensuring the timely provision of aeronautical information to the aeronautical information services of other states. This should normally be by the provision of the AIP and NOTAM, except where other arrangements are documented (by letter of agreement).

The responsibilities of the AIS for ensuring the accuracy of information relates to ensuring conformance with applicable standards and that information provided is "reasonable" when compared with other available information. The responsibility for the accuracy, completeness and timeliness of original data and information rests with the originator. Those responsible for ensuring accuracy and conformity within AIS are shown in the section "Production of the Integrated AIP Package".

Original Material Identification and Traceability

All original material must be able to be identified and traced to source. A good way of doing this is to have a register and allocate each item of original material a unique number from the register. This register number can be used on every record associated with that item. A sample register is shown below.

Original Material

Original and source material for publication and associated drawings, drafts and proofs are <insert the method of identification eg held on file> as follows:

Record	Location	Responsibility	Minimum Retention Period
<Insert eg proposed amendments to (doc)>	<insert eg held on specifically numbered amendment No. file>	<insert who is responsible for creating and filing the record>	<insert the minimum retention period>

Authorisation of Original Information

Original data and information received is checked for proper authorisation against <insert the method eg the Originator Database, or if received on Company Letterhead paper etc>.

To ensure the authenticity of information presented for publication, particularly from external originators, the AIS should maintains a register of details for all authorised originators on the Originator Database. This register should include the following details for each originating organisation:

- *organisation name*

- *contact details*

- *the date that the above details were last reviewed and updated*

- *the expiry date for current information which should be on the first anniversary of the receipt of the most recent details*

The names and signatures of all persons responsible for the authorisation of amendments on behalf of each organisation should be held on file.

Originators should be requested to review details at least annually.

An alternative is to have data and information coming into the AIS on Company Letterhead paper where this is possible.

Database Amendments

Procedures should be established and included in the Manual to ensure that amendments are actioned in the database. As with published information, amendments to database information should be subject to procedures that ensure amendments to the database are authorised and processed. A sample checklist is shown below.

Step	Action	Responsibility
1.	Change details registered	<insert>
2.	Change authorised	<insert>
3.	Data checked and verified	<insert>
4.	Data entry	<insert>
5.	Entered on <insert eg charts>	<insert>

AIP Production Schedule

To efficiently manage the AIP amendment process, it is recommended that a production schedule be developed and promulgated to all organisations originating material for the AIP or involved in production. This schedule should be based on the AIRAC dates as listed in DOC 8126. For each effective date, critical dates within the publishing and distribution process should be established. These need to take into account factors such as and the time to complete publishing processes, the time required to print, postage or delivery times and ICAO recommendation of 28 or 56 days prior notification. An example of a AIP Production Schedule can be found in Appendix 2.

The <insert State> Integrated AIP Package is produced in accordance with the AIP Production Schedule which is published on a <insert cycle, *e.g.* 12

months>.   An example of a Publication Schedule is shown in Appendix <insert>.

Scheduling and Coordination of Amendments

There should be a procedure in place to ensure that amendments to the AIP are scheduled and coordinated. This could be achieved by convening regular meetings of major originating organisations with AIS staff.   Significant improvements can be introduced into the AIP publishing process with thorough forward planning.

Originating organisations should be encouraged to provide the AIS with an indication of AIP publishing requirements as far in advance as possible, taking user needs into consideration eg how many amendments are required per year and are they economically viable.

The <insert State> AIS convenes regular meetings with the following originators of amendments to the AIP:

< list originators >

At these meetings, originators will be invited to submit the following details on proposed amendments including:

a)   Effective date of amendment;

b)   Scope of amendment;

c)   Affected AIP documents;

d)   Charting requirements; and

e)   Consequential impact on other information.

The purpose of these meetings is to schedule and coordinate requests for amendments to the AIP. Agendas and minutes are kept by <insert>for all meetings.

Format and Standards

Standards as specified in the following ICAO Annexes and documents are applied by AIS:

a)   Annex 15;

b)   DOC 8126;

c)   Annex 4;

d)   DOC

e)   <list other Annexes and documents that are used as references>

Note: Where a State includes within the AIP information for which no ICAO Standard or Recommended Practice is available or where there are a number of differences to the ICAO Standards and Recommended Practices, the standards that are being applied need to be documented. This can either as part of this manual or as a separate "Standards or Style Manual". If a "Standards or Style Manual" is used, this should be reflected in the hierarchy of documents.

Coordination of AIP Amendments, NOTAM and Other Bulletins

NOTAM are monitored by the Information Team to ensure any permanent changes that are initiated by NOTAM are identified, and if not already initiated by the originator, follow-up action for an AIP amendment occurs. This could be addressed by the procedure shown below.
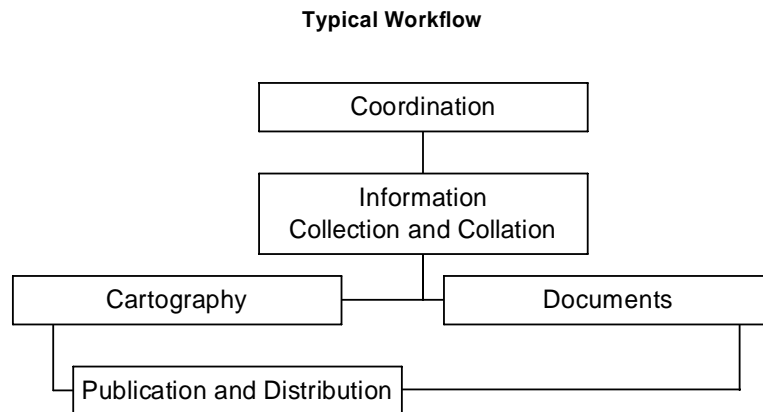
NOTAM originated by <insert eg to these the domestic and international NOTAM, information bulletins from third party providers such as Jeppesen are reviewed daily by <insert who is responsible>. Those relating to published AIP information are checked to determine whether the information promulgated will be of a permanent or long-term nature and if so, whether an amendment to the AIP has been initiated by the originator.

If no permanent amendment has been initiated by the originator, the <insert> will contact the originator and advise of the action required.

Responsibility for initiation of a formal change to the Integrated AIP Package is the responsibility of the NOTAM originator, or other designated person when required.

15. Production of the Integrated AIP Package

To more effectively manage the AIP publishing process, it could be useful to break the process into a number of phases. These phases could be defined by the primary work undertaken during each, or by the functional team that is responsible for carrying out the work. A suggested workflow is shown below.

Typical Workflow

```
              ┌──────────────────────┐
              │     Coordination     │
              └──────────┬───────────┘
                         │
              ┌──────────┴───────────┐
              │     Information       │
              │ Collection and Collation │
              └──────────┬───────────┘
         ┌───────────────┴───────────────┐
┌────────┴─────────┐           ┌──────────┴────────┐
│   Cartography    │           │    Documents      │
└────────┬─────────┘           └──────────┬────────┘
         │                                │
  ┌──────┴──────────────────────────┐     │
  │  Publication and Distribution    │─────┘
  └──────────────────────────────────┘
```

Collection and Collation of Aeronautical Information

During the coordination phase, all requests for amendment are reviewed as follows to determine:

Step	Action	Responsibility
1.	Requested effective date	<insert>
2.	AIP documents affected	<insert>
3.	Cartographic and publishing resources required	<insert>
4.	Conformance of submitted material with required standards	<insert>
5.	Amendment requests are correctly authorised and all necessary coordination has been completed	<insert>
6.	The amendment is complete	<insert>
7.	The requested amendment corresponds to other known information. For instance, a request to increase a runway length should be compared to currently published runway information	<insert>
8.	All consequential amendment action required is understood and identified	<insert>

Amendment Process

Step	Timing	Responsibility	Description
1.	Continuous	Author areas	Prepare proposed amendments/additions and submit them to AIS
2.	Approximately 1 month before printing date	<insert>	Review and collate all proposed amendments/additions and submit them to <insert>
3.	On receipt of amendments	<insert>	Review the submitted amendments for suitability, accuracy and completeness Make appropriate records Mark unsuitable amendments as "Non Conforming" as per the procedures described in <insert>
4.	After records have been made	<insert>	Amend the AIP
5.	During the amendment process	<insert>	Check all the amendments made against the hard copies to ensure that the changes you have just made are correct.
6.	2 weeks before printing date	<insert>	Check the final proof and sign it as being approved for publication.
7.	1 week before printing date	<insert>	Prepare the final proof for publication.
8.	Before printing date	<insert>	Dispatch for publication

The introduction of any new material is normally not permitted once Step 6 has been reached and is not permitted once the hard copy has been printed. Any amendments received after this must be placed in the amendment file by <insert> ready for the next amendment package.

Records

The following table describes the records kept of this process.

Record	Location	Responsibility	Minimum Retention Period
Hard copy of all amendments	<insert>	<insert>	Archive (or as determined by State legislation)
Signed off final proof	<insert>	<insert>	Archive (or as determined by State legislation)
Historical record of amendments made	<insert>	<insert>	Indefinitely on file.
Dispatch details	<insert>	<insert>	Until the amendment is printed.

Printing and Distribution

Procedures should specify the manner in which material is prepared and delivered for printing and the distribution of the AIP.

This phase should include sufficient time to ensure AIP amendments are available to end users as specified by Annex 15 (eg: minimum 28 days)

Inspection and Checks

A good quality system requires that there are checks at appropriate stages of processes and that there are records of these checks being completed.

Step	Action	Responsibility
1.	Complete the Proof-Read Chart form by listing all affected pages connected with the particular amendment issue	<insert>
2.	Proof read the hard copy together with at least 1 (preferably 2) representative(s) from <insert>	<insert>
3.	Correct any anomalies at the conclusion of the proof read	<insert>
4.	Print a final proof and stamp this ready for approval. **Note:** *Purpose built rubber stamps are held by <insert>*	<insert>
5.	Approve for publication	<insert>
6.	Update the Collation Schedule with all the information required by the publisher <insert>	<insert>
7.	Dispatch for publication to arrive by the print date defined in planning schedule	<insert>

8.	Printers first proof checked prior to distribution	<insert>
9.	Distribution	<insert>
10.	Publisher returns <insert the number> of amended copies of the Integrated AIP Package to <insert>	<insert>
11.	Amend the master copies of the Integrated AIP Package on receipt	<insert>

Checklist for Products

Product	Produced by	Checked By	Authorised for Publication by
<insert>	<insert>	<insert>	<insert>

16.   Control of Non-Conforming Product

There should be a procedure for dealing with data and information that does not conform to the required standards. This could be done by having a method of identifying such information – eg: stamped "Non Conforming". The purpose of this is to ensure that such information cannot inadvertently be used in the published AIP.

Data or information presented to AIS for publication in the Integrated AIP Package that does not conform to the specified requirements for a particular AIP product must be marked as Non Conforming by <insert who is responsible for the marking and how the material is marked eg stamped, hand endorsed>.

<Insert> is responsible for advising the originator that the material submitted does not conform.

Step	Action	Responsibility
1.	Record non conformities	<insert>
2.	Determine the causes of non conformity	<insert>
3.	Determine actions required to prevent re-occurrences of non-conformities	<insert>
4.	Advise originator	<insert>
5.	Implement corrective action	<insert>
6.	Filing records created after corrective action taken	<insert>

17. Corrective Action and Error Analysis

Correction of Errors in Published Information

If an error is determined to be hazardous or have the potential to be hazardous, remedial action appropriate to the operational significance of the error will be initiated by <insert who is responsible>. The operational significance of the error should be determined in consultation with the originator.

Appropriate action may include:

a) issue of NOTAM. If a NOTAM is issued, the error should be scheduled for correction in the next scheduled amendment. If the next scheduled amendment will not be within 90 days, the information should be published by AIP Supplement at the next available issue;

b) issue of AIP Supplement. Errors should only be corrected by AIP Supplement when the page or chart is not scheduled for reissue at the next AIP amendment;

c) issue of an AIP amendment at next available amendment; and

d) correct at next scheduled issue of page or chart.

To ensure continuous quality improvement, procedures need to be in place to record and analyse errors and implement both corrective action and preventative action.

For the purposes of recording and analysis, an error is defined as follows:

a) any instance where information is incorrectly or inaccurately published; and

b) any instance where the accuracy, structure or format of published information does not conform with required standards

Attention should be given to whether or not an occurrence has actually created or had the potential to create a hazard. In the event that it can not be determined whether an error could or could not have been hazardous, the error should be recorded. For instance, there is probably little to gain from recording and analysing minor typographical errors.

Error Tracking Process

This instruction describes the procedures to be used when an error is detected in a component of the Integrated Aeronautical Information Publication (AIP) package. An example of an Error Tracking Form (ETF) is shown in Appendix 3; and example of an Error Tracking Register is shown in Appendix 4.

Step	Action	Responsibility
1.	Confirm the error and raise an ETF	<insert>
2.	Register the ETF	<insert>
3.	Analyse the safety aspects associated with the error and determine if NOTAM or other action is appropriate	<insert>
4.	Initiate corrective action as a NOTAM or AIP SUP and process through the NOTAM officer/NOF	<insert>
5.	Attach a copy of the NOTAM request/Draft AIP SUP to this form	<insert>
6.	Analyse the cause of the error	<insert>
7.	Discuss the error with the officer responsible	<insert>
8.	Determine remedial action	<insert>
9.	Brief AIS Manager as necessary	<insert>
10.	Initiate change action when required	
11.	Amend or establish procedures as required to strengthen processes	<insert>
12.	Sign-off the ETF when completed	<insert>
13.	Forward the completed form to <insert> for filing	<insert>

Error Analysis

To assist with the analysis of errors, it could be useful to establish a system of categorising errors as shown below.

The following guidelines are used to determine the categorisation of errors:

Critical

Any instance where the published information directly compromises the safety of air navigation:

> a) where the published information could compromise aircraft clearance from terrain, e.g. incorrect instrument approach minima;

     b)   where there is an error in navigational or route information, *e.g.* incorrect track; and

     c)   any error in the depiction or publication of airspace information, *e.g.* incorrect vertical limits.

Major

Any instance where the published information intended for communications or air navigation purposes is missing, ambiguous or difficult to interpret, *e.g.* incorrect ATS frequency.

Minor

     a)   Any instance of typographical, grammatical, printing or formatting deficiencies which do not directly cause operational difficulties, but do not meet expected standards such as:

     b)   any "typographical" error, where the information published is correct in context and content but could contain spelling or grammatical errors; and

     c)   errors where there are no operational impacts.

Preventative Action

Good error analysis should identify where necessary the preventative action required to ensure the error does not re-occur.

Step	Action	Responsibility
1.	Collate information relating to non conformities, error tracking forms and customer complaints/suggestions	\<insert\>
2.	Determine causes of non conformity	\<insert\>
3.	Determine what action is necessary to prevent non conformities re-occurring	\<insert\>
4.	Determine and implement corrective action	\<insert\>
5.	Record and file results of action taken	\<insert\>

Change Procedures

Staff are encouraged to suggest changes that will improve the quality system.

To facilitate this process, suggestions should be made in the following format:

AIS Quality System - Staff Suggestion		
No.	**To:** <Insert who the suggestions are directed to eg Manager AIS>	**From:**
Details:		
Action taken:	Originator Advised:	Date:

Each suggestion is recorded with an individual number, details entered of the action taken and advice to the originator.

Step	Action	Responsibility
1.	Register the suggestion	<insert>
2.	Determine course of action to be taken	<insert>
3.	Advice provided to the originator	<insert>
4.	Record filed	<insert>

18.   Security and Records

Records are required for data and information provided to AIS. The following table describes the record management procedures for the <insert> AIS Unit. The purpose of these is to enable traceability of all published information, including the origin, date of receipt and check procedures.

A minimum retention period for records should be specified. This could be different for records associated with NOTAM and AIP.

There should be details of security procedures for the protection of information and data. These could include computer log-on and identification procedures.

Description of Record	Location where the record is held	Responsibility for filing	Retention Period
<insert>	<insert>	<insert>	<insert>

19.   Contract Review

All contracts between AIS and suppliers, clients or consumers should be reviewed before final contract signature and on a regular basis after signature.

A review clause should be written into all contracts to allow for this provision. The aim of the review is to ensure that:

   a)   the contract requirements are clear and unambiguous;
   b)   every requirement that is different from that tendered is resolved;
   c)   the supplier has the capability to meet the requirements of the contract;
   d)   written minutes of all contract review meetings should be recorded with resolution of;
   e)   all points actioned at the meeting being clearly indicated; and
   f)   agreement that the review has taken place and is acceptable should be by contract signature and/or the exchange of letters.

<Insert> is responsible for reviewing contracts held by AIS.

20. Purchasing

General

The < position/title > is responsible for ensuring that all purchased products conforms to the specified requirements.

Assessment of Sub-Contractors

All Sub-contractors who could provide products or services that can directly affect product quality are evaluated and approved by the <position/title>.

Approval of Sub-contractors is based on, but not limited to evaluation of the following criteria:

      a)   previous Sub-contractor history; and

      b)   Sub-contractor certification to approved Quality Standards.

The type and extent of the evaluation depends on the nature of the goods or services to be provided and the degree of previous experience with the Sub-contractor.

All agreements with Sub-contractors should allow for the audit of Sub-contractor management systems by AIS (or their designated representative).

If the AIS does not have the resources and skills to carry out Sub-contractor audits, arrangements should be made with a suitably qualified organisation to carry out these audits.

Sub-contractor history should be established by maintaining a history of quality performance.

Sub-contractors who regularly fail to achieve required quality performance criteria should not be used the AIS.

Purchasing Authority

Specify here which staff members have authority for purchasing. These should also be included in individual position descriptions.

Product or Service	Authority for Purchase
<insert>	<insert position or title>

All orders should specify or include the following where appropriate:

      a)   the title of the product or service;

      b)   relevant associated drawings;

c)   means of identification;

d)   inspection instructions;

e)   approval requirements; and

f)   Quality Standard to be applied.

Where the services or products are ordered under the terms of a service contract, only those specifications not detailed in the service contract need to be included in the order. Where the services or products are ordered under the terms of a service contract, the service contract should specify the purchasing documents to be used. A Sub-contractor supplied purchasing document could be used.

Where the Sub-contractor does not supply purchasing documentation, an AIS Order should be used.

Copies of purchasing documentation should be retained.

21. Internal Quality Audits

Audit Policy

Audits of the activities used by <insert> AIS will be carried out from time-to-time to confirm that the procedures and processes used comply with quality system requirements.

Scope of Quality Audits

Audits of the AIS will cover the quality system being used, processes and products.

Responsibility

<insert> is responsible for ensuring that quality audits of the AIS are carried out in accordance with the procedures shown below.

Audit Process

The following steps will constitute the audit process. The Lead Auditor is responsible for ensuring all the steps take place:

a) advice to the AIS Manager of the proposed audit, including the audit program;

b) development of audit checklist;

c) entry meeting;

d) verbal debrief to AIS Manager and other staff (where appropriate) on audit findings;

e) completion of the audit proper;

f) compilation of the audit report and any corrective actions;

g) obtaining the AIS Manager's signature as having accepted report, agreeing to corrective actions and establishment of appropriate close-out dates;

h) dispatch of reports and corrective actions to the appropriate senior personnel.

Audit Records

One copy of the audit report, including comments and information from follow up meetings will be filed for <insert the period>.

Note: In a small AIS, there could be insufficient staff available to provide internal audit capability. In this case, arrangements could be made with other suitably qualified staff within the Civil Aviation administration, with another organisation or with a neighbouring State.

Management Reviews

Regular Management Reviews are important to provide the opportunity to assess the overall effectiveness of the Quality System. To assist with this, it is helpful if someone independent of the AIS is facilitates the Management Review. This could be a representative from the Quality Assurance department or similar.

Management Review

Management Review meetings will be convened and chaired by < position or title > and usually involve < names of attendees >. An agenda and minutes will be prepared and kept for all such meetings. These meetings will be held at 6 monthly intervals.

22. Training and Competency

Overview – Training

The competencies required for each position are detailed in the relevant Position Descriptions. From these competencies, and initial and regular assessments of performance, training requirements for individual staff are identified.

Newly Appointed Staff

The training requirements for newly appointed staff are identified in consultation with the staff member and implemented as a Training Plan. The Training Plan will identify all relevant items for which training is required, a time-frame for the completion of each item (either due date or period) and when appropriate, any required achievement level.

As training items are completed, completion is recorded on the Training Plan.

Current Staff

Details of training programs for on-going training to keep current with practices applicable to the position and to ensure all incumbents are trained to the specifications, are developed and maintained by the Manager AIS in consultation with individual staff members.

This is carried out as part of the annual Performance Assessment with any identified training requirements recorded in the Personal Development Plan. Details of the completion of training for all staff (newly appointed and current) is made in the staff members file.

Competency

This section should describe the procedures used to ensure that staff employed in the AIS have the skills and knowledge appropriate to their responsibilities.

Position	Qualifications and/or Core Competencies

Newly Appointed Staff

New appointees to any position are required to demonstrate experience and competency appropriate to the position being filled. Initially, this will be determined through the recruiting process.

a)   A training plan for all newly appointed staff is shown at <insert the reference>.

The performance of newly appointed staff members will be reviewed within 3 months of appointment. This requirement will normally be met by reviewing the results of day-to-day work and the completion of Training Plan items.

If at the completion of all Training Plan items, or the completion of the first 3 months of employment (whichever is the latter), the staff member has demonstrated an appropriate level of competency, they will be considered to be current staff and from that time, be required to meet the competency requirements for current staff.

Current Staff

To remain competent, staff are required to carry out their specified responsibilities at least once every three months. Because of the on-going and regular nature of their work, staff will normally satisfy this requirement through their day-to-day work.

Where a current staff member is absent for a period exceeding 3 months, their performance will be reviewed during the month of recommencement of work, or until such time as they have demonstrated an appropriate level of competency. The performance attributes to be reviewed will depend upon the position held, the length of their absence and the nature of work currently in progress. These should be determined by mutual agreement with the staff member concerned.

Competency Records

Details of competency reviews are held on individual staff member's files.

Sub-Contractor Competency

Where processes relating to the production are subcontracted, the Sub-contractor should have demonstrable competence appropriate to the work being undertaken. This is usually measured through historical performance.

It is recommended that a file be maintained to record Sub-contractor performance, and in particular, any problems and corrective and preventative actions that could result.

Sub-contractors should be required to demonstrate adequate and ongoing competency in the services provided. This should be assessed by the results of the services or products provided by the Sub-contractor concerned and by regular audits of the Sub-contractor.

Performance Assessments

As well as staff training, it is recommended that a program be put in place to regularly review the performance of individual staff. This would normally be annually. For new staff, a performance review at the completion of training could be appropriate. This performance review could provide the opportunity to agree on any further training required.

Annual Performance Assessments are completed for all staff. Performance reviews should include:

a)   the establishment of performance objectives for the next period (year);

b)   a review of the staff members performance against objectives for the review period; and

c)   identification and agreement of any training required.

Details of Performance Agreements and Performance Appraisals are held on individual staff member's files.

23.   Definitions and Terminology

General Definitions

The following definitions are provided for guidance. These could nee to be amended to suit specific State policies etc.

Quality

Totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs (ISO 8402*).

*Note.- Entity is an item which can be individually described and considered (ISO 8402 *).*

Quality Assurance

All the planned and systematic activities implemented within the quality system, and demonstrated as needed, to provide adequate confidence that an entity will fulfil requirements for quality (ISO 8402 *).

Quality Control

The operational techniques and activities that are used to fulfil requirements for quality (ISO 8402 *).

Quality Management

All activities of the overall management function that determine the quality policy, objectives and responsibilities, and implementing them by means such as quality planning, quality control, quality assurance and quality improvement within the quality system (ISO 8402 *).

Quality System

The organisational structure, procedures, processes and resources needed to implement quality management (ISO 8402 *).

* ISO Standard 8402

Quality Management and Quality Assurance-Vocabulary, Second Edition.

Document

Any manual or page thereof used to implement the quality system.

Note.- This should not be confused with the AIP documents, which could be products of this quality system. Where an AIP document is referred to within this manual, it should be specified by name.

Originator   Any organisation that provides data or information
                               for publishing in the AIP either as an amendment,
                               Supplement or as a NOTAM.

Sub-Contractor   Any organisation or person contracted to provide
                               products or services directly related to the
                               production processes of this quality system.

Technical Definitions

*The following list is provided for guidance and may need to be amended to suit the needs of
the individual state and knowledge of staff employed by the AIS.*

The following technical abbreviations and terms are used within this manual.

AFTN   Aeronautical Fixed Telecommunications Network

AIC   Aeronautical Information Circular

AIP   Aeronautical Information Publication

AIRAC   An acronym (aeronautical information regulation
                               and control) signifying a system aimed at advance
                               notification based on common effective dates, of
                               circumstances that necessitate significant changes
                               in operating practice.

AIS   Aeronautical Information Service

ATS   Air Traffic Services

ERC   Enroute Chart

FIR   Flight Information Region

ICAO   International Civil Aviation Organization

IFR   Instrument Flight Rules

NOTAM

A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

Time System

Specify the time system/s applicable within the FIRs covered by this manual.

The day begins at 0000 hours and ends at 2359 hours using the 24-hour clock in UTC, in accordance with ICAO Annex 5 – *Units of Measurement to be Used in Air Ground Operations.* 2400 should NOT be used. Date and time is expressed as a six-figure group of day, hour and minute; e.g. 4 April 1993, 1635 UTC is expressed as 041635.

Appendix 1 - Example Position Description

Job Title: Aeronautical Charts Officer
Level: Airways Operations Officer
Location:
Reports To: Operations Manager, Aeronautical Information
                  Service
Subordinates: Nil

Primary Job Purpose

The primary purpose of this position is to collect, coordinate, validate, and prepare amendment to a range of aeronautical charts in accordance with the specifications described in ICAO Annexes 4 and 15.

Key Responsibilities or Duties:

a)   Collecting, coordinating and validating proposals for amendments to a range of aeronautical charts;

b)   Preparing and making changes to aeronautical charts;

c)   Detailed checking of interim chart plots and proofs;

d)   Checking "first rushes" from the print run;

e)   Assist with the cross-checking of chart amendment data with that contained in other aeronautical documentation;

f)   Maintaining quality records relating to amendments, including an audit trail of amendment data, source documents, plot, proofs and correction data for each chart;

g)   Assist with the development of new or revised charting products to meet specified needs; and

h)   Maintain Standard Operating Procedures and Checklists.

Key Relationships and Interactions

The occupant of this position is required to develop and maintain close working and business relationships with originators or amendment proposals, data custodians and other staff in the AIS.

Qualifications and Experience

a) Hold or have held and ATS Licence or have other relevant aviation experience;

b) Possess and demonstrate a good working knowledge of the AIP, Civil Aviation Regulations, Civil Aviation Orders and Civil Aviation Advisory Publications; and

c) Demonstrate a good working knowledge of ICAO documentation, particularly Standards and Recommended Practices relating to the provision of charting products.

Appendix 2 – Example Time Line Planning Chart

AIS Production Schedules - April 2001 to November 2002

AERONAUTICAL INFORMATION PUBLICATION (AIP)	
	Start Date
AIP A/L 31	
AIS Cut-off	**16-May-01**
Printing	15-Jun-01
Distribution	29-Jun-01
28 Days AIRAC Notice	13-Jul-01
Effective Date	**9-Aug-01**
AIP A/L 32	
AIS Cut-off	**29-Aug-01**
Printing	27-Sep-01
Distribution	12-Oct-01
28 Days AIRAC Notice	2-Nov-01
Effective Date	**29-Nov-01**
AIP A/L 33	
AIS Cut-off	**21-Jan-02**
Printing	19-Feb-02
Distribution	5-Mar-02
28 Days AIRAC Notice	20-Mar-02
Effective Date	**18-Apr-02**
AIP A/L 34	
AIS Cut-off	**15-May-02**
Printing	14-Jun-02
Distribution	28-Jun-02
28 Days AIRAC Notice	12-Jul-02
Effective Date	**8-Aug-02**
AIP A/L 35	
AIS Cut-off	**28-Aug-02**
Printing	26-Sep-02
Distribution	11-Oct-02
28 Days AIRAC Notice	1-Nov-02
Effective Date	**28-Nov-02**

Appendix 3 – Example Error Tracking Form (ETF)

No.000/01

This form is to be completed for each NOTAM or AIP SUPP issued to correct errors in AIP package.

Description of error:	
Affected documents(s):	
Notified by:	
Cause & analysis:	
Corrective action taken:	
Comments:	

Notes for completion:

The <insert the position responsible> will:

a)   Confirm the error; raise, number and register an error tracking form;
b)   Analyse the safety aspects associated with the error and determine if NOTAM or other action is appropriate;
c)   Initiate a NOTAM/AIP SUPP correction action, and process through NOTAM officer/NOF; *(attach a copy of the NOTAM request to this tracking form)*
d)   Analyse the cause of the error;
e)   Discuss the error with the officer responsible for the document;
f)   Determine remedial action;
g)   Brief Manager, AIS as necessary;
h)   Initiate required change action required;
i)   Amend or establish procedures as required to strengthen processes;
j)   Sign-off this form as completed;
k)   File the completed form.

The <insert> officer will assist the <insert from above the position responsible> to determine appropriate action, analyse the cause of the error and propose changes to procedures. Tasks involved may include:

a)   Establishing the audit trail for the data;
b)   Analysing the safety aspects associated with the error and determine if NOTAM or other action is appropriate;

       c)   Investigating the cause of the error; and

       d)   Proposing changes to Standard Operating Procedures.

Appendix 4 – Example Error Tracking Form Register

AIS Register of Error Tracking Forms (ETF) - 2002

Reg. No	Description of Error	Document(s) Affected	Corrective Action taken	Date
001/01				
002/01				
003/01				
004/01				
005/01				
006/01				
007/01				
008/01				
009/01				
010/01				
011/01				
012/01				
013/01				
014/01				
015/01				
016/01				

CHAPTER 1

PART 3 –

QUALITY ASSURANCE (QA)

IMPLEMENTATION PLAN

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Table of Contents

1. Introduction

This document presents an outline of issues that should be considered in the preparation of a plan to implement a Quality Assurance (QA) system within an AIS unit, the aim being to register for compliance against the ISO 9002 Standard.

2. Document Structure

Content	Purpose
Overview of the planning approach	Provides an initial checklist of principal issues to be addressed in chronological order.
Implementation Plan Checklists	Checklist of items consistent with the generic project plan
Implementation Plan Proposal template	A template of a high level proposal to initiate a project to implement QA within an AIS department.
Useful Tools	Example forms providing support to appropriate elements of the implementation plan, *e.g.* process analysis form.
Sample Quality System Elements	Example document contents.

3. How To Use This Document

By following the document in sequential order the essential elements of the implementation process will be addressed.

The approach overview serves two purposes:

    a)   provides a breakdown of the main tasks; and
    b)   can be used as a primary checklist

For the preparation phase, a template has been provided to create a high level proposal that, can be used to initiate the programme (by submitting to senior management for commitment to the project)

The template is followed by a series of checklists that are consistent with the generic project plan provided in the USEFUL TOOLS section. These checklists identify the tasks to be undertaken during the implementation programme and can be useful in monitoring project progress.

The generic project plan is one of the Useful Tools and is available as an electronic MS Project file for the user to adapt according to local requirements.

The final section contains a number of example documents from Quality Management Systems. Again these items can be modified by the user by using the accompanying electronic files.

4. Electronic Version Of This Document

This document is also provided in electronic form on the accompanying diskette.

File name: **Planning Outline for QA Implementation.doc**

File name: **Generic AIS QA Project.mpp**

Hidden Text

> *The text highlighted in blue italics within the electronic document is "hidden" text.* **Be aware that the visibility of the hidden text will be dependent on the TOOLS menu default setting in the configuration of MS WORD on the machine being used to read the file.**
>
> *There are 2 options :-*
>
> *1. To see hidden text on the screen use the following MS WORD menu selection:-*
>
> > *TOOLS*
> > *OPTIONS*
> > > *VIEW*
> > > > *tick the appropriate box.*
>
> *2. To include hidden text in the printed document:- use the following MS WORD menu selection:-*
>
> > *TOOLS*
> > > *OPTIONS*
> > > > *PRINT*
> > > > > *tick the appropriate box.*

Guidance and further explanatory comments have been added to many of the points in the planning document. These comments have been formatted as "hidden text " so that the document can be printed as a template of checklists without the explanatory material, if necessary.

Document Navigation

External links within the document provide additional functionality in accessing the supporting project plan file which the user can tailor to the requirement. These links and other internal navigation links are identified by ***red italics*** and have also been formatted as hidden text.

Note: In order to preserve embedded external links within this document when copying the "Planning outline for QA implementation" file to another directory, ensure that the following files are also copied to the same location:-

Generic AIS QA Project.mpp .... Project plan Gantt chart requires **MS PROJECT 98.**

Inventory State Procedures.doc

5.   Approach Overview

INITIAL PLANNING CHECKLIST			
PHASE		**Check Item**	**Sections**
PREPARATION	**Establish project team, target dates and resources.**		0
	Produce a high level proposal for management support.		0
	Management decision to implement ISO 9002.		
PLANNING	Review current processes and evaluate against requirement of standard		0
	From the assessment develop a plan and schedule for development and implementation for each of the elements of the quality system.		
DESIGN	High level design followed by the development and documentation of the unit processes.		0
TEST	**Deployment of processes with associated training and briefing sessions.**		0
	Preliminary audit programme to validate effectiveness of the quality system against the Standard.		0
REGISTRATION	Operation and fine tuning of the quality system and registration assessment.		0
POST REGISTRATION	Once the quality system is implemented and operational, continue to identify and establish suitable aspects within the working quality system that can be used as measures to monitor the system performance and assist with identifying improvement.		

The shaded area above refers to those phases described on the accompanying generic project plan Gantt chart.

6.   Preparation

A basic plan is needed which provides a first appraisal of the current organisation requirement, resources available and other resources needed.
Use the following checklist to research information and then complete the proposal template in Section 11.

Item	PROGRAMME INITIATION	Check Item
1	**Management Support**	
2	**Internal Resources and Budget**	
3	**External Support/Effort Needed?**	
4	**Target Date to be met for Registration**	
5	**Scope** **1. Activity** **2. Location**	
6	**Project Leader and Team**	

7	Resources	
8	Contact with Registration Organisations	
9	Complete and Submit QA Implementation Proposal	
10	Programme Launch	

7. Planning - QA Requirement Phase

Determine Department Organisation Structure, Roles and Responsibilities

Item	MANAGEMENT ORGANISATION STRUCTURE 4.1	Check Item
1	Prepare Organisational Perspective	
2	Unit Structure	
3	Personnel Responsibilities	

Determine Documentation Requirements and Control Processes

Item	QUALITY SYSTEM DOCUMENTATION 4.2	Check Item
1	Quality Policy	
2	Management Organisation	

3	**Quality Manual**	
4	**Training Records**	
5	**Forms**	
6	**Document Control Process**	

Identify Procedures

Item	IDENTIFY PROCEDURES 4.9	Check Item
1	**Process Mapping**	
2	**Gap Assessment**	
3	**Procedures List**	
4	**Compare Proposed Procedures with Training Requirements**	
5	**Prepare Procedure Development Plan**	

Example Process form 0

System Awareness Programme

Item	QUALITY AWARENESS TRAINING 4.18	Check Item
1	**Generating Quality Awareness** *Whole department briefing on basic quality. Consideration should be given to the size of the group. It may be advisable to conduct separate courses.*	
2	**System Deployment Briefing**	
3	**Reviews and Repeats**	

8. Design Phase

Develop Procedures

Item	PROCESS PROCEDURE DEVELOPMENT 4.9	Check Item
1	**Procedure Structure**	
2	**Amend Existing Procedures**	
3	**Develop New Procedures**	
4	**Identify Quality Measures**	

Training Plan

Item	TRAINING PLAN 4.18	Check Item
1	Develop Procedures for Identifying Training	
2	Develop Procedures for Providing Training	
3	Develop Procedures for Keeping Training Records	
4	Create A Training Record Form or Template	
5	Establish A Training Plan for Each Job Profile	
6	Quality Training Plan	

Internal Auditing

Item	INTERNAL AUDITS 4.17	Check Item
1	Develop Procedures	
2	Selection of Internal Auditors	
3	Internal Auditor Training	
4	Create Documentation	
5	Internal Audit Plan	
6	Establish Reviews	

Corrective and Preventive Action

Item	CORRECTIVE and PREVENTIVE ACTION 4.14	Check Item
1	**Develop Procedures**	
2	**Create Forms Required**	
3	**Create Log to Monitor Status of Actions**	

Document Control

Item	CONTROL OF QUALITY RECORDS 4.16	Check Item
1	**Develop Procedures**	
2	**Create Document Change Request Form**	
3	**Establish Controlled Documents Master List**	
4	**Document Control Awareness**	

9. Test Phase

Item	QS DEPLOYMENT and VALIDATION	Check Item
1	**Brief Staff and Inform of Start Date**	
2	**Issue and Implement Procedures**	
3	**Conduct Internal Audits to Plan**	
4	**Establish Corrective and Preventative Action Reporting**	
5	**Develop Service Level Agreements**	
6	**Conduct Internal Audit of Management System**	
7	**Registration ISO Audit Process**	

10. Registration Phase

Item	ISO AUDIT PROCESS	Check Item
1	**Operate and Fine Tune the Declared Management System**	
2	**Pre-Assessment**	
3	**Corrective Action Arising from Pre-Assessment**	
4	**Registration ISO Assessment**	
5	**Post-Assessment Corrective Action Plan**	

11. Proposal Template

**PROJECT
PROPOSAL**

**QUALITY
ASSURANCE
IMPLEMENTATION**

State Administration:

Document reference: ____._____   Date:

CONTENTS

1. INTRODUCTION

The inclusion of the following requirements for Quality Assurance (QA) systems in ICAO Annex 15-*Aeronautical Information Services*, and the establishment of an associated CIP Objective, has identified the requirement for the implementation of ISO 9000 Quality Assurance activities in the National Aeronautical Information Services.

3.1.7   An aeronautical information service shall receive and/or originate or assemble, edit, format, publish/store and distribute aeronautical information/data concerning the entire territory of the State as well as areas in which the States is responsible for air traffic services outside its territory. Aeronautical information shall be published as an Integrated Aeronautical Information Package.

3.2 Quality System

3.2.1   Each Contracting State shall take all necessary measures to introduce a properly organized quality system containing procedures, processes and resources necessary to implement quality management at each function stage as outlined in 3.1.7 above. The execution of such quality management shall be made demonstrable for each function stage, when required.

3.2.2   **Recommendation**.- The quality system established in accordance with 3.2.1 should be in conformity with the International Organization for Standardization (ISO) 9000 series of quality assurance standards, and certified by an approved organization.

Note--- International Organisation for Standardization (ISO) 9000 series of quality assurance standards provide a basic framework for the development of a quality assurance programme. The details of a successful programme are to be formulated by each State and in most cases are unique to the State organization.

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2. OBJECTIVE

In order to meet the AIS CIP Objective which calls for States to achieve registration to the ISO 9000 series of QA Standards by 2003 the following proposal outlines the plan to implement a quality management system within the AIS and complete the registration to ISO 9002 by the stated target date. ISO 9002 has been identified as the ISO standard most appropriate for AIS.

3. SCOPE

The programme described will implement Quality Assurance for the following AIS activities within the administration:

The implementation will extend to the operation of these activities at ..

4. BENEFITS

The implementation and operation of quality measures in the form of a quality management system will bring improvements in efficiency and reliability with subsequent enhancements to productivity, safety and service levels.

5. PROGRAMME DESCRIPTION

The programme tasks can be broken down into four principal phases:

    1)   Planning - QA requirement in the specified AIS areas;
    2)   Design of the quality system;
    3)   Deployment and test of the quality system;
    4)   Final adjustment and audit for ISO registration.

5.1 Planning - QA requirement
The objective of this phase is to establish for each of the operational AIS processes being involved:

    a)   the associated roles and responsibilities;
    b)   the necessary procedures to effect the processes identified;
    c)   the necessary documentation.

A key feature of this phase will be the gap assessment to identify where there is a need to develop and extend procedures to meet the requirements of the ISO 9002 standard. It will also be necessary to initiate an awareness programme in order to gain support for the initiative at all levels.

5.2 Design
In this phase it is necessary to identify where new procedures are required and ensure consistency with existing ones. To develop training plans, system audit planning and establish the management review process. Key to this phase will be the documenting and creation of the necessary forms to fulfil the quality record requirement.

5.3 Deployment
As the quality system develops the procedures need to be issued and the system implemented such that the process can be tested and checked for correct function. Discrepancies will be dealt with through the corrective action and follow-up action procedures, the aim being to validate the system in preparation for the formal, external audit process necessary for registration.

5.4 Registration

The final phase represents the on-going working quality system which will be operated for a period before the registration assessment. This provides an opportunity for the fine tuning of quality system elements. Note that the timescale for this phase extends beyond the assessment date in order to accommodate any corrective action issues that may arise from the registration audit.

Target date to be met for registration

6. PROJECT PLAN

The following is a high level schedule of the programme showing a proposed total implementation timescale of   months.

QA IMPLEMENTATION PHASES	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1. Planning				
Requirement assessed				
2. Design				
Quality system deployment				
3. Test				
System operational				
4. Registration				
Registration assessment				
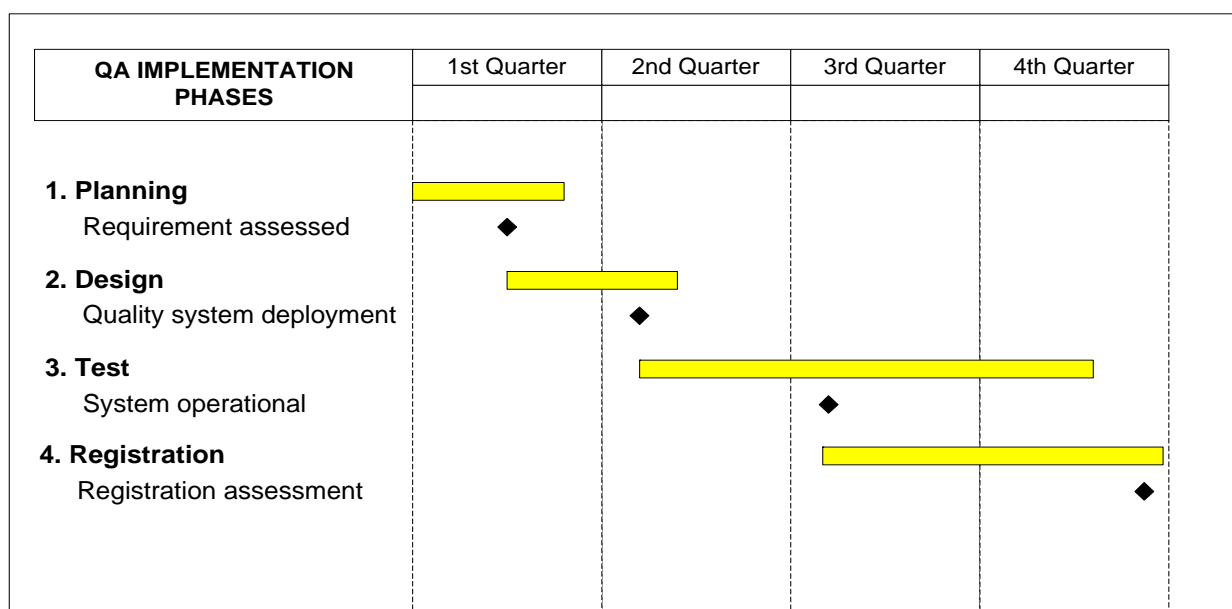
Note: Gantt chart normalised to 12 months

7. PROJECT TEAM

The following personnel are proposed to comprise the implementation project team. An assessment of effort required is included.

PROJECT TEAM			
Name	**Role**	**Skills / department represented**	**Estimated effort required**
	QA Project leader		
	QA committee		

	QA *committee*		

8. RESOURCES

The introduction of a quality system should not create new employment posts but is expected to increase work responsibilities, particularly during the development of the system. The following is an estimate of the effort required for the specified tasks, the majority of which can be provided internally for the development of the necessary documentation.

The cost of external support has to be considered against the saving in internal effort by correctly interpreting the requirement in the earlier stages of the programme, and providing assistance with the assessment of the quality system once operating prior to registration audit. Budget allocation will need to be considered for support from external consultancy.

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Internal:

INTERNAL EFFORT	
Task	**Estimated effort (man days)**
Process analysis	
Procedures development	
Documentation control	
QA training	
Internal auditor training	

External

EXTERNAL EFFORT		
Task	**Estimated effort (man days)**	**Cost**
Interpretation of requirement against standard ISO 9002		
QA awareness training		

Internal Auditor training		
Pre-registration audit		
OTHER SUPPORT COSTS		
Item	**Purpose**	**Cost**
ISO Registration fee	Professional registration organisation	

9. DELIVERABLES

The project objective is to establish a quality system that meets the requirements of the ISO 9002 standard. The following are considered to be essential elements of this process.

- ❑ Quality policy

- ❑ Documented procedures

- ❑ Training plan

- ❑ Audit plan

- ❑ Management review plan

- ❑ ISO 9002 registration

10. REFERENCES

1.   ICAO Annex 15-Aeronautical Information Services (Chapter 3, Section 3.2 Quality system);

2.   An Introduction to ISO 9000 Quality Management Systems for Aeronautical Information Systems (QA Workshop IANS - 1999).

- END -

12. USEFUL TOOLS*Planning Matrix*

Document Type	Analysis	Definition of Process	Implementation	Review	Total *(days)*
Quality Policy					
Quality Manual					
Procedures					
Instructions					
Document Templates					
Checklists					
Forms					

Process Documentation Planning Requirements

Process	Document Name	Document Type	Author
Planning audits	Planning an Internal audit **Annual audit schedule**	Procedure **Form**	
Conducting audits	Conducting an internal audit **Audit checklist** **Audit trail** **Non-conformity report**	Procedure Checklist Form **Form**	
Management Review	Meeting agenda Meeting minutes Action list	Form	

Example Process Description Form

Unit :	
Developer Name:	
Date :	

PROCESS:	
Application Area:	

Process Description	**Name:**
Forms	

Work instructions

Process Inputs	Process Entry Criteria
Process Outputs	**Process Exit Criteria**

Procedures List

Procedure Name/Identifier	ISO 9002 : 1994 Reference		Check Item
	Contract Review	4.3	
	Document and Data Control	4.5	
	Purchasing	4.6	
	Customer Supplied Product	4.7	
	Identification and Traceability	4.8	
	Process Control	4.9	
	Inspection and Testing	4.10	
	Inspection and Test Status	4.12	
	Control of Non-Conforming Product	4.13	
	Corrective and Preventive Action	4.14	
	Handling, Storage, Packing and Delivery	4.15	
	Control of Quality Records	4.16	
	Internal Quality Audits	4.17	
	Training	4.18	
	Servicing	4.19	
	Statistical Techniques	4.20	

Note: This form will be updated on introduction of ISO 9001:2000

Service Level Agreements

<u>Requirement</u>

A service level agreement is typically needed where processes span two or more internal organisations or where the absence of such a defined operational interface may adversely affect the quality of the product or service provided.

Criteria guideline

An agreement that defines the following aspects of the interface:

Organisational relationship	Include the charters of both customer and supplier.
Scope	Reference services to be provided by the supplier in the agreement. If there are service areas that fall outside the agreement these should be identified within the scope.
Responsibilities	Both customer and supplier personnel responsible for the review and approval of the agreement.
Point of contact	Clearly identified point of contact from each member of the agreement.
Expectations	Detail and list service and product expectations, *e.g.* timeliness of service and quality of deliverables.
Process	Reference to those procedures and work instructions relevant to the relationship defined in the agreement.
Constraints	Define any constraints on the members of the agreement that may affect the performance.
Deliverables	Clearly defined deliverables between members of the agreement, including any necessary approval controls or assessment criteria.
Special cases/complaints	Suitable procedures should be in place to address issues that fall outside of the agreed specification of the relationship.
Performance monitor	Reviews conducted by supplier and customer - type and frequency to be agreed.
Charges	

13. SAMPLE QUALITY SYSTEM ELEMENTS

The following pages provide guidance on specific elements identified in the implementation plan template that will assist the user in defining or developing those aspects relevant to the users operation.

Document management system requirements

The document management system must be able to provide the following feature capabilities. Those identified with an asterisk indicate that this is an essential requirement. All others, while not essential, are considered beneficial/desirable.

❑ *Unique identification of all documentation / data;

❑ *Issue and version status of the document / data;

❑ Source/origin, author/owner of the document/data;

❑ *Impact assessment source/responsibility (where applicable);

❑ *Number of copies held;

❑ *Distribution – location/holder of each document/data copy held;

❑ *Identification of any extracted data & where held/located;

❑ *Recording the processing of Change Request and the updating of procedures;

❑ *Recording the processing of Problem reporting and the closure/progress of corrective actions;

❑ Ability to highlight (flag) overdue actions;

❑ Tracking of customer feedback/satisfaction performance reporting;

❑ Provision of routine trend analysis reports;

❑ Management of the management system audit plan;

❑ Management Reviews – action progressing and closure of actions.

Procedure Structure

The Procedures contained within the documented management system, should be as consistent as possible. A suggested outline of the procedure structure content is provided below:

Process/Procedure Title: This being the subject / topic covered by the procedure.

Procedure 'Owner': This being the individual or function with responsibility for the process.

Objective: This should briefly describe what the process / procedure is trying to achieve.

Scope: The scope should define what is applicable and the limitation (if any of the procedure).

Responsibilities: This section should briefly define the responsibilities of the key functions involved in the procedure.

Introduction: Optional. A procedure may benefit from a brief introduction, but this is not essential.

Contents List: Optional. This being a list of contents of the document.

Process Overview: This section should provide a high level end-to-end overview of the key activities / steps contained within the process lifecycle.

Detailed Process: This section should define the detail of the process activities, to the extent that the absence of these could be potentially detrimental to the completion of the activity being performed.

It should identify; the key activities /steps within the process, the requirements that must be met, responsibility for achieving these and supporting guidance notes, to the degree necessary to ensure that the activity can be performed.

Document Control Elements: This information supports the identification of the procedure including the document number, issue number, approval and amendment records.

Related Documents: This section should list should list the related documents, forms, etc., referred to within the content of the procedure and which are necessary to complete the process being described by the procedure.

Definitions: Technical terms, abbreviations and acronyms used in the document.

Appendices: These would typically contain supporting information necessary to complete the process.

Note: References to departments, sections, functions, etc. should be used wherever possible and the use of personal names and telephone numbers within the content of the procedure should be avoided. Should the latter change it will require an amendment update to the procedure.

Typical management system review agendaThe management system review should consider, but not be limited only to the following topics:

❑   Outstanding actions from previous review meetings;

❑   Overall service/product delivery performance and customer feedback;

❑   Management system audit observations;

❑   Follow-up closure/escalation action of any outstanding observations;

❑ Outstanding non-conformance's i.e. Problem Reports, Change Request etc.;

❑ Performance to Service Level / Interface Agreements – both internal and external;

❑ Adequacy of support Contracts with suppliers / contractors (where applicable);

❑ Regulatory and Statutory issues,
❑ Staff Training and skills development – *(*

❑ Resources.

❑ Proposed business process improvement activities.

- END -

CHAPTER 2

SELECTION AND TRAINING GUIDELINES FOR AERONAUTICAL INFORMATION SERVICES (AIS)

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Table of Contents

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1. Introduction

This part of the Guidance Manual for Aeronautical Information Services (AIS) in the Asia/Pacific Region has been developed to provide States with guidance material for the selection and training of AIS personnel.

The guidance material is not intended to be prescriptive and may be used as a guide when States are developing their own individual selection and training material.

2. Selection Principles

Recruitment and selection of staff for the AIS should be made based on merit and relative efficiency, the requirements of the position, in fair and open competition to ensure that the best qualified applicant gets the job.

In assessing the relative efficiency of candidates consideration should be given to the abilities, qualifications, experience, standard of work performance and personal qualities of each applicant, to the extent that those matters are relevant to the efficient performance or potential to efficiently perform the duties.

3. The First Step

A number of documents must be in place before the Selection Process can commence to clearly identify the work to be done. Normally these would consist of:

      a)   Position Description;

      b)   Duty Statement; and

      c)   Selection Criteria against which applicants will be assessed.

The Position Description and the Duty Statement set the scene about what the position is required to do, what the reporting arrangements are, and how the position fits in with the other work areas.

The Selection Criteria is the part that sets out how the applicants will be measured for the job of work to be done.

4. The Selection Process

A Selection Committee will usually be established with a minimum of two people to determine the most suitable applicant.

When necessary, a shortlist of applicants most suitable for further consideration may be made by the committee based on claims against the selection criteria and/or on referee comment.

When there is only one applicant for the position the applicant may be recommended for direct promotion or employment without the establishment of a Selection Committee.

The Selection Committee should decide the procedures to be followed and the sources of information to be used in assessing applicants against the selection criteria. Sources of information may include:

    a)   application;

    b)   interview;

    c)   referee reports;

    d)   work samples; and/or

    e)   performance tests.

The Selection Committee is responsible to ensure that the field of applicants is of sufficient calibre for assessment to proceed. The procedures that the Selection Committee follows will enable a thorough investigation of the claims and merits of the applicants to be assessed against the selection criteria.

The selection report will provide an accurate account of the Committee's assessment of applicants and enough information for the decision-maker to make a decision. The report will be used as the basis for counselling unsuccessful employees and for review requests arising from the selection decision.

An appropriate delegate will usually formally approve the Selection Committee's recommendation.

All unsuccessful applicants interviewed for the job should be notified in writing of the outcome and should be given the opportunity to obtain verbal feedback on their performance if they so desire. Applicants not listed for interview should be advised accordingly.

5.   Training and Training Courses

Following a selection process, AIS training is separated into a number of distinct stages.

Stage 1 deals with "core skills" and the focus is on the new entrant becoming familiar with the purpose, role and responsibilities of AIS.

Stages 2 and **4** are assessments that follow the Core Training and On-the-Job Training (OJT).

Stage 3 covers topics related to OJT.

Stage 5 covers more advanced training and is applicable to staff who have been working in the AIS for more than a few months.

The training process is depicted in the following table.

Stage	Description
	New Entrant Selection
1.	Core Training
2.	Training Assessment
3.	Area Assignment - Task Specific OJT
4.	Performance Assessment
5.	Career Development

A flow chart showing the various stages in the Selection and Training Process is shown in Appendix 1.

Base entry-level positions in some AIS may be as cartographic and/or Air Traffic Services Operations Officers, who may be responsible for matters such as NOTAM, documents, static aeronautical data and information, or operational aspects of aeronautical charts. It is unlikely that an applicant will present with a complete range of these technical skills. The normal process is therefore to advertise for, and select an applicant with the skill set most needed at the time.

Stage 1 - Core Training

New entrants will be placed in an appropriate work area, and assigned to an experienced staff member who will supervise and guide the new entrant through the more formal generic training.

This initial training requires the student to research basic reference documents and then undergo an assessment to confirm that the required levels of knowledge have been acquired.

The assessment is designed to ensure that the student has strong understanding of the role, functions, products and structure of AIS.

A demonstrated level of competency in an assessment of "AIS Core Knowledge" will enable the new entrant to commence working with non-continuous supervision.

Each AIS should specify a time period within which the Core Training will be completed as part of the overall training plan.

<u>AIS Core Knowledge</u>

A list of AIS Core Knowledge and the associated reference documents is shown in the following table.

Topic	Reference Document
Legislation and legal charter	National legislation, DOC 8126, Annex 15
Responsibilities, status, functions, scope, and purpose of an AIS	DOC 8126, DOC 7192, Annex 15, AIP
Quality systems	Annex 15, Annex 11, ISO 9000 series
Origin of aeronautical information and collection of information	DOC 8126, AIP
AIS organisation	Internal Organisation Chart, DOC 8126, AIP
AIS relationships with internal and external stakeholders, clients and author areas	AIS Quality Manual, AIS Business Plan
AIRAC	DOC 8126, Annex 15, AIP
AIP/AIP SUP/AIC	DOC 8126, Annex 15, AIP
NOTAM	DOC 8126, Annex 15, AIP
Codes	DOC 8126, 7910, 8585, 8400, 7383, 8643, Annex 15,AIP.
WAC and aeronautical charts	DOC 8697,Annex 15, Annex 4, AIP
The integrated AIP	DOC 8126, AIP
Integrated Automated AIS Systems	DOC 8126
Windows NT (or other operating system) - file management and file transfer	Users Manual
Word processing	Users Manual
Database	Users Manual
Spreadsheet	Users Manual

Stage 3 - Task Specific Training

On-the-job training supports new entrant training Stage 2 and any training provided to staff moving to a new work group.

A more experienced officer from within the work group provides on-the-job training. This training is informal and seeks to assist the new member to adjust and become familiar with standard operating procedures, work processes, job norms and data structures as they relate to a particular job function within AIS.

An exception to this practice is for those staff members who, in the course of their duties, will issue NOTAM. When required, new entrants may undertake NOTAM office specific training at an International or other NOTAM office.

The topics listed below represent some of the subject matter that will be covered in on-the-job training. Not all topics need to be covered for each new entrant.

On-the Job Training (OJT) Topics

> ICAO documents
> AIS Products
> Change Management
> Standard Operating Procedures
> Quality Processes
> Checking procedures
> Branch Policies & Procedures
> Network configuration of DTP
> File Management within DTP
> File Management within CAD
> Record Keeping
> AIP Data Structures
> Relationships with external agencies
> Responsibilities and limitations
> NOTAM Management and Policies
> Codes Management and Policies
> Publication and production
> Distribution

Assessment of this phase of training is continuous and forms part of the performance appraisal process.

Stage 2 - Training Assessment

Training and Competency

Training

The competencies required for each position are detailed in the relevant Position Descriptions held for each of the functional areas of the AIS. From these competencies, and initial and regular assessments of performance, training requirements for individual staff are identified.

a)   Newly Appointed Staff

The training requirements for newly appointed staff are identified in consultation with the staff member and implemented as a Training Plan. The Training Plan will identify all relevant items for which training is required, a time-frame for the completion of each item (either due date or period) and when appropriate, any required achievement level.

As training items are completed, completion is recorded on the Training Plan. A copy of a sample checklist is shown at Appendix 2. A sample form for trainee assessment debriefing is also at Appendix 3.

b)   Current Staff

Training programs should be developed by the Manager, AIS for on-going training to keep staff current with practices applicable to the position and to ensure all incumbents are trained to meet the requirements shown in the Position Description and Duty Statement.

This may be carried out as part of the annual Performance Assessment with any identified training requirements recorded in the Personal Development Plan. Details of the completion of training for all staff; both newly appointed and current, should be made in the staff members file.

Competency

a)   Newly Appointed Staff

New appointees to any position are required to demonstrate experience and competency appropriate to the position being filled. Initially, this will be determined through the recruiting process.

The performance of newly appointed staff members should be reviewed within 3 months of appointment. This requirement will normally be met by reviewing the results of day-to-day work and the completion of Training Plan items and mentor reports.

If at the completion of all Training Plan items, or the completion of the first 3 months of employment (whichever is the latter), the staff member has demonstrated an appropriate level of competency, they will be considered to be current staff. From that time, they will be required to meet the competency requirements for current staff. A sample Grading Criteria for competency is at Appendix 4.

b) *Current Staff*

To remain competent, staff members should carry out their specified responsibilities at least once every three months or other suitable interval, depending on the nature of the work being performed. Because of the on-going and regular nature of their work, staff will normally satisfy this requirement through their day-to-day work.

Where a current staff member is absent for a period exceeding 3 months, their performance should be reviewed during the month of recommencement of work, or until such time as they have demonstrated an appropriate level of competency. The performance attributes to be reviewed will depend upon the position held, the length of their absence and the nature of work currently in progress. These should be determined by mutual agreement with the staff member concerned. A sample Grading Criteria for competency is at Appendix 4.

<u>Competency Records</u>

Details of competency reviews should be held on individual staff member's files.

Stage 4 - Performance Assessment

Regular Performance Assessment should be completed for all staff. Performance reviews should include:

a) The establishment of performance objectives for the next period (year);

b) A review of the staff members performance against objectives for the review period; and

c) Identification and agreement of any training required.

Details of Performance Agreements and Performance Appraisals should be held on individual staff member's files.

A sample Performance Appraisal form is shown at Appendix 5.

Stage 5 - Career Development

There is no specific course designed for this segment of AIS training.

Computer hardware and software applications training is provided as needs are identified.

This policy is followed throughout the career of an AIS staff member, in terms of providing refresher and advanced applications training. Such courses are not limited to computer applications. By necessity, they include training in both general and quality management techniques and philosophies.

These courses may sourced from firms' external to the parent organisation on an as required basis. Staff should be encouraged and supported in their endeavours to obtain skill enhancements in their own time. This may include acquisition of tertiary or technical skills.

Appendix 1 - Sample Selection and Training Process

Selection

Probationary Period

Core Training

Assessment

Fail → Pass

Area Assignment

Assessment

Fail → Pass

Workstream

On Going Assessment

Unsatisfactory → Satisfactory

Career Training
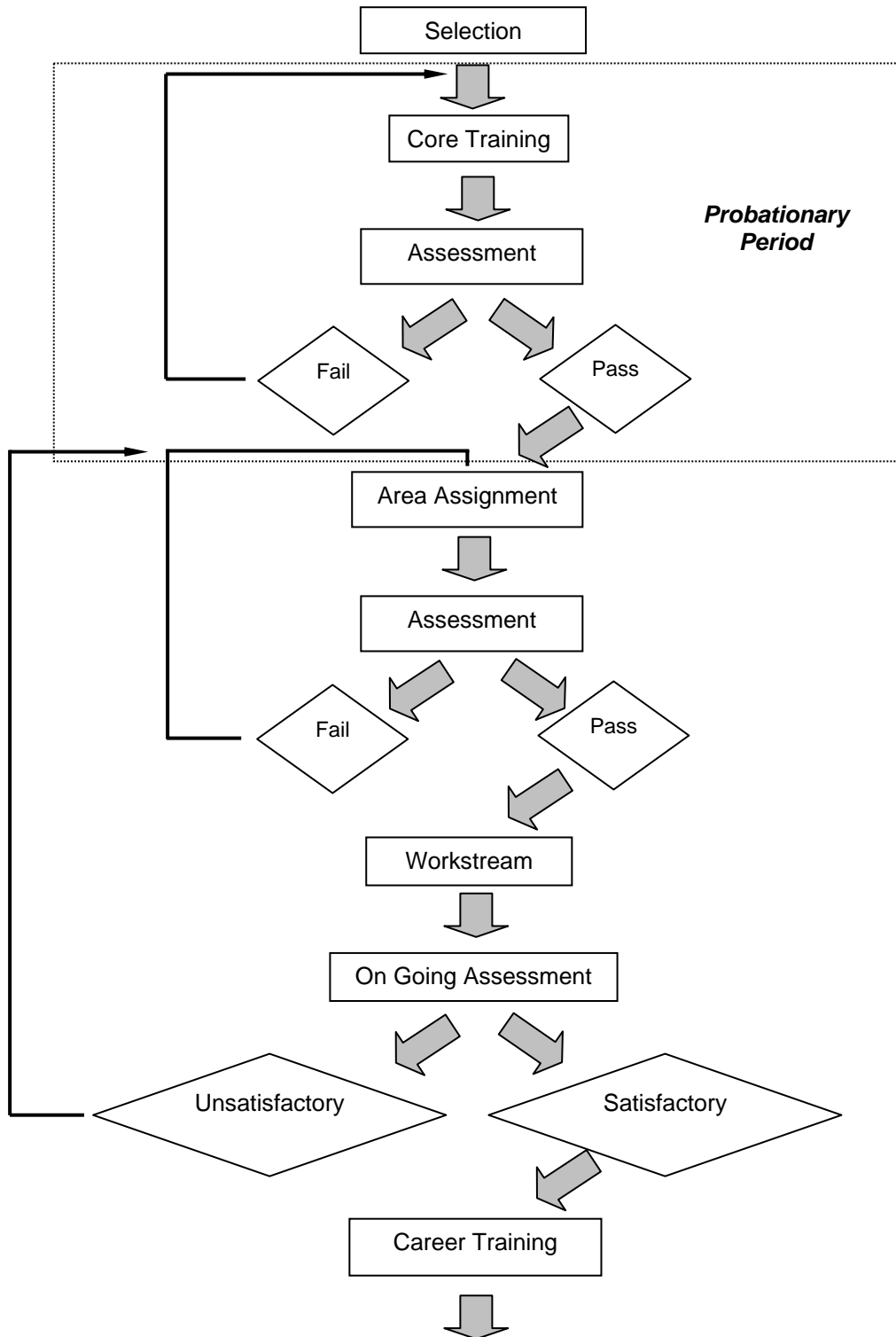
Appendix 2 - Sample Training Checklists

Computer Operation Checklist

Topics	Competent (Yes)	Date	On the Job Training Instructor Initials	Individual Undertaking Training's Initials
Log On/Password				
Read Message				
Print Message				
Refile Message				
Create Message				
Answer sender/all				

Fault Reporting Checklist

Topics	Competent (Yes)	Date	On the Job Training Instructor Initials	Individual Undertaking Training's Initials
Fault Reporting – Team Leader on duty				
Fault Reporting - Outside Team Leader hours				

Local Arrangements Checklist

Topics	Competent (Yes)	Date	On the Job Training Instructor Initials	Individual Undertaking Training's Initials
Temporary Local Instructions(TLI) record				
Workstation Information Book				
Database Change Procedures				
Personal Recency Record				
Military Flight Information Service				
Airspace and Location Geography				
Military Prohibited, Restricted and Danger Airspace Groups				
Location for International Issue of NOTAM				

Disaster, Contingency and Evacuation Checklist

Topics	Competent (Yes)	Date	On the Job Training Instructor Initials	Individual Undertaking Training's Initials
Warning Message				
Evacuation Message				
Evacuation Actions				
Assembly area				
Disaster Recovery Plans Plan Documentation & Checklists				
Disaster Recovery Plans Actions				

Appendix 3 - Sample Trainee Assessment Debrief Form

Week:

Trainee:	Instructor/Training Officer:	Position:	Date:

Pre-flight Briefing and Flight Plan Acceptance   1 2 3 4 5

Understanding of briefing material

Clear understanding of pilots requirements

Correctly handles data errors and omissions

Understanding of Flight planning requirements (Domestic/International)

Aware of technical elaboration responsibilities

Application of standard briefings

Flight Plan Processing and Message Handling   1 2 3 4 5

Correct endorsement of processed messages
Correct message addressing
Standard flight plans
Uses correct procedures
Timely and accurate message distribution
Efficient use of PDAIs
Military addressing
ZP procedures

Phraseologies and Communications   1 2 3 4 5

Uses standard phraseologies   Clear concise delivery
Adjusts briefing style to suit recipient   Confident delivery, adlibs as required

Equipment Handling   1 2 3 4 5

Briefing system   Phone/PABX   Fax
Fault reporting   Frequency management

Airspace/Geographical Knowledge   1   2   3   4   5

Classes of airspace   Prohibited, Restricted and Danger areas
Areas of responsibility   Locations

Documents and Local Procedures   1   2   3   4   5

Knowledge of briefing documents   Local instructions
Maps and Charts   Disaster recovery

Coordination   1   2   3   4   5

Coordination   Handover/takeover   Other agencies
Off normal situations   Keeps Supervisor informed

Workload Management   1   2   3   4   5

Prioritises tasks   Speed and accuracy   Keep Supervisor informed

---

Teamwork

Co-operation & teamwork

Customer Service

Public relations   Politeness   Enthusiasm

Trainee Comments

Training Officer Comments

Areas identified as requiring more work

Action plan for remedial training

Trainee's Signature & Date   **Training Officer's Signature & Date**

This signifies agreement with the remedial program by both parties

Training Evaluation Feedback Form

Instructions for using this form:

- This form is to be filled out:
− at the end of each week of training

*For Weekly Assessments***:**

- A grading of 3 – 5 shall be considered as satisfactory.

- A grading of 1 or 2 shall be considered as unsatisfactory and a remedial action plan shall be implemented.

-
  *For Milestone Assessments***:**

- A grading of 3 – 5 shall be considered a pass

- During a Rating assessment, a non-pass grading (i.e.: 1 or 2) shall indicate that a formal remedial plan may be required (subject to managerial approval). After the remedial action and following a second assessment, failure may result in recommendation for termination.

Appendix 4 - Competency Areas : Sample Grading Criteria

Introduction

This covers the Competency Areas, and offers suggested guidelines for grading performance when using the "Assessment Debrief Form".

Competency Areas have been divided into separate areas as shown below.

- ➢ Pre-flight Briefing and Flight Plan Acceptance
- ➢ Flight Plan Processing and Message Handling
- ➢ Phraseologies and Communications
- ➢ Equipment Handling
- ➢ Airspace/Geographical Knowledge
- ➢ Documents and Local Procedures
- ➢ Coordination
- ➢ Workload Management

Competency Areas : Sample Grading Criteria

Competency Area	Grading Criteria
Pre-flight Briefing and Flight Plan Acceptance	The officer must demonstrate a thorough understanding of all-briefing material and flight planning requirements. The officer must obtain a clear understanding of the pilot's requirements, correctly handle data errors and omissions and demonstrate awareness of technical elaboration responsibilities.
Grading	1 Lack of basic knowledge and understanding of pre-flight briefing and flight plan acceptance responsibilities results in unsatisfactory performance. 3 Demonstrated sufficient knowledge and understanding of pre-flight briefing and flight plan acceptance. 5 Demonstrated a complete knowledge and understanding of all aspects of pre-flight briefing and flight plan acceptance.

Competency Area	Grading Criteria
Flight Plan Processing and Message Handling	The officer must process all flight plans and messages quickly and without error, using correct procedures, message addressing and endorsement of processed messages. The officer must demonstrate correct use of PDAIs, military addressing and ZP procedures.
Grading	1 Fails to correctly process flight plans and messages without assistance and guidance. 3 Demonstrates satisfactory ability to process flight plans and messages. 5 Flight plans and messages processed quickly and correctly at all times using correct procedures, addressing and endorsements.

Competency Area	Grading Criteria
Phraseology & Communication	The officer must use standard phrases as applicable and be able to efficiently use non-standard phrases in unusual situations with no ambiguity. The officer must be able to use clear and correct speech without long pauses, inappropriate inflections or emphasis, or clipped transmissions.
Grading	1 Poor or incorrect use of standard phraseology, resulting in indistinct and hesitant delivery. Unable to adlib without being ambiguous. 3 Standard phraseology used effectively. A basic ability was demonstrated with non-standard phraseology. Delivery was usually clear and concise. 5 Use of standard phraseology was automatic and non-standard phraseology was effectively used, resulting in clear, unambiguous delivery at all times.

Competency Area	Grading Criteria
Equipment Handling	The officer must be able to competently manipulate the equipment applicable to the operating position. The officer must be able to use backup systems in the event of equipment failure and carry out correct fault reporting procedures.
Grading	1 Unable to use essential equipment effectively. 3 Demonstrated ability to use essential equipment effectively. 5 Sound understanding and demonstrated optimum use of all equipment at all times.

Competency Area	Grading Criteria
Airspace and Geographical Knowledge	The officer must be able to demonstrate a complete knowledge of the various classes of airspace, prohibited, restricted and danger areas, and areas of responsibility. The officer must be able to demonstrate a geographical knowledge applicable to the operating position.
Grading	1 Lack of knowledge does not allow effective performance of functions. 3 Sufficient knowledge to perform job functions satisfactorily. 5 Demonstrates a thorough knowledge of all aspects of airspace layout and requirements and geographical knowledge.

Competency Area	Grading Criteria
Documents and Local Procedures	The officer must demonstrate a thorough knowledge of and compliance with all briefing documents, maps and charts, and local instructions and procedures.
Grading	1 Inadequate knowledge of or fails to comply with requirements of documents and local procedures. 3 Adequate knowledge and sufficient compliance with

Competency Area	Grading Criteria
	requirements of documents and local procedures.
	5 Demonstrated a thorough knowledge of and full compliance with requirements of all briefing documents and local procedures

Competency Area	Grading Criteria
Coordination	The officer must perform applicable coordination functions correctly in a timely manner. The officer must be able to communicate effectively with other units and agencies.
Grading	1 Coordination not completed in appropriate time, resulting in poor communications with other units and agencies. 3 Correct coordination completed in sufficient time. 5 Demonstrated complete, effective and timely coordination at all times with other units and agencies.

Competency Area	Grading Criteria
Workload Management	The officer must demonstrate the application of a logical work plan, based on current workload, so that tasks are prioritised and completed with sufficient speed and accuracy.
Grading	1 Unable to prioritise tasks effectively to cope with normal workload. Makes frequent errors. Work rate was too slow and little ability to adjust to increasing work rate was evident. 3 Ability to process information correctly with sufficient priority, speed and accuracy to cope with average workload demands. 5 Able to prioritise tasks, maintain accuracy and adjust work rate to cope with all workload demands with ease and confidence.

Appendix 5 - Sample Performance Appraisal Form

EMPLOYEE NAME:	POSITION TITLE:
BRANCH:	LOCATION:
POSITION REPORTS TO:	DATE OF APPOINTMENT:

APPRAISAL PERIOD: **FROM:** .... **TO:**...............................

INSTRUCTIONS

Performance is to be formally assessed at least once per year with a review of performance occurring at least halfway through the assessment period.

Performance should be evaluated against both annual objectives set by agreement between the staff member and manager/supervisor at the beginning of the assessment period and/or the Key Result Areas contained in the staff member's job description.

The staff member and manager/supervisor should separately complete their own assessment of performance, training and development requirements prior to the interview.

Once the appraisal comments are completed and the appraisal formally reviewed, a copy of the completed form should be forwarded for filing in the staff member's personal file.

Only two copies of the completed form are to be made. One is held by the staff member and the other on the staff member's personal file. Access is on a strict need-to-know basis. Forms are to be destroyed TWO years after the date of appraisal.

PERFORMANCE RATINGS

1.	Outstanding	Performance objectives consistently met at outstanding level.
2.	Superior	Performance objectives consistently met, frequently exceeds competent level.
3.	Satisfactory	Fully competent and performance objectives met to acceptable level.
4.	Adequate	For performance which does not always meet the required standards.
		Persons promoted to the level within the last six months and who may be regarded as novices in the role should be rated at this level.

5.	Unsatisfactory	Performance regularly falls below minimum acceptable level. Performance objectives frequently not met. Persons should be participating in discipline counselling process.

PERFORMANCE APPRAISAL

PERFORMANCE RESULTS

These are the objectives and/or key result areas which are agreed at the beginning of the assessment period. These are to be transferred from the individual performance agreement worksheet which should be attached to this document.

OBJECTIVES/KEY RESULT AREAS 1.	COMMENTS/PERFORMANCE INDICATOR	RATING
2.		
3.		
4.		
5.		
6.		

PERSONAL ATTRIBUTES

These are factors which need to be considered for individual performance and/or career development reasons - transfer development action to Page 3.

1) List those characteristics which will enhance the appraisee's successes
2) List those characteristics which require further development or strengthening

DEVELOPMENT ASSESSMENT

NAME .... *LOCATION*..

TRAINING AND DEVELOPMENT

PERSONAL DEVELOPMENT What training or development activities have been undertaken during the year? (Nominate specific programs or activities.)	
CAREER ASPIRATIONS AND PLANNING Please identify position(s) that you would see as career goal(s) and how soon you would see yourself reaching this goal.	
TRAINING NEEDS What training and development do you believe is required for you in the next 12 months?	

ORGANISATION IMPROVEMENT

1) What changes or improvements do you see or suggest in your work area or responsibilities over the next three years?	
2) How will this affect your job and/or those of your subordinates?	
3) What action would you recommend or what steps are you taking to facilitate these changes?	

AGREED TRAINING AND DEVELOPMENT OBJECTIVES FOR (period)

As a result of discussion, detail the development objectives agreed.

TYPE	TYPE/LOCATION	DATE	PRIORITY

PERFORMANCE SUMMARY

OVERALL PERFORMANCE RATING:

1	2	3	4	5

Refer to detailed definitions of
Performance Ratings on page 1.

SUPERVISOR/MANAGER COMMENTS

Comments must be related to the evaluation of performance and interview discussion.

MANAGER/SUPERVISOR   Name ....   Title ....

Signature ....   Date ....

EMPLOYEE COMMENTS

EMPLOYEE   Name ....   Title ....

Signature ....   Date ....

REVIEWER COMMENTS

REVIEWER   Name ....   Title ....

Signature ....   Date ....

CHAPTER 3

OPERATING PROCEDURES

FOR

AIS DYNAMIC DATA

(OPADD Edition 3.0)

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TABLE OF CONTENTS

Appendix A1 – System Parameters

Appendix A2 – Glossary

1 INTRODUCTION

1.1 Preface

Within the Asia and Pacific Region, the AIS-AIM Implementation Task Force (AAITF), which is a sub-group of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) ATM/AIS/SAR Sub-Group, has been monitoring the international and automation developments that relates to the NOTAM domain.

In particular, revisions to the EUROCONTROL Operation Procedures for AIS Dynamic Data (OPADD) have been tracked and compared to operating procedures used in the Asia Pacific region.

Principally, this work has been led by Japan and culminated in the fifth meeting of the AIS/AIM Implementation Task Force (AAITF/5, June 2010) where the Task Force formally agreed that EURO OPADD 3.0 excluding its Chapter 6 be adopted by APANPIRG for use as the Asia/Pacific OPADD.

Peter Hobson
Chairman of the AAITF

1.2 Context

1.2.1   The document 'EUROCONTROL Guidelines - Operating Procedures for AIS Dynamic Data (OPADD)' was developed for the benefit of the member States of the European Civil Aviation Conference (ECAC).

1.2.2   However, whilst elaboration of the document took place in the European context the world-wide implication of AIS has been borne in mind during its development. The Standards and Recommended Practices (SARPs) of the Annex 15 to the Chicago Convention on International Civil Aviation form the basis on which the Operating Procedures were detailed. Where elaboration of the definitions of the ICAO SARPs was found to be essential for the harmonised and coherent application of the Operating Procedures, these were collated to form ICAO Annex 15 Amendment Proposals and submitted to the ICAO EANPG.

1.2.3   The new version of ICAO Annex 15 and ICAO Doc 8126 (Ref [1] and [2]) reflected a number of OPADD-derived proposals. Other such proposals were however not accepted for global applicability. Edition 2 of this OPADD document reflects in its Chapter 2-NOTAM Creation and 3-NOTAM Processing those changes which were agreed globally. The changes not agreed globally have either been deleted or moved to a separate chapter at the end of the document

1.3 Purpose

1.3.1   These procedures correspond to the elaboration of the Specialist Task "Develop AIS Operating Procedures". Their objective is "*The provision of standardised*

procedures to improve the quality of AIS" and they concur with the overall objectives:

"*To promote uniformity in the collection and dissemination of aeronautical information, in the interest of safety, quality, efficiency and economy*" and,

"*To improve overall efficiency of AIS, in terms of speed, accuracy and cost effectiveness, by the increased use of automation*".

1.3.2   Whilst all ECAC States consider that they act in conformity with the Annex 15 Integrated Aeronautical Information Package provision, significant differences of interpretation of the SARPs had been identified and it was acknowledged that a common understanding of procedures for NOTAM creation was a prerequisite for successful automated processing.

1.3.3   Therefore, the Operating Procedures were developed to reach this common understanding.

1.3.4   This edition of the OPADD also provides enhanced explanations to better take account of the main deficiencies reported by users on PIB content [source: Airspace Infringements report]. Upon NOTAM creation and PIB production, awareness should be given to the following issues that have an impact on PIB readability and understanding:

- Reduction of irrelevant NOTAM: Publishing NOF not allocating proper qualifiers and rather take the default values given without taking into account actual situation as stated in item E.

- Lack of graphical presentation: description of active danger or other areas provided in numerical form (LAT/LONG) makes it difficult for pilots to understand the actual dimensions and location of the areas.

- Lack of integrated aeronautical information briefing facility: no single source (portal) for relevant information e.g. free of charge (or low cost?) on-line portal for GA pilots.

- Abbreviations: Use of national abbreviations which is not encouraged by ICAO.

- NOTAM difficult to read and to understand: Many problems are already dealt with in chapter 2 of OPADD but those rules are not consistently applied (e.g. text not clear without referring to the AIP; missing essential information e.g. which specific procedure is affected).

- Most users would appreciate a simpler NOTAM text.

1.4   Scope

1.4.1   The Operating Procedures for AIS Dynamic Data detail the procedures related to NOTAM, in general. Examples of SNOWTAM and ASHTAM as well as specific rules or guidance for harmonisation of these AIS Messages are also covered.

1.4.2   The ECAC States agree to follow them for NOTAM creation, as expressed in Chapter 2. The procedures are intended for guidance and may be implemented immediately – see applicability under 1.5.2.

1.4.3   The procedures for NOTAM creation detailed in Chapter 2 will also serve as a benchmark for the processing of incoming international NOTAM, in the sense that where incoming international NOTAM are not prepared in line with these procedures, they may be manually processed in accordance with the principles and procedures laid down in Chapter 3-NOTAM Processing. Chapter 3 is intended to be used as the default for harmonised NOTAM processing by a NOTAM Processing Unit (NPU).

1.4.4   The principles and procedures related to maintaining database completeness and coherence, along with the description of messages associated with this function, are provided in Chapter 1. These messages, such as request and reply messages are required to fulfil the maintenance function. These messages are based upon the use of AFTN, whereas the use of other communication means, using alternative formats, could be envisaged.

1.5   Applicability

1.5.1   Most changes in the guidelines are addressing procedural improvements and clarifications. Chapter 7 has been added for guidance only, however, the outlined propositions should be applied whenever possible to ensure harmonised provision of briefing services.

1.5.2   It is recommended that OPADD Edition 3.0 is implemented by the States' NOFs and relevant Service Providers (e.g. the EAD) as soon as possible. In order to ensure a harmonised application, the following common implementation dates have been established:

- Integration of procedural changes in working procedures and manuals, as required. To be implemented without delay with a recommended common application date of <u>September 2009</u>.

- Items requiring system changes (see 1.5.3) in States' systems and the EAD with a recommended common application date of <u>November 2010</u>.

1.5.3   The introduction of OPADD Ed. 3.0 will not necessitate extensive system changes as the OPADD primarily introduces procedural modifications rather than new functions. However, following subjects may need system adaptations but those are not considered critical to the overall application of the OPADD or NOTAM operations, in general:

- FL Rounding: minor system impact, operator work around is possible.

- Refinement of system messages (RQA for ASHTAM): revision to the automatic query/retrieval functions, addition of standard replies for database queries. Minor system impact as this procedure is used occasionally and operator work around maybe considered. If these messages are only manually processed, then it's only a procedural change.

- ASHTAM (auto-) processing: minor system impact.

- PIB chapter, default value set to Purpose letter 'M - Miscellaneous info': update to the default values to be applied by a briefing system; minor system impact expected as default values should be easily changeable.

1.6   Referenced Documents

The following documents were used during the production of this edition:

Nº	Title	Edition	Date
1	ICAO International Standards and Recommended Practices Aeronautical Information Services - Annex 15	Twelfth Amdt°34	22 November 2007
2	ICAO Aeronautical Information Services Manual – Doc 8126-AN/872	Sixth Amdt N°1	28 April 2006
3	ICAO Abbreviations and Codes – Doc 8400	Seventh	2007
4	EUROCONTROL Report on detailed NOTAM Processing Procedures		5 October 1996
5	EUROCONTROL Static Data Procedures	1.0	15 December 2002
6	ICAO Location Indicators – Doc 7910	Latest edition	2008
7	ICAO Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds, Appendix F - Doc 9691	Second edition	2007
8	ICAO Handbook on the International Airways Volcano Watch (IAVW), Operational Procedures and Contact List - Doc 9766	Second AMDT	05 November 2007

The following website contains the latest information related to operating procedures for AIS dynamic data:

http://www.eurocontrol.int/aim/opadd

2   NOTAM CREATION

2.1   Introduction

2.1.1   The international standard NOTAM format is contained in Annex 15 (Ref. [1]) to the ICAO Convention. It is the reference format for NOTAM and forms the baseline on which this document is developed.

2.1.2   The different types of NOTAM are identified by suffix letters 'N' (New), 'R' (Replacement) and 'C' (Cancellation) and the resulting identifier appears after the reference number as follows:

- NOTAMN (New NOTAM)
- NOTAMR (Replacement NOTAM)
- NOTAMC (Cancellation NOTAM)

Example: `A0123/08 NOTAMN`

2.1.3   Unless otherwise specifically stated in the text, the procedures described in this chapter refer to NOTAMN (New NOTAM); most of them also apply to NOTAMR and to NOTAMC.

2.1.4   However, there are some particulars specific to NOTAMR (Replacement NOTAM) and NOTAMC (Cancellation NOTAM) creation. These are described in this chapter, at paragraph 2.4.

2.1.5   This chapter contains the operating procedures to be applied for the creation of NOTAM, and provides:

- Basic rules for NOTAM creation (paragraph 2.2 refers)

- Detailed procedures relative to each NOTAM Item (paragraph 2.3 refers)

- Procedures for NOTAMR and NOTAMC creation (paragraph 2.4 refers)

- Procedures for Checklist production (paragraph 2.5 refers)

- Procedures for the publication of Permanent information (paragraph 2.6 refers)

- Procedures for Trigger NOTAM creation (paragraph 2.7 refers)

- Procedures for NIL Notification (paragraph 2.8 refers)

2.1.6   The procedures relative to the processing of NOTAM are described in Chapter 0.

2.2   Basic Rules for NOTAM Creation

2.2.1   The ICAO NOTAM format shall be strictly adhered to and the only NOTAM types allowed are NOTAMN, NOTAMR and NOTAMC.

2.2.2   NOTAM intended for international distribution shall include English text for those parts expressed in plain language.

2.2.3   Each NOTAM shall be transmitted as a single telecommunication message.

2.2.4   A NOTAM shall deal only with one subject and one condition of that subject [Note exception for Trigger NOTAM – paragraphs 2.7.2.10 - 2.7.2.14 refers].

2.2.5   Terms such as planned alternative date or alternative dates shall not be used in a NOTAM. Such dates shall be published as any normal date of activity [refer to paragraph 2.4 for NOTAMR].

2.2.6   Erroneous NOTAM shall be replaced; or they may be cancelled and a new NOTAM issued. No 'correct version' NOTAM shall be issued.

2.2.7   Renumbering of existing NOTAM (containing identical information, but with a new number) is not allowed. Renumbering at the beginning of each year is therefore also not permitted.

2.2.8   NOTAM are basically qualified according to the NOTAM Selection Criteria (NSC), as published in ICAO Doc 8126 (Ref. [2]) Chapter 6 Appendix B.

2.2.9   All published times shall be in UTC.

2.2.10   If Item C) contains 'EST', the NOTAM requires the later issue of a NOTAMR or NOTAMC.

2.2.11   A NOTAMR shall replace only one NOTAM. Both shall belong to the same NOTAM series.

2.2.12   A NOTAMC shall cancel only one NOTAM. Both shall belong to the same NOTAM series.

2.2.13   A NOTAM shall be cancelled only by a NOTAMC and never by a Checklist.

2.2.14   For NOTAMR and NOTAMC, the date/time in Item B) shall be equal to the actual date/time of creation of that NOTAMR and NOTAMC.

2.2.15   Item C) shall contain 'PERM' solely for NOTAM information that will be incorporated in the AIP. These NOTAM shall be cancelled according to the rules described in paragraph 2.6.3 when the AIP is updated.

2.2.16   Item E) should be composed by the Publishing NOF in such a way that it will serve for direct Pre-flight Information Bulletin entry without requiring additional processing by the receiving unit.

2.2.17   The following table shows the necessary data Items for each NOTAM type and for the Checklist:

	NOTAMN	NOTAMR	NOTAMC	Checklist
Series/Nr/Type	Yes	Yes	Yes	Yes
Ref to Series/Nr	No	Yes	Yes	Yes
FIR	Yes	Yes	Yes	Yes
NOTAM Code	Yes	Yes	Yes	Yes
'Traffic'	Yes	Yes	Yes	Yes
'Purpose'	Yes	Yes	Yes	Yes
'Scope'	Yes	Yes	Yes	Yes
Lower/Upper	Yes	Yes	Yes	Yes
Lat/Long/Radius	Yes	Yes	Yes	Yes
Item A)	Yes	Yes	Yes	Yes
Item B)	Yes	Yes	Yes	Yes
Item C)	Yes	Yes	No	Yes
Item D)	Optional	Optional	No	No
Item E)	Yes	Yes	Yes	Yes
Items F) & G)	Optional	Optional	No	No

Yes   =   Entry in Item is compulsory.
No   =   Entry in Item is not allowed.
Optional   =   Entry depending on the NOTAM contents.

2.3   Detailed Procedures

2.3.1   NOTAM Series Allocation

2.3.1.1   The use of a NOTAM Series identifier is always required, even for countries publishing only one single NOTAM Series.

2.3.1.2   Letters A to Z (1 character) are allowed, except S and T.

2.3.2   NOTAM Number

2.3.2.1   Consists of NOTAM number/year (4 digits/2 digits). For Multi-part NOTAM refer to procedures detailed in Chapter 1.

2.3.2.2   Each series will start on January 1st of each year with number 0001.

2.3.2.3   The NOTAM are issued in ascending and continuous sequence in each and every series.

2.3.3   NOTAM Type

2.3.3.1   Letters 'N' (new), 'R' (replace) and 'C' (cancel) are added as a suffix to the designator 'NOTAM' to indicate the NOTAM type or function.

Examples: `A0123/08 NOTAMN;`

`A0124/08 NOTAMR A0123/08`

`A0125/08 NOTAMC A0124/08`

2.3.4   NOTAM Qualification Item Q) – General Rules

2.3.4.1   The NOTAM Selection Criteria (NSC) tables form the basis for NOTAM qualification. Guidance for their use is contained in ICAO Doc 8126 (Ref. [2]) Chapter 6 Appendix B.

2.3.4.2   NSC are used for the following:

   a)   the storage and retrieval of information;

   b)   to associate a NOTAM to particular purposes; and

   c)   to determine the relevance of a NOTAM for a given context (aerodrome, FIR, area, IFR or VFR flight, …).

2.3.4.3   Publishing NOF shall normally apply the qualifiers associated with the NOTAM Code combinations in accordance with the NSC. Deviation from the corresponding 'Traffic', 'Purpose' and 'Scope' qualifiers is only allowed in exceptional cases; e.g. when required by National regulations or imposed by operational needs (refer to paragraphs 2.3.6.6-2.3.6.8, 2.3.7.3, 2.3.9.4 and 2.8.3 for guidance).

2.3.4.4   All fields of the Item Q) shall be completed for each NOTAM type.

2.3.5   Qualifier 'FIR'

2.3.5.1   This Item shall normally contain the ICAO Location Indicator of the FIR within which the subject of the information is located geographically or, if the NOTAM is issued by a regional non-governmental agency, the location indicator allocated by ICAO to that agency.

Example: `Q) RJJJ/QWELW/…..`
            `A) RJAA`

2.3.5.2   If more than one FIR of the same country are concerned, the ICAO nationality letters of that country (e.g. ZX) shall be followed by 'XX'.

Example: `Q) ZXXX/QWELW/…..`
            `A) ZGZU ZSHA ZBPE…..`

2.3.5.3   If more than one FIR of different countries are concerned (supra-national), the ICAO nationality letters of the responsible State (e.g. LI) shall be followed by 'XX'.

Example: `Q) LIXX/QWELW/…..`
            `A) LIRR LIBB LATI…..`

2.3.5.4   A location indicator allocated exclusively to an overlying UIR shall not be used.

Example: If the information relates to Rhein UIR, the allocated indicator 'EDUU' is not to be used in Item Q):

```
Q) EDXX/.....
A) EDGG EDMM
```

2.3.5.5   When a subject aerodrome is situated within the overlying FIR of another State, Item Q) shall contain the code for that overlying FIR (paragraph 2.3.14.2 refers).

Example:
```
Q) LMMM/ …..
A) LICD
```

2.3.5.6   In the absence of a clear and positive alternative, the insertion of location indicators such as LIXX in Item Q) (paragraph 2.3.5.3 refers) enables identification of the Publishing NOF.

2.3.6   Qualifier 'NOTAM CODE'

2.3.6.1   This Item shall contain the ICAO Doc 8126 (Ref. [2]) rationalised versions of NOTAM Codes published in ICAO Doc 8400 (Ref. [7]).

2.3.6.2   The NOTAM Selection Criteria (NSC) set out in ICAO Doc 8126 (Ref. [2]) Chapter 6 Appendix B provide a subject-related association of NOTAM Codes with the qualifiers 'Traffic', 'Purpose' and 'Scope'.

2.3.6.3   If ICAO introduces new NOTAM Code subjects in Doc 8400 (Ref. [7]) (e.g. 'GA' and 'GW' for GNSS) before amending Doc 8126 (Ref. [2]), the allocation of qualifiers 'Traffic', 'Purpose' and 'Scope' shall be based on operational experience and orientated to similar subjects contained in the existing Doc 8126 NSC.

2.3.6.4   Publishing NOF shall ensure that the NOTAM Code selected from the NSC describes the most important information to be promulgated.

Example: If required text reads: 'parking area closed due work in progress'

Use QMK**LC** instead of QMK**HW**, i.e.:

```
Q) WSJC/QMKLC/IV/BO/A/.....
Instead of:
Q) WSJC/QMKHW/IV/M/A/.....
```

2.3.6.5   If the NSC tables do not contain an appropriate 'Subject/Condition' combination for the information to be promulgated, the letters 'XX' shall be used. However, every effort shall be made to use 'Subjects' and 'Conditions' that are listed in the NSC before deciding to use 'XX' as detailed in the following paragraphs.

2.3.6.6   If the <u>Subject</u> is not listed: use 'XX' as the 2nd and 3rd letters of the NOTAM Code. However, an overall term (such as 'FA' or 'CA') or a best fitting code shall be preferred whenever possible instead of 'XX'.

Example: QXXCS

When 'XX' is used as the 2nd and 3rd letter combination, free association is possible with the qualifiers 'Traffic', 'Purpose' and 'Scope'. These entries shall be selected with due regard to the qualifying NOTAM text.

2.3.6.7   If the <u>Condition</u> is not listed: use 'XX' as the 4th and 5th letters of NOTAM Code with the exception of Trigger NOTAM where 'TT' is always used (ref. 2.7.2.8).

Example 1: `QFAXX`

When 'XX' is used as the 4th and 5th letter combination, free association is possible with the qualifiers 'Traffic' and 'Purpose'. The 'Traffic' and 'Purpose' entries shall be selected with due regard to the qualifying NOTAM content and, by analogy, with the prevailing association of qualifiers to the respective subject (2nd and 3rd letters) in the NSC.

Association with 'Scope' is fixed by the NOTAM subject 2nd and 3rd letter combination taking into account the requirements mentioned in Para 2.3.9.4.

If the NOTAM contents do not justify the insertion of the prevailing qualifiers associated with the subject in the NSC, NOTAM shall be assigned the appropriate qualifiers taking into account the operational needs, especially for PIB output/query.

Example 2:

If required text reads: 'Grass cutting in progress on aerodrome', the prevailing qualifiers ('Traffic'/'Purpose'/'Scope') for 'QFA' (AD) are 'IV/NBO/A/'.

But, depending on the activity's expected impact on manoeuvring area operations, Item Q) could read: '…./QFAXX/IV/M/A/…..'

Example 3:

If required text reads: 'RWY18 ILS localizer coverage reduced to 25 degrees either side of the front course along a radius 10NM from the antenna …..', the NOTAM Code and 'Traffic'/'Purpose'/'Scope' qualifiers in Item Q) may read: 'QILXX/I/BO/A/ …..'

2.3.6.8   If, exceptionally, neither the <u>Subject</u> nor the <u>Condition</u> is listed: the code 'QXXXX' may be used.

When the NOTAM Code 'QXXXX' is used, free association of the qualifiers is possible. The qualifiers shall reflect the content of the NOTAM.

Example:

Q) EKDK/QXXXX/IV/M/E/000/999/5533N00940E999

E) ACCORDING TO RESOLUTION 781 UNITED NATIONS HAS DECIDED TO ESTABLISH A BAN ON MIL FLIGHTS IN …..

2.3.7   Qualifier 'TRAFFIC'

2.3.7.1   This qualifier relates the NOTAM to a type of traffic and thus allows retrieval according to the user requirements:

I   =   IFR Traffic

V   =   VFR Traffic

IV   =   IFR and VFR Traffic

K   =   NOTAM is a checklist, see paragraph 2.5.

2.3.7.2   The appropriate type of traffic should be taken from the NOTAM Selection Criteria (NSC).

2.3.7.3   However, the NSC contains certain subjects (2nd and 3rd letters) where the NOTAM subject/text may demand a different choice of 'Traffic' qualifier (I, V or IV). In these cases, the correct 'Traffic' entry shall be determined by the Publishing NOF.

Example: NOTAM Code for 'VFR REPORTING POINT ID CHANGED' is 'QAPCI'

The given NSC 'Traffic' Qualifier for 'QAPCI' is 'IV'

But as the Reporting Point is for VFR use only;

Entry in Item Q) shall be: 'Q) LFFF/QAPCI/**V**/BO/E/000/200....'

2.3.8 Qualifier 'PURPOSE'

2.3.8.1   This qualifier relates a NOTAM to certain purposes (intentions) and thus allows retrieval according to the user's requirements.

2.3.8.2   The appropriate 'Purpose' qualifier(s) should be taken from the NSC.

2.3.8.3   'PURPOSE' entries:

N   = NOTAM selected for the immediate attention of aircraft operators

Due to their importance these NOTAM require immediate attention of aircraft operators. Aircraft Operators may request specific delivery of such NOTAM or for their inclusion in specific Pre-flight Information Bulletins.

The NOTAM will appear in a specific Pre-flight Information Bulletin containing only NOTAM related to subjects of extreme importance selected for immediate attention. NOTAM qualified BO, B or M will not appear, so only NOTAM qualified NB[1] or NBO shall appear.

B   = NOTAM selected for PIB entry

The NOTAM will appear in a Pre-flight Information Bulletin containing all NOTAM relevant to a general Pre-flight Information Bulletin query. NOTAM qualified B, BO, NB[1] or NBO shall appear in the Pre-flight Information Bulletin.

O   = NOTAM concerning flight operations

The NOTAM will appear in a specific Pre-flight Information Bulletin containing only NOTAM related to subjects that concern flight operations. NOTAM qualified B, NB[1] or M will not appear, only NOTAM with BO or NBO shall appear.

M = Miscellaneous

The NOTAM is for a 'miscellaneous' purpose and will not appear in a Pre-flight Information Bulletin, unless specifically requested.

K = The NOTAM is a checklist (see para 2.5).

2.3.8.4 'PURPOSE' combinations:

The following combinations of one to three letters are permissible:

M, B, BO, NB[1] and NBO,

where the order in the list reflects the grading in terms of operational significance from the lowest to the highest.

For a NOTAM Checklist, only K shall be used.

2.3.9 Qualifier 'SCOPE'

2.3.9.1 This qualifier relates the NOTAM subject (2nd and 3rd letters) to a specific scope. This qualifier is used to determine under which category a NOTAM is presented in a Pre-flight Information Bulletin, i.e. under 'Aerodrome', 'Enroute' or 'Navigation Warning'.

2.3.9.2 The following entries are permissible:

A = Aerodrome

Relates the NOTAM to the scope of 'Aerodromes'. Entry of an aerodrome (e.g. EGLL) in Item A) is compulsory.

E = Enroute

Relates the NOTAM to the scope of 'Enroute information'. Entry of one or more FIR in Item A) is compulsory.

W = Warning

Relates the NOTAM to the scope of 'Navigation Warnings'. Entry of one or more FIR in Item A) is compulsory.

AE = Aerodrome/Enroute

Relates the NOTAM to both scopes 'A' and 'E'.

Scope 'AE' is used whenever an aerodrome-related NOTAM (e.g. certain Navaids) affects both aerodrome and Enroute operations. For navigation warnings refer to 'AW'.

---

[1] Note that, whilst change is expected, the use of 'NB' remains prescribed in the ICAO NSC at the time of writing this edition.

Item A) shall contain the location indicator of the Aerodrome (e.g. EHAM).

Example:
```
Q) EHAA/QNMAS/IV/BO/AE/000/999/5216N00442E025
A) EHAM B) 0804170500 C) 0804170700
E) VOR/DME AMS 113.95 MHZ/CH 96Y U/S
```

In this example, Item Q) shall contain geographical co-ordinates and a radius centred on the Navaid.

When such a Navaid is serving two or more aerodromes, only one NOTAM shall be published with scope 'AE'. NOTAM for other aerodromes concerned shall be published with scope 'A' only to prevent a duplication in the Enroute part of the PIB. All scope 'A' NOTAM, shall contain ARP as geographical reference.

In the rare case that a Navaid coverage affects more than one FIR, all affected aerodromes are issued with scope 'A' and with ARP as geographical reference. A separate NOTAM is issued with scope 'E' only, Item A to contain all affected FIR.

AW = Aerodrome/Warning

Relates the NOTAM to both scopes 'A' and 'W'.

Although scope 'AW' is not explicitly listed in the ICAO NSC tables, it shall be used whenever a single NOTAM is used for both aerodrome and Enroute traffic affected by a Navigation Warning taking place on or in the near vicinity of an aerodrome.

Item A) shall contain the aerodrome location indicator, and Item Q) shall contain the geographical co-ordinates of the location where the activity takes place, followed by the radius.

Example:
```
Q) LOVV/QWPLW/IV/M/AW/000/160/4720N01113E010
A) LOWI  B) 0810201400  C) 0810202200
E) MIL PJE WILL TAKE PLACE WITHIN 10NM RADIUS CENTERED AT
471940N 0111300E (SEEFELD).
F) GND G) FL160)
```

Note that co-ordinates for LOWI AD are 471539N0112040E, but the actual co-ordinates of the site where the activity takes place are entered in Item Q).

In the rare case that a Navigation Warning affects two or more aerodromes, only one NOTAM shall be published with scope 'AW' in order to prevent duplicated information in the Navigation Warnings section of the Enroute part of the PIB. NOTAM for other aerodromes concerned shall be published with scope 'A' only, ARP as geographical reference and NOTAM Code QFALT (aerodrome limited) and without Item F) and G). If required, the vertical limits are inserted in Item E).

When the area concerned affects one or several AD and more than one FIR, one NOTAM is issued with scope 'W', item A to contain all affected FIR. For every affected AD, a separate NOTAM with scope 'A' only is issued in order to provide correct information in all PIB sections for all concerned FIR and AD and to avoid duplications. All scope 'A' NOTAM to contain ARP as

geographical reference and NOTAM Code QFALT (aerodrome limited) without Item F) and G). If required, the vertical limits are inserted in Item E).

K = Checklist

Relates the NOTAM to a checklist, which will not appear in a Pre-flight Information Bulletin. Entry in Item A) of the FIR(s) valid for the Publishing NOF is compulsory (ref para 2.5).

2.3.9.3   The appropriate entries should be taken from the NOTAM Selection Criteria.

2.3.9.4   However, the NSC contains certain subjects (2nd and 3rd letters) where the 'Scope' (A, E, W, AE or AW) depends on the NOTAM text. In these cases, the correct 'Scope' entry shall be determined by the publishing NOF according to NOTAM text.

Examples: 'QOB . .' = Obstacle = 'AE' in NSC but could also be 'A' or 'E' only;

'QWA . .' = Air Display = 'W' in NSC but could also be 'AW';

'QNV . .' = VOR = 'AE' in NSC but could also be 'E'.

'QOA . .' = AIS = 'A' in NSC but could also be 'AE' (e.g. if AIS is also responsible for other aerodromes in the FIR) or 'E' if the NOTAM refers to national NOF or information provision.

'QST . .' = TWR = 'A' in NSC but could also be 'AE' (e.g. if TWR also serves Enroute traffic).

2.3.9.5   If the letters 'XX' are used as 2nd and 3rd letters of the NOTAM Code, the appropriate Scope must be derived from the text of the NOTAM. If the letters 'XX' are inserted as 4th and 5th letters of the NOTAM Code, the appropriate 'Scope' must be derived from the NOTAM-subject (2nd and 3rd letters of the NOTAM Code) according to the NSC.

2.3.9.6   Recapitulation of 'Scope' qualification possibilities and respective Item A) contents:

Qualifier 'SCOPE'	Item A) contents
A	Aerodrome
AE	Aerodrome
E	FIR(s)
W	FIR(s)
AW	Aerodrome
K	FIR(s)

2.3.10 Qualifiers 'LOWER/UPPER'

2.3.10.1 These qualifiers relate a NOTAM to a vertical section of airspace by reference to specific lower/upper limits. This allows lower/upper limits to be specified in requests for pre-flight information and, by doing so, any NOTAM not relating to all or part of the requested vertical section may be excluded from the retrieved Pre-flight Information Bulletin obtained.

2.3.10.2 The limits specified in these qualifiers are given as 'flight levels' only.

Example: 'Q) …/090/330/…' = from 'Lower' FL 090 up to 'Upper' FL 330

2.3.10.3 The 'Lower' limit shall be inferior or equal to the 'Upper' limit.

2.3.10.4 Whenever an airspace is affected (relevant scope: AE, E, AW and W) Lower and Upper limits shall be designated by the corresponding vertical values.

2.3.10.5 In the case of Navigation Warnings and Airspace Reservations, the values specified in 'Lower' and 'Upper' shall correspond to the values specified in Items F) and G) (paragraph 2.3.23 refers). The values entered in the qualifier 'Lower' shall be rounded down to the nearest 100 ft increment and the values entered in the qualifier 'Upper' shall be rounded up to the nearest 100 ft increment.

Examples:

Lower/Upper 1400ft/1900ft	1400/1900	= 014/019
Lower/Upper 1350ft/2000ft	1300/2000	= 013/020
Lower/Upper 1850ft/2020ft	1800/2100	= 018/021

2.3.10.6 The addition of 'buffers' to these qualifiers, either manually or within system software, which increases the airspace to be considered for PIB purposes, shall be avoided.

2.3.10.7 When the values in F) and G) are expressed as 'flight levels' (FL), then the same FL values will be entered respectively as the 'Lower/Upper' values in Item Q).

2.3.10.8 When the values in F) and G) are expressed as an 'altitude' (AMSL), then the corresponding FL values (based on the standard atmosphere) will be entered as the 'Lower/Upper' values in Item Q).

Example: `F) 2000FT AMSL G) 7500FT AMSL`

=> 'Lower/Upper' = '020/075'

2.3.10.9 When the values in F) and G) are expressed as a 'height' (AGL), and when the corresponding altitude can be calculated based on the terrain elevation of the affected area, then the corresponding FL values (based on the standard atmosphere and AMSL values) will be entered as the 'Lower/Upper' values in Item Q).

Example: `F) 2000FT AGL   G) 7500FT AGL`

Lowest terrain elevation = 500FT AMSL
Upper terrain elevation = 1000FT AMSL

=> 'Lower/Upper' = '025/085'.

2.3.10.10 When the values in F) and G) are expressed as a 'height' (AGL), and no corresponding flight levels can be defined (i.e. the terrain elevation of the affected area is unknown to the Publishing NOF despite all possible action having been taken to obtain the data), then, the highest terrain elevation of the State, or the FIR, or the region concerned, shall be added to the value in Item G) for calculating the qualifier 'Upper' in Item Q) and the default value '000' shall be entered in the qualifier 'Lower' in Item Q).

<u>Example</u>: `F) 2000FT AGL   G) 7500FT AGL`

Highest terrain elevation = 9000FT

= 'Lower/Upper': 000/165.

2.3.10.11 In the case of Airspace Organisation (NOTAM related to structure of ATS Routes, TMA, CTR, ATZ, etc.), the specified 'Lower/Upper' values shall correspond to the vertical limits of the airspace concerned. The use of default values 000/999 shall be avoided whenever possible.

<u>Example</u>:

```
Q)LFFF/QATCA/IV/NBO/AE/000/055/4929N00212E027
A) LFOB B)0802010630 C) 0803262130
E) BEAUVAIS CTR, TMA 1, TMA 2 AND TMA 3 ACTIVATED 0630-2130
WHEN CREIL S/CTR DEACTIVATED, TMA 4 ACTIVATED DURING SLOTS
DESCRIBED ABOVE.
```

The upper limit of the BEAUVAIS TMA is FL055 as correctly reflected in the Q-line qualifier 'Upper'.

If the vertical limits of an Airspace organisation are only partly affected, lower and upper limits shall be limited to the affected part only.

<u>Example</u>:

```
Q) LFFF/QATCA/IV/NBO/AE/000/035/4929N00212E027
A) LFOB B) 0802010630 C) 0803262130
D) 0630-2130
E) BEAUVAIS CTR, TMA 1, TMA 2 AND TMA 3:
SPEED LIMITATIONS OF 250NM IN FORCE FOR ALL FLIGHTS BELOW
3500FT AMSL.
```

Refer to 2.3.10.12 for changes of vertical limits.

2.3.10.12 In the case of changes of vertical limits lower and upper limits shall cover the extended or not affected part.

<u>Example</u>:

```
Q) LFFF/QATCH/IV/NBO/AE/025/070/4935N00219E015
A) LFOB B) 0805100400 C) PERM
E) BEAUVAIS TMA 3.2 VERTICAL LIMITS CHANGED: LOWER LIMIT
RAISED TO 3000FT AMSL, UPPER LIMIT RAISED TO FL70.
```

Note: published lower/upper limit in AIP for TMA 3.2 is 2500FT AMSL/FL065.

2.3.10.13 In the case of Enroute obstacles (e.g. TV masts) no Items F) and G) are included, but appropriate values shall be used in Item Q), based on local elevation. Use of default value '000/999' shall be avoided.

If several (grouped) obstacles (in close proximity) are published with one NOTAM, the upper limit shall reflect the highest obstacle.

Example:

```
C0120/08 NOTAMN
Q)LSAS/QOBCE/V/M/AE/000/030/4631N00839E005
A) LSPM B) 0802250557 C) 0806300000 EST
E) OBSTACLES ERECTED, 2.5KM 280DEG GEO ARP AMBRI-PIOTTA,
463103N0083927E, 54.0M / 177.2FT AGL.
```

2.3.10.14 Most aerodrome-related information, 'Scope' 'A', refers to ground installations for which the insertion of an Upper Limit is not relevant. Therefore, if specific height indications are not required, these NOTAM shall include the default values '000/999'.

2.3.10.15 Whenever the aerodrome-related information also affects the overlying or surrounding airspace, the Lower/Upper Limits need to be specified; and the 'Scope' qualifier shall read 'AE' or 'AW'.

2.3.11 Qualifier 'GEOGRAPHICAL REFERENCE' – General Rules

2.3.11.1 This qualifier allows the geographical association of a NOTAM to a facility, service or area that corresponds to the aerodrome or FIR(s) given in Item A), and is composed of two elements.

2.3.11.2 The first element contains one set of co-ordinates comprising 11 characters rounded up or down to the nearest minute; i.e. Latitude (N/S) in 5 characters; Longitude (E/W) in 6 characters.

2.3.11.3 The second element contains a radius of influence comprising 3 figures rounded up to the next higher whole Nautical Mile encompassing the total area of influence; e.g. 10.2NM shall be indicated as 011.

Example: Q) EDWW/QWELW/IV/BO/W/000/310/**5410N00845E011**.

2.3.12 Qualifier 'GEOGRAPHICAL REFERENCE' – Co-ordinates

2.3.12.1 For NOTAM with 'Scope' 'A' the Aerodrome Reference Point (ARP) co-ordinates shall be inserted.

2.3.12.2 For NOTAM with 'Scope' 'AE' or 'AW' the appropriate co-ordinates shall be inserted. These co-ordinates may be different from the ARP.

E.g. a VOR situated at an aerodrome will not necessarily have the same co-ordinates as the ARP. The same applies for a Navigation Warning that affects the aerodrome traffic, at or in the close vicinity of an aerodrome, and whose co-ordinates may also be different from the ARP.

2.3.12.3 For NOTAM with 'Scope' 'E' or 'W' referring to a given/known point (Navaid, Reporting point, City, etc.) these co-ordinates shall be inserted.

2.3.12.4 If a NOTAM with 'Scope' 'E' or 'W' refers to an area (FIR, Country, Danger Area etc.), the co-ordinates represent the approximate centre of a circle whose radius encompasses the whole area of influence.

2.3.12.5 For NOTAM with 'Scope' 'E' or 'W' containing information that cannot be allocated a specific geographical position (e.g. VOLMET, Entry requirements, Communication failure, SRS publications etc.) the co-ordinates represent the approximate centre of a circle whose radius encompasses the whole area of influence (this may be the centre of an FIR or multiple FIR, e.g. for an entire State)

2.3.13 Qualifier 'GEOGRAPHICAL REFERENCE' – Radius

2.3.13.1 Radius shall be used in a way that it encompasses the total area of influence of the NOTAM. The radius entered shall be as precise as possible. Use of an excessive radius indication (e.g. by entering the default '999' instead of the actual radius) causes unnecessary PIB coverage and shall be avoided.

2.3.13.2 Whenever a NOTAM relates to an entire FIR or FIR group (e.g. for a State with more than one FIR or for those FIRs encompassed by the indicator of an organisation responsible for the provision of ANS in more than one State), then '999' shall be entered as the radius.

The use of the radius value '999' shall allow an automated system to retrieve such information only against the FIR(s) indicated in Item A). Adjacent FIR(s), even within the radius of influence, are never affected by this information.

Example:

```
Q) EDXX/QXXXX/IV/BO/E/000/999/5120N01030E999
A) EDWW EDGG EDMM B) 0801010000 C) PERM
E) FLIGHTS TO/FROM THE CONTRACTING STATES OF THE SCHENGEN
REGIME MAY BE CONDUCTED TO/FROM ANY AERODROME WITHIN THE
FEDERAL REPUBLIC OF GERMANY. THE OBLIGATION TO USE A
DESIGNATED CUSTOMS AERODROME IS WITHDRAWN.
```

2.3.13.3 For certain specific NOTAM subjects, the radius should be standardised for the sake of uniformity and simplicity. A list of default radius per NOTAM Code is given in the following table.

Table of Default Radius Indicators for NOTAM Creation

NOTAM Code	Plain Language	Radius (NM)
Q - - - -	All Aerodrome-related NOTAM and Navigation Aids with 'Scope A' only. The default value shall also be used for 'Scope' 'AE'/'AW', but only if appropriate values cannot be defined.	005 005 if no appropriate value can be found
QN - - -	All Navigation Aids (VOR/DME, NDB ...) Except for Long Range Navigation Systems.	025
QOB - -	OBST	005
QOL - -	OBST LIGHT	005
QPH - -	Holding Procedure	025
QPX - -	Minimum Holding Altitude	025
QAP - -	Reporting Point	005
QAX - -	Intersection	005

Note: Due to the dense network of ground-based navigation aids in Europe, these default values should be used by the Publishing NOF in order not to overload Pre-flight Information Bulletins with superfluous information.

Note: Full coverage of Navaid might be inserted instead of 025, in case of low density of Navaid coverage.

2.3.14 Item A) – Single Location (FIR or AD)

2.3.14.1   In the case of a single FIR, the Item A) entry must be identical to the 'FIR' qualifier entered in Item Q).

2.3.14.2   When an aerodrome indicator is given in Item A), it must be an aerodrome/heliport situated in the FIR entered in Item Q). This shall apply even when the aerodrome/heliport is situated within an overlying FIR of another State, e.g. NOTAM for EGJJ shall have LFRR in Item Q).

2.3.14.3   If no 4–letter ICAO location indicator for an aerodrome/heliport exists, Item A) shall contain either the two ICAO nationality letters + XX (EDXX) or the single ICAO nationality letter + XXX (KXXX); with the full name of the aerodrome/heliport as the first element in Item E).

2.3.14.4   States shall take urgent steps to ensure that:

-   all aerodromes which may be the subject of international NOTAM have an ICAO location indicator;

- the same location indicator is not used for an aerodrome and an FIR;

- all NOTAM published with XX in Item A shall be cancelled (NOTAMC) and published as NOTAMN as soon as possible after the new location indicator has been published and reached its effective date.

Examples: A) EBBU   (ICAO location indicator for a single FIR)

A) LFPO   (ICAO location indicator for an Aerodrome)

A) EDXX
E) SACHSENRING-HOHENSTEIN-ERNSTTAL
<text to be continued in new line>

2.3.15 Item A) – Multi-Location (FIR or AD)

2.3.15.1 If more than one AD is involved, separate NOTAM shall be issued.

2.3.15.2 If more than one FIR is concerned:

(a) all FIR location indicators affected by the information shall be entered in Item A), each separated by a space;

(b) the number of FIR in Item A) is restricted to 7 by the current ICAO NOTAM format (length of an AFTN line). If more than 7 FIR are affected, the Publishing NOF or responsible non-governmental agency (paragraph 2.3.5 refers) may use a unique and unambiguous ICAO location indicator that serves the purpose of publication of NOTAM information related to more than 7 FIRs. If no such unique ICAO location indicator exists, additional NOTAM shall be published as required.

Example: UUUU is the ICAO location indicator for the Moscow AFTN COM Centre. This indicator is also used to represent all FIRs in the Commonwealth of Independent States included in the AIP of the Russian Federation. This unique location indicator can be used by the Moscow NOF to publish information that relates to all FIR, such as NOTAM Checklists.

In such cases both Item A) and Item Q) could read 'UUUU'

(c) in the case of multiple FIR in Item A), the FIR qualifier of the Item Q) contains the ICAO nationality letter(s) + XX (or XXX). For 'supra-national' information, i.e. more than 1 FIR belonging to several countries, the ICAO nationality letter of the Publishing NOF (followed by XX or XXX) must be entered as the 'FIR' qualifier in Item Q).

Example 1:   Multiple FIRs in one country:
           Item A) LFFF LFBB LFRR
           Item Q) LFXX

Example 2:   Multiple FIRs in different countries:
           Item A) EDGG EBBU LFFF
           Item Q) EDXX *(if the NOTAM is originated by the German NOF)*

Example 3:   Multiple FIRs in different countries issued by a non-governmental agency:

Item A) `EGTT EHAA EKDK`
Item Q) `EUXX` (*if the NOTAM is originated by a supra-national European Agency)*

2.3.15.3   If referring to a navigation aid serving more than one AD or to a navigation warning affecting several AD, issue separate NOTAM for each AD.

2.3.15.4   NOTAM 'Scope' for navigation aid or navigation warning affecting more than one AD and ENR shall be 'AE' or 'AW' respectively for one AD and 'A' for the others (Refer to para 2.3.9.2 for details).

2.3.15.5   If referring to GNSS, insert the appropriate ICAO location indicator allocated for a GNSS element (system) or the common location indicator allocated for all elements of GNSS (except GBAS). If the outage of a GNSS element is of operational consequences, the operational limitations shall be published as well. The GNSS element and its consequence may be published in one NOTAM.

Example 1:
```
Q) EDMM/QPILT/IV/NBO/A/000/999/4930N01105E005
A) EDDN B) 0811211551 C) 0811211556
E) GPS APPROACH AND DEPARTURE PROCEDURES LIMITED
```

Example 2:
```
Q) KNMH/QGWXX/IV/NBO/E/000/999/3910N07640W999
A) KNMH B) 0812191519 C) 0812221519EST
E)  GLOBAL  POSITIONING  SYSTEM  PSEUDO  RANDOM  NOISE  9  U/S
```

Example 3:
```
Q) EDWW/QPIXX/I/NBO/A/000/999/5303N00847E005
A) EDDW B) 0807130511 C) 0807141200
E) GPS LDG SYSTEM (GLS) RWY 09/27 U/S
```

Example 4:
```
Q) KXXX/QGWLT/IV/NBO/E/000/400/3339N07522W447
A) KZBW KZNY KZMA KZJX B) 0807210100 C) 0807290300
D) 0100-0300
E)  GPS  UNRELIABLE  AND  MAY  BE  UNAVAILABLE  WITHIN  A  447NM
RADIUS OF 333900N 752200W AT FL400, DECREASING IN AREA WITH
DECREASE IN ALTITUDE TO 402NM RADIUS AT FL250, 340NM RADIUS
AT 10000FT AMSL AND 301NM RADIUS AT 4000FT AGL.
F) SFC G) FL400
```

Note: In the case of GNSS, the location indicator KNMH is being used by USA NOF to notify a GNSS element outage.

2.3.16 Item B) – Start of Activity

2.3.16.1   Ten-figure date-time group giving year, month, day, hour and minutes at which the NOTAM comes in force.

Example: `B) 0807011200` (1st of July 2008, 12:00 UTC)

2.3.16.2   Insertion of 'WIE' or 'WEF' is not permitted.

2.3.16.3   The start of a UTC day shall be indicated by '0000' (i.e. do not use '0001').

2.3.16.4 A NOTAM is 'valid' from the moment it is published, whereas it only becomes 'in force' at the date-time group specified in Item B).

2.3.16.5 The Item B) date/time group should be equal to or later than the actual date/time of creation of the NOTAM.

2.3.16.6 However, for NOTAMR and NOTAMC, the Item B) time shall correspond to the actual date/time of creation of that NOTAMR or NOTAMC. No future coming in force is permitted (paragraph 2.4.1.5 refers).

Note: The date/time of creation may precede the date/time of transmission by a few minutes, due to the time required for the full completion and review of the NOTAM data.

2.3.16.7 Refer to paragraph 2.3.18.19 for NOTAM advising changes to previously published operating or activity hours.

2.3.17 Item C) – End of Validity

2.3.17.1 For NOTAM of a known duration of validity, a ten-figure date-time group giving year, month, day, hour and minute at which the NOTAM ceases to be in force and becomes invalid. This date and time shall be later than that given in Item B).

Example: `C) 0807022030`

2.3.17.2 The end of a UTC day shall be indicated by '2359' (i.e. do not use '2400').

2.3.17.3 For NOTAM of uncertain duration of validity, the date-time group shall be followed by 'EST' (estimate).

Example: `C) 0807031230EST`

2.3.17.4 Insertion of 'UFN' or 'APRX DUR' are not permitted.

2.3.17.5 For NOTAM containing information of permanent validity that will be incorporated in the AIP, the abbreviation 'PERM' is used instead of a date-time group.

Example: `C) PERM`

2.3.17.6 Item C) shall not be included in a NOTAMC.

2.3.17.7 Refer to paragraph 2.3.18.19 for NOTAM advising changes to previously published operating or activity hours.

2.3.18 Item D) – Day/Time Schedule – General Rules

2.3.18.1 This Item needs to be inserted only when the information contained in a NOTAM is relevant for users only at certain periods within the overall 'in force' period, i.e. between the dates and times given in Items B) and C). In these cases, Item D) will detail the actual periods of activation with the exception referred to in para 2.3.18.19.

2.3.18.2   The start of the first activity in Item D) shall always correspond to the Item B) date and time. This period shall always appear as the first entry in Item D) – see para 2.3.21 Examples.

2.3.18.3   If the NOTAM is issued during an activity period that is defined by days of the week and that will be repeated, then the first day given in Item D) may not equate literally to the date in Item B).

Example: If D) = MON-FRI, the date in B) may be a WED (i.e. the first activity period starts on the WED and ends on the FRI, and subsequent periods run from MON to FRI).

2.3.18.4   The end of the latest activity period notified in Item D) shall always correspond to the end of the validity of the NOTAM given in Item C). Note that this period may not always be listed as the final entry in Item D) – see paragraph 2.3.21 Examples.

2.3.18.5   Syntaxes or rules referring to a date also apply to days of the week.

2.3.18.6   The following diagram illustrates the relationship between the time-related expressions used in the OPADD:
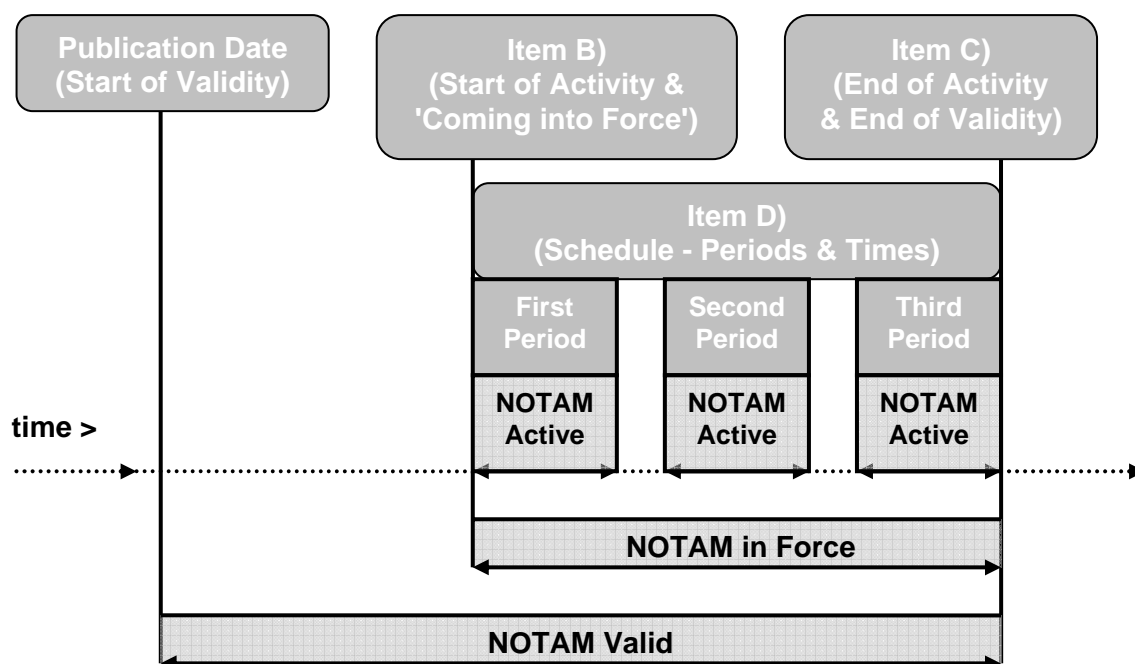
2.3.18.7   Automated processing (and to a certain extent manual processing) thus allows exclusion of a NOTAM from PIB whenever it is inactive between the dates and times given in Items B) and C).

2.3.18.8   Item D) shall be structured according to the following rules. These provide clear and unambiguous standard expressions allowing automated processing for Pre-flight Information Bulletin production, while maintaining a good and clear readability in manual environments.

2.3.18.9   A time indication shall be inserted for each period of activity. When the activity covers a full day, H24 shall be inserted after the date(s).

2.3.18.10 A date shall appear only once (refer to para 2.3.21 Example 16).

2.3.18.11 When the activity covers more than 24 hours, the following syntax is recommended:
(start date) (start time)-(end date) (end time)

2.3.18.12 When the activity covers less than 24 hours on particular days, the following syntax is recommended:
(date) (start time)-(end time)

2.3.18.13 When the activity is a succession of identical periods of less than 24 hours on consecutive days, the following syntax is recommended:

(start date)-(end date) (start time)-(end time)

2.3.18.14 When entering a succession of activities that span midnight UTC, the following syntaxes are recommended:

a) (start date) (start time)–2359 (end date) 0000-(end time)

b) (start date) (start time)-(end time)

Note that the end date is omitted from Item D) but that it will appear in Item C).

Example 1: a period 05 2200-0500 would mean from the 5th at 2200 until the 6th at 0500 (i.e. B) 0805052200 C) 0805060500).

Example 2: a period WED 2200-0500 would mean from WED at 2200 until THU at 0500.

2.3.18.15 When the activity spans midnight UTC on successive days, the following syntaxes are recommended:

a) (start date first period) (start time)–2359, (start date next period(s))-(end date next period(s) 0000-(end time) (start time)-2359, (start date last period) 0000-(end time)

b) (start date)-(start date of last period) (start time)-(end time)

Note that the period end dates are omitted from Item D) but that the last one will appear in Item C).

Example 1: a period 05-07 2200-0500 would mean from the 5th at 2200 until the 6th at 0500 and from the 6th at 2200 until the 7th at 0500 and from the 7th at 2200 until the 8th at 0500 (i.e. B) 0805052200 C) 0805080500).

Example 2: a period WED-FRI 2200-0500 would mean from WED at 2200 until THU at 0500 and from THU at 2200 until FRI at 0500 and from FRI at 2200 until SAT at 0500.

2.3.18.16 If all periods of activity start in the same month, it is not necessary to include the name of the month in Item D) – see para 2.3.21 Example 6.

2.3.18.17 Item D) shall not exceed 200 characters. If it exceeds 200 characters, additional NOTAM shall be issued.

2.3.18.18 The maximum time period between 2 consecutive activity periods shall not exceed 7 days. If the time gap between consecutive activity periods is 8 days or more, additional NOTAM shall be issued.

2.3.18.19 When a NOTAM is issued to notify a change to previously published operating or activity hours, the time range indicated by Items B) and C) shall, if necessary, combine the new and previous periods to encompass the widest time period. The new schedule shall be presented in Item E) and not in Item D).

Example 1: Operating hours of ATC are changed from **1000**-**2000** to 1200-1900:
```
B) YYMMDD1000
C) YYMMDD2000
E) OPERATION HOURS OF ATC CHANGED TO 1200-1900
```

Example 2: Operating hours of ATC are changed from **1000**-1800 to 1200-**1900**:
```
B) YYMMDD1000
C) YYMMDD1900
E) OPERATION HOURS OF ATC CHANGED TO 1200-1900
```

Example 3: Operating hours of ATC are changed from 1000-1800 to **0800**-**1900**:
```
B) YYMMDD0800
C) YYMMDD1900
E) OPERATION HOURS OF ATC CHANGED TO 0800-1900
```

2.3.19 Item D) – Day/Time Schedule – Abbreviations and Symbols Used

2.3.19.1 Standardised abbreviations and punctuation shall be used in Item D) as described in the following paragraphs.

2.3.19.2 Abbreviations for Dates and Times:

Year: The year shall not be inserted in Item D), as it is stated in Items B) and C).

When the planned time schedule goes from one year into another, the displayed data shall remain in chronological order; i.e. December of this year shall precede January of next year.

Months: JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Dates: 01 02 03 .... 29 30 31

Days: MON TUE WED THU FRI SAT SUN

Times: Written as 4 digits (e.g.: 1030)

2.3.19.3 Abbreviations for Time Periods and associated text:

'EXC' for designating a full day or a series of full days when the NOTAM is NOT active.

'DAILY' is optional for a 'daily' schedule, the expression 'nightly' shall not be used.

'EVERY' for a schedule on fixed days.

'HJ'   for the period from Sunrise (SR) till Sunset (SS).

'HN'   for the period from Sunset (SS) till Sunrise (SR).

'H24'   for the whole day/dates concerned. Not to be used as a single entry.

'SR' and/or 'SS'   if appropriate to indicate Sunrise or Sunset.

'AND'   if used, shall be included in front of the last date or the last group or time period specified in Item D).

2.3.19.4 Punctuation:

' , ' (comma)   for separation of the schedule elements:

- groups of dates or days to which the same time periods apply;

- groups of time periods that all apply to the preceding and qualifying dates or days

(refer to para 2.3.19.5 for the recommended syntax and para 2.3.21.1 for clarification)

The use of the comma for enumeration is not allowed.

' - ' (hyphen)   means 'TO' or 'FROM-TO'

' ' (blank)   is read as 'AND'. If appropriate, the last date or time period shall be preceded by the word 'AND' instead of a blank.

' / ' (oblique)   shall not be used in Item D).

2.3.19.5 The use of the commas in Item D) is recommended as it helps both human and system readability. If used, a comma shall be placed, always and only, after a time schedule and only if the latter is immediately followed by a date. The last possible comma may be substituted by the word 'and'.

The following syntaxes are recommended. They are followed by examples (where dates could be presented as days of the week, two examples are given):

a) Separation of groups of dates to which the same time periods apply:

(start date) (start time)-(end date) (end time), (start date) (start time)-(end date) (end time)

Example: `D) 04 1000-06 1200, 08 1200-10 0700`

(date) (date) (start time)-(end time), (date) (date) (start time)-(end time)

Example: `D) 12 14 15 0900-1300, 17 18 21 0800-2000`

Example: `D) MON WED THU 0900-1300, TUE FRI SAT 0900-2000`

(start date)-(end date) (start time)-(end time), (start date)-(end date) (start time)-(end time)

Example: `D) 13-18 0700-1000, 21-28 0800-1000`

b) Separation of groups of time periods that all apply to the preceding and qualifying dates:

(date) (start time)-(end time) (start time)-(end time)**,** (date) (start time)-(end time) (start time)-(end time)

Example: `D) 11 1000-1130 1230-1800, 14 0700-0800 1030-1145`

Example: `D) MON 0900-1300 1400-1430, TUE 0900-1000 1245-1400`

(start date)-(end date) (start time)-(end time) (start time)-(end time)**,** (date) (start time)-(end time) (start time)-(end time)

Example: `D) 23-26 1000-1130 1230-1800, 27 0730-0800 1200-1300`

Example: `D) MON-FRI 0800-1100 1230-1300, SAT 1000-1100 1230-1300`

(date) (date) (date) (start time)-(end time) (start time)-(end time)**,** (date) (date) (start time)-(end time) (start time)-(end time)

Example: `D) 04 09 13 0900-1300 1400-1430, 07 10 14 16 0700-0800 1030-1145`

Example: `D) MON TUE FRI 0900-1300 1400-1430, WED THU SUN 1000-1100 1230-1300`

c) Combinations regarding separation of several different types of activities:

(start date) (start time)-(end date) (end time)**,** (date) (date) (date) (start time)-(end time) (start time)-(end time)**,** (start date)-(end date) (start time)-(end time)

Example: `D) 06 0500-09 2000, 11 14 18 0930-1100 1600-2300, 22-25 0300-0430`

Example: `D) 13 0800-14 1100, WED FRI 1000-1130 1230-1800, SAT-SUN 1000-1100.`

2.3.20 Item D) – Day/Time Schedule – Special Cases

2.3.20.1 <u>Sunrise (SR) and Sunset (SS)</u>: If the active time of a NOTAM corresponds to sunrise or sunset, the actual times of sunrise on the first day of validity and of sunset on the last day of validity should be inserted in Items B) and C) respectively.

<u>Examples</u>: `B) 0805150446   C) 0805201633   D) HJ`

`B) 0805151920   C) 0805200437   D) SS-SR`

2.3.20.2 <u>Twilight Periods</u>: The keywords for expressing the beginning and end of twilight periods, are 'SR MINUS**' and 'SS PLUS**' (** = number of minutes up to a

maximum of 99). Note that there shall be a blank space after 'SR' and 'SS' and that the number of minutes shall be inserted immediately after 'MINUS' or 'PLUS'.

Example:

```
B) 0805110413 C) 0805211701 D) SR MINUS30-SS PLUS30
```

2.3.20.3 <u>Processing of SR and SS Formats</u>: Due to the daily variation of SR and SS times, it may not be possible to automatically interpret the special formats as actual times for PIB output. If this is the case, the NOTAM will be displayed in the PIB for the whole day concerned.

2.3.20.4 <u>Legal or Public Holidays</u>: The dates must be stated explicitly due to differences existing between States.

2.3.20.5 <u>Long or Complicated Schedules</u>: These should not be given in a structured Item D). Such schedules should be 'split' and separate NOTAM should be issued.

2.3.21 Item D) – Day/Time Schedule – Examples

2.3.21.1 The following examples pre-suppose a correct calendar and the application of the rule that the start of the first activity in Item D) coincides with the Item B) date and time, and the end of the last activity with that in Item C). Therefore, Items B) and C) (i.e. the defined time periods) are not shown in the examples unless required for clarification.

Example 1: Repetitive event active every day:

```
D) 0700-1000
```
or
```
D) DAILY 0700-1000
```

Example 2: Repetitive event active on a certain weekday:

```
B) 0803030000 C) 0803312359
D) EVERY MON H24
```

Example 3: Activity only on specific days within the period:

```
B) 0802070000 C) 0802112359
D) 07 09 AND 11 H24
```

Example 4: Various day-periods explained by FROM-TO:

```
D) 07-11 AND 16-18 H24
```

Example 5: Combination of day-periods and time-periods:

```
D) FEB 08-28 2000-2200 AND MAR 01-05 1800-2200
```

```
D) FEB 08-28 DAILY 2000-2200 AND MAR 01-05
```

```
DAILY 1800-2200
```

```
                    D) WED SAT 1000-1400 AND SUN-TUE 1500-1800

                    D) FEB 08 10 12 1000-1600 1800-2000, 13-28 1200-
                    1900, MAR 01-05 1000-1300 AND 1500-1700
```

Example 6:   Combination of whole day-periods (H24) with part day-periods:

Activity H24 on WED and FRI, and from 0600 to 1700 on SUN:

```
                    B) 0802100600 C) 0802292359

                    D) SUN 0600-1700, WED AND FRI H24
```

or

```
                    D) 13 20 0600-1700, 16 18 23 AND 25 H24
```

Example 7:   Day-period and time-period with specific exceptions:

```
                    B) 0802020700 C) 0803161800

                    D) SAT-SUN 0700-1800 EXC FEB 17 AND MAR 09
```

or, for where alternative times apply on the excepted date:

1st NOTAM

```
                    B) 0802010300 C) 0802281200
                    D) MON-FRI 0300-1200 EXC FEB 15
```

2nd NOTAM

```
                    B) 0802151400 C) 0802151600

                    Exceptions with periods spanning midnight:

                    B) 0802041800 C) 0803150700
                    D) MON 1800-2359, TUE-FRI 0000-0700 1800-2359,
                    SAT 0000-0700
```

or

```
                    D) MON-FRI 1800-0700
```

Instead of:
D) 1800-0700 EXC SAT SUN

Example 8:   Activity from WED 1900 to FRI 0600, during 2 consecutive weeks.

```
                    B) 0806041900     C) 0806130600
                    D) WED 1900-FRI 0600
```

or

```
                    D) 04 1900-06 0600 AND 11 1900-13 0600
```

Example 9: The activity takes place every day between 2300 and 0500. The periods start on April 30 at 2300 and ends on May 05 at 0500:

```
B) 0804302300 C) 0805050500
D) APR 30 2300-2359, MAY 01-04 0000-0500 2300-
2359, 05 0000-0500
```

or
```
D) DAILY 2300-0500
```

or

```
D) 2300-0500
```

Instead of:
D) APR 30-MAY 04 2300-0500

Example 10: First period of activity starts on May 06 at 2300 and ends on May 07 at 0500 and a series of subsequent 2300-0500 periods start on May 10 at 2300 and ends on May 15 at 0500:

```
B) 0805062300 C) 0805150500
D) 06 2300-2359, 07 0000-0500, 10 2300-2359,
11-14 0000-0500 2300-2359, 15 0000-0500
```

or

```
D) 06 AND 10-14 2300-0500
```

A series of 2300-0500 periods starts on May 06 at 2300 and ends on May 10 at 0500 and the final period starts on May 10 at 2200 and ends on May 11 at 0600:

```
B) 0805062300 C) 0805110600
D) 06 2300-2359, 07-09 0000-0500 2300-2359,
10 0000-0500 2200-2359, 11 0000-0600
```

or

```
D) 06-09 2300-0500 AND 10 2200-0600
```

Example 11: If the more descriptive schedule is used, the periods of activity may have to be split into several NOTAM:

```
B) 0805062300 C) 0805101300
D) 06-09 2300-1300
```

or

```
D) 06 2300-2359, 07-09 0000-1300 2300-2359 AND 10
0000-1300
```
and
```
B) 0809112110 C) 0810310740
D) SEP 11 17-19 22 24 25 OCT 01 02 08-10 15 16 22
23 29 AND 30 2110-0740
```

or

```
NOTAM 1:
D) SEP 11 2110-2359, 12 0000-0740, 17 2110-2359,
18-19 0000-0740 2110-2359, 20 0000-0740, 22 2110-
2359, 23 0000-0740, 24 2110-2359

NOTAM 2:
SEP 25 0000-0740 2110-2359, 26 0000-0740, OCT 01
2110-2359, 02 0000-0740 2110-2359, 08 2110-2359,
09-10 0000-0740 2110-2359, 11 0000-0740

NOTAM 3:
15 2110-2359, 16 0000-0740 2110-2359, 17 0000-
0740, 22 2110-2359, 23 0000-0740 2110-2359, 24
0000-0740, 29-30 0000-0740 2110-2359, 31 0000-
0740
```

Instead of:
```
D) SEP 11 17-19 22 24 25 OCT 01 02 08-10 15 16 22 23
29 30 2110-2359, SEP 12 18-20 23 25 26 OCT 02 03 09-11
16 17 23 24 30 AND 31 0000-0740
```

Example 12:   Description of a schedule omitting the unnecessary abbreviation
for the month:

```
B) 0805051300 C) 0805271930
D) 05 07 09 1300-1600, 11-23 1330-1500 AND 24-27
1630-1930
```

Instead of:
```
D) MAY 05 07 09 1300-1600, MAY 11-23 1330-1500 AND MAY
24-27 1630-1930
```

Example 13:   Activity relative to Sunrise and/or Sunset:

```
D) SR-SS
```

```
D) SR MINUS30-SS
```

```
D) SR MINUS30-1500
```

```
D) 0800-SS
```

```
D) 0800-SS PLUS30
```

Example 14:   Periods of activity longer than 24 hours:

```
B) 0805050300 C) 0805201450
```

```
D) 05 0300-13 1400 AND 15 1800-20 1450
```

This Item D) indicates two periods of continuous activity: the first
starting on the 5th at 0300 and ending on the 13th at 1400; the
second from the 15th at 1800 to the 20th at 1450.

Example 15:   Given the following Complex/Mixed schedule:

There are several alternative ways of presenting the following information more clearly and effectively by using more than one NOTAM.

```
B) 0803170700 C) 0804230900

D) MON TUE 0700-1000 1200-1300, WED 0700-0900,
APR 01-04 1800-2000, 08 09 1700-1900, 10 H24, 11
SR MINUS30-SS AND 15 2000-17 0900 EXC MAR 23 30
```

A preferred method is to divide it into two monthly periods and, to facilitate greater PIB clarity, create a third NOTAM for the period 01-04 April in which activities are not expressed using weekday abbreviations.

For the two elements using weekday abbreviations:

NOTAM 1:

```
B) 0803170700 C) 0803311300
D) MON TUE 0700-1000 1200-1300, WED 0700-
   0900 EXC 23 30
```

NOTAM 2:

```
B) 0804070700 C) 0804230900
D) MON TUE 0700-1000 1200-1300, WED 0700-0900, 08
09 1700-1900, 10 H24, 11 SR MINUS30-SS AND 15
2000-17 0900
```

For the elements using dates:

NOTAM 3:

```
B) 0804011800 C) 0804042000
D) 1800-2000
```

Example 16:   Repetitions of a date are not allowed to avoid that any activities following later for the same date are overlooked:

```
B) 0805050800 C) 0805231500

D) 05-08 0800-1100, 09 10 0800-1100 1300 1500,
11-20 1330-1500, 21-23 0800-1100 1330-1500
```

Instead of:
D) 05-10 0800-1100, 11-20 1330-1500, 21-23 0800-1100
1330-1500, 09 10 1300-1500

2.3.22 Item E) – NOTAM Text

2.3.22.1   Item E) is free text in plain language and does not contain NOTAM Code.

2.3.22.2 In NOTAM intended for international distribution the plain language text shall be in English. For the creation of the plain language text, the decoded standard expressions contained in the NOTAM Selection Criteria shall preferably be used.

Examples:

```
E) ILS RWY 14 U/S.
E) ILS DME RWY 14 U/S.
E) DVOR/DME ZUE 112.650 MHZ/CH 75X U/S.
E) NDB MUR 310.5 KHZ FREQ CHANGED TO 312 KHZ.
E) RWY 10/28 CLSD.
E) RWY 07L/25R CLSD.
E) TWY A, B AND T CLSD.
E) ALS RWY 10 U/S.
E) EDGE LGT RWY 10/28 U/S.
E) CL LGT TWY A U/S.
E) DME CVA 112.050 MHZ/CH 57Y U/S.
```

When one part of a collocated Navaid is unserviceable, use the following:

```
E) DVOR/DME ZUE 112.650 MHZ/CH 75X, DME PART U/S.
E) TACAN BNK CH 47X (111.000 MHZ) U/S.
```

Note: For TACAN the ghost frequency shall also be provided.

2.3.22.3 The essentials of the information (i.e. translated and amplified NOTAM code Subject and Condition) shall be given in the beginning of Item E).

Example:

```
E) ACFT STANDS 25 TO 30 AND 37 TO 40 CLSD DUE TO WIP ON
APRON 1.
```

Instead of:
E) USE CAUTION WHEN TAXIING DUE TO WIP BEHIND ACFT STANDS 37 AND 40
AND FM 30M EAST OF TWY E TO STAND 20. WIP ALSO BTN ACFT STANDS 25
AND EAST OF STAND 27 ON APRON 1. APRON 2 NOT AFFECTED. ACFT STANDS
25 TO 30 AND 37 TO 40 CLSD AS CONSEQUENCE.

2.3.22.4 Item E) text should be kept as short and concise as possible and so compiled that its meaning is clear without the need to refer to another document.

Publishing NOF should endeavour not to exceed 300 characters; whilst ensuring that all essential information needed for the safe conduct of flight is included.

Example 1:

```
E) MILAN LINATE CTR. SPECIAL VFR HEL OPS MET MINIMA
REQUIREMENTS CHANGED: SPECIAL VFR HEL OPS ACCEPTED IF GND VIS
IS NOT LESS THAN 3KM. REF AIP ENR 2.1.2.23-2 ITEM 7.3.
```

Note: Reference to AIP as NOTAM is of permanent character.

Instead of:
E) REF AIP ENR 1-1-4.3 ITEM 6.3. MILAN CTR. CANCEL THE REMARK.

Example 2:

E) CARRIAGE OF 8.33 CHANNEL SPACING RDO EQPT MANDATORY FOR
ACFT OPR ABV FL195. REF AIP PAGE GEN 1.5-1 ITEM 3.

Note: Reference to AIP as NOTAM is of permanent character.

Instead of:
E) PLEASE MAKE HAND AMENDMENT IN AIP ON PAGE GEN 1.5-1 ITEM 3.
RADIO EQUIPMENT REQUIREMENTS. DELETE: 'AND FURTHER TO THE
EUROCONTROL DELAY DECISION AGREED ON 23 JUL 98' AND AMEND TO READ:
'CHAPTER 4.0 ON AIR-GROUND COMMUNICATIONS AND IN-FLIGHT REPORTING'
DELETE: 'AS OF 7 OCT 99 FOR AIRCRAFT OPERATING ABOVE FL245' AND
AMEND TO READ: 'AS OF 15 MAR 07 FOR AIRCRAFT OPERATING ABOVE FL195'
LAST PARAGRAPH CHANGE, DELETE: 'FL245' AND AMEND TO READ: 'FL195'.

<u>Example 3</u>:

….. C) PERM
E) MISSED APCH **PROC** FOR **RWY 34 LOCALIZER** AND **ILS** APCH **CHANGED**
AS FOLLOWS: CLIMB STRAIGHT AHEAD. INITIAL CLIMB TO 5000FT
AMSL. AT DME 5.5 IZS PAST THE STATION TURN LEFT. CONTINUE
CLIMB TO 7000FT AMSL. INTERCEPT RDL 261 FROM ZUE. PROCEED TO
GIPOL. REF AIP PAGE LSZH AD 2.24.10.9-1 AND 2.24.10-1.

Instead of:
….. C) PERM
E) REF AIP PAGE LSZH AD 2-24.10.9-1 AND 2-24.10.10-1. MISSED
APPROACH TO READ AS FOLLOWS: CLIMB STRAIGHT AHEAD. INITIAL CLIMB TO
5000FT. AT D5.5 IZS PAST THE STATION TURN LEFT. CONTINUE CLIMB TO
7000FT. INTERCEPT R261 FROM ZUE. PROCEED TO GIPOL.

2.3.22.5 Item E) text shall be related to one NOTAM subject only. (Except in case of a Trigger NOTAM, ref para 2.7.2.10-2.7.2.12).

<u>Example 1</u>:

NOTAM 1: E) PJE WILL TAKE PLACE ….

NOTAM 2: E) AWY G5 MINIMUM USABLE FL RAISED TO FL070.

Instead of:
E) PJE WILL TAKE PLACE WITHIN RADIUS 5KM CENTERED AT 4608N 00751E
(HUTTWIL). AWY G5 MINIMUM USABLE FL RAISED TO FL070.

<u>Example 2</u>:

NOTAM 1: E) MINIMUM SECTOR ALTITUDE SW SECTOR RAISED TO
1700FT AMSL. REF AIP AD 2-9.

NOTAM 2: E) DECLARED DIST RWY 09 CHANGED AS FOLLOWS:
TORA 2450M
TODA 2450M
ASDA 2450M
TKOF FROM INTERSECTION WITH TWY C.
REF AIP AD 2-13.

Note: Reference to AIP as the NOTAM is of permanent character.

Instead of:
E) MINIMUM SECTOR ALTITUDE SW SECTOR RAISED TO 1700FT AMSL
PLS ADD IN AIP XXXXXXXX, ON PAGE ZZZZ AD 2-9,
ITEM ZZZZ AD 2.13(TABLE FOR DECLARED DISTANCES)
A NEW ROW WITH FLW DATA:
COLUMN 1- RWY 09
COLUMN 2- TORA(M) 2450
COLUMN 3- TODA(M) 2450
COLUMN 4- ASDA(M) 2450
REMARKS: TAKE-OFF FROM INTERSECTION WITH TWY C

2.3.22.6   Item E) may contain ICAO abbreviations (Doc 8400, Ref [7]), and other abbreviations used for directions and units of measurements (e.g. N, SE, FT, GND, AMSL, NM, DEG etc.). There shall be no blank between the value and the unit of measurement (e.g. 3000FT). But a reference datum shall be separated from the unit of measurement by a blank (e.g. 3000FT AMSL). No other character (e.g. "/", "-"...) shall be used.

Frequencies indicated in MHZ shall always display all seven characters e.g. 112.650MHZ.

Frequencies indicated in KHZ display up to five characters. The '0' after the dot may be omitted e.g. 312KHZ, 310.5KHZ.

Non-common abbreviations (e.g. those abbreviations listed at GEN 2.2 in AIP but marked as 'not included in Doc 8400') shall not be used. The NOTAM users' understanding shall always be considered (e.g. use of 'CW' and 'CCW' for 'clockwise' and 'counter-clockwise' is likely to result in user confusion/query).

Examples:

E) ILS DME RWY 25R U/S.

E) CRANE PSN 500545.12N 0141556.19E ERECTED 190M S OF RWY 13/31 AXIS, 1300M BEHIND THR RWY 31, MAX ELEV 390.3M, MAX HGT 20.7M AGL.

2.3.22.7   The cardinal points and their combinations shall not be abbreviated in connection with TWY.

Example:

E) TWY A AND C **EAST** OF RWY 10/28 CLSD.

Instead of:
E) TWY A AND C E OF RWY 10/28 CLSD.

2.3.22.8   The coordinates of known subjects shall not be provided. In the case of relocations, realignments and new installations the location is usually provided by coordinates. For these cases the coordinates shall be indicated in degrees, minutes and, if required, seconds. Degrees shall always be indicated by 2 digits for N/S and 3 digits shall be used for W/E. Minutes and seconds are displayed in 2 digits. If more precision is required, the seconds are followed by a dot and tenth of seconds. The resolution shall be in accordance with Annex 15 Appendix 7 aeronautical data quality requirements.

Examples 1:

P-Area outside CTA (resolution 1 min):	`4635N 00825E`
ARP PSN (required resolution 1 sec):	`463542N 0082537E`
Enroute VOR (required resolution 1 sec):	`463542N 0082537E`
Localizer PSN (required resolution 1/10 sec):	`463542.3N 0082537.8E`

Coordinates shall be converted to degrees, minutes and seconds for the publication in order to prevent misunderstanding.

Example 2:

`4635`**`42N`**

Instead of: 4635.7N

2.3.22.9 Areas are described by coordinates. For better visualisation, coordinates are separated by hyphens and should be accompanied by location indicators, navigation aids and geographical indications such as towns or mountains. Where there are no coordinates, the name of towns or mountains should be used. Geographical indications may only be indicated as displayed on aeronautical chart.

2.3.22.10 Geographical coordinates for the lateral limits of an area are expressed in accordance with Annex 15 minimum requirements for aeronautical data:

– if inside of CTA/CTR, with resolution of 1 second; e.g. `445600N 0200941E`

– if outside of CTA/CTR, with resolution of 1 minute; e.g. `4456N 02010E`

2.3.22.11 If coordinates of an area are published in AIP or AIP SUP, the lateral limits shall not be repeated in Item E), the name of this area should be referred to, instead.

Example:

`E) DANGER AREA LY D12 ACT.`

Instead of:
E) DANGER AREA LY D12 PLACED WITHIN LATERAL LIMITS: 451700N
0201141E – 451600N 0201641E – 451300N 0201941E – 451400N 0201241E –
451700N 0201141E ACTIVE.

2.3.22.12 If coordinates of an area are not published in AIP or AIP SUP, the lateral limits should be expressed in accordance with the following:

a) Irregular shape area (defined by points)

Points defining lateral limits of an area should be enumerated in clockwise order, each point separated by a hyphen. The last and the first points of the list shall be the same. Coordinates may be followed, when available, by geographical indications between brackets (see paragraph 2.3.22.9).

Example:

`E) AIR DISPLAY WILL TAKE PLACE WI LATERAL LIMITS: 443838N`
`0200818E (NDB OBR) - 444508N 0201455E (VILLAGE JAKOVO) -`
`443445N 0202447E - 443838N 0200818E (NDB OBR).`
`F) GND   G) 3000FT AMSL)`

b) Circular shape area

One point defining center of the circle that may be complemented (in brackets) by geographical indications (see paragraph 2.3.22.9) and radius.

Example:

```
E) AIR DISPLAY WILL TAKE PLACE WITHIN RADIUS 5KM CENTERED AT
4645N 00705E (ECUVILLENS AD).
F) GND   G) 5000M AMSL)
```

The lateral limits of the affected area can also be defined by the appropriate radial and distance from a Navaid.

2.3.22.13 Whenever an airspace is affected (relevant scope AE, E, AW and W), the location reference (e.g. aerodrome, identification, area) has to be mentioned in Item E.

2.3.22.14 For airspace organisation subjects, the name of airspace organisation has to be present whenever it is intended also as Enroute NOTAM (scope E and AE).

Examples:

```
E) TMA ZURICH SECTOR 14 DEACTIVATED.

E) CTR ZURICH SECTOR 2 ADDITIONALLY ACT.

E) APP GENEVA 131.325 MHZ NOT AVBL.

E) AWY G5 NOT AVBL BTN WIL AND FRI.

E) RNAV RTE N850 NOT AVBL BTN GERSA AND ODINA.
```

2.3.22.15 As entries in Items F) and G) are only required for Navigation Warnings (QW) and Airspace Reservations (QR) and the 'Lower/Upper' indication in Item Q) is usually not visible in a PIB, inclusion of applicable vertical limits in Item E) shall be considered whenever appropriate, e.g. for changes of the Airspace Organisation (QA subjects).

2.3.22.16 Until ICAO guidance is issued, when there is a need to include an e-mail address in the Item E) text, the @ symbol shall be represented by the word 'at' within brackets i.e. (AT).

2.3.22.17 Item E) should be composed by the Publishing NOF in such a way that it will serve for direct Pre-flight Information Bulletin entry without requiring additional processing by the receiving Unit.

2.3.22.18 Unclear and/or incomplete NOTAM Text shall be avoided.

Example 1:

```
… C) PERM
E) ULTRALIGHT AREA SAN TEADORA 5048N 09339E COMPLETELY
   WITHDRAWN. REF AIP ENR 5.5.3.
```

Instead of:
….. C) PERM
E) WARNING WITHDRAWN REF AIP ENR 4-2-7.3 PARA 6.5.

2.3.22.19 AIP references, in NOTAM other than PERM, should be avoided (para 2.3.22.4 above also refers).

<u>Example</u>:

E) TACAN ALA CH 88X (114.100 MHZ) U/S.

Instead:
E) TACAN ALA CH 88X (114.100 MHZ) U/S. REF AIP ENR 4-1.

However, when required, AIP references shall include AIP section/sub-section/paragraph numbers and not the page number(s) alone.

2.3.22.20 Dates in Item E) shall be presented in day-month-year sequence DD MMM YYYY (e.g. for Trigger NOTAM, AIRAC NIL NOTAM) in the following understanding:

DD – to designate a day in a month, two digits shall always be used.

MMM – to designate the month with three-letter abbreviation from ICAO Doc 8400: JAN, FEB … NOV, DEC.

YYYY – to designate the year with four digits: 2008, 2009, 2010 etc.

Example:

E) TRIGGER NOTAM - AIRAC AIP SUP 2/08 WEF **13 MAR 2008** TIL 09 APR 2008: ANNEX LY TO ROUTE AVAILABILITY DOCUMENT.

2.3.22.21 Schedule inside Item E) shall be presented in accordance with Item D) rules.

Example:

E) ATC OPERATING HOURS CHANGED AS FOLLOWS:
JAN 01 03 05 1000-1600 JAN 02 04 06-31 0800-2200.

2.3.23   Items F) and G) – Lower and Upper Limit

2.3.23.1 Lower and Upper limits shall be inserted in Items F) and G) only for Navigation Warnings ('QW') and for Airspace Reservations ('QR').

2.3.23.2 If entries are required (ref 2.3.23.1), then both Items F) and G) shall always be included.

2.3.23.3 Items F) and G) shall contain an altitude (Above Mean Sea Level – AMSL) or a height (Above Ground or Sea or Surface Level – AGL) expressed in meters or feet, or a Flight Level (always expressed in 3 digits). In addition, SFC (surface) and GND (ground) may be used in Item F) as well as UNL (unlimited) in Item G).

2.3.23.4 Reference datum (AGL or SFC or AMSL) and units of measurement (FT or M) shall be clearly indicated.

2.3.23.5   Only a single entry is permitted in each Item, i.e. G) 10000FT (3280M) AGL shall not be used.

2.3.23.6   There shall be no blank between the value and the unit of measurement (e.g. 3000FT). But a reference datum shall be separated from the unit of measurement by a blank (e.g. 3000FT AMSL).

2.3.23.7   Abbreviations FT or M shall be divided from AGL or AMSL by a blank character. No other character (e.g. "/", "-"...) shall be used. Correct annotation is '3000FT AMSL' (i.e. '3000FT/AMSL' shall not be used).

2.3.23.8   Acceptable entries and formats are therefore as follows:

Item F):	Item G):
SFC	UNL
GND	
XXXXXFT AGL	XXXXXFT AGL
XXXXXFT AMSL	XXXXXFT AMSL
XXXXXM AGL	XXXXXM AGL
XXXXXM AMSL	XXXXXM AMSL
FLXXX (see 2.3.23.9)	FLXXX (see 2.3.23.9)

2.3.23.9   The Item Q) default FL values 000 and 999 shall not be used in Items F) and G). The abbreviations GND or SFC shall be used in Item F) and UNL in Item G) instead.

2.3.23.10   The values in qualifiers 'Lower' and 'Upper' of the Item Q) must correspond to the flight levels or altitudes specified in Items F) and G). If Items F) and/or G) are expressed as a height, the values specified in the 'Lower' or 'Upper' qualifiers in Item Q) shall indicate the equivalent FL and may therefore require calculation. For detailed conversion procedures see para 2.3.10.

2.3.23.11   Where an event is notified in a form such as 'ACTIVITY UP TO FL040, AFTER ATC APPROVAL UP TO FL080', the higher value (FL80) shall be used in Item G) and the 'Upper' qualifier in Item Q) shall read '080'.

2.3.23.12   Similarly, where the lower limit of activity is variable, the lowest limit shall be used in Items Q) and F).

2.4   Creation of NOTAMR and NOTAMC

2.4.1   General Procedures Related to NOTAMR and NOTAMC Creation

2.4.1.1   NOTAMR and NOTAMC are issued in the same series as the NOTAM to be replaced or cancelled.

2.4.1.2 NOTAMR and NOTAMC respectively replace and cancel only one NOTAMN or NOTAMR.

Example 1: `A0124/08 NOTAMR A0106/08`

Example 2: `A0234/08 NOTAMC A4567/07`

2.4.1.3 NOTAMR and NOTAMC deal with precisely the same subject as the NOTAM to be replaced or cancelled. Therefore the 2nd and 3rd letters of the NOTAM Code in Item Q) shall be the same as those in the NOTAM to be replaced or cancelled.

2.4.1.4 NOTAMR and NOTAMC have the same Item A) contents as the NOTAM to be replaced or cancelled.

2.4.1.5 The date-time group in Item B) of a NOTAMR or NOTAMC shall be the actual date and time that this NOTAMR or NOTAMC is created.

i.e. NOTAMR and NOTAMC shall take effect immediately and no future start of coming in force is permitted. The replaced or cancelled NOTAM cease to be valid from the very moment their replacing NOTAMR or NOTAMC are issued. This is done to assure the correct processing in all systems no matter their design.

2.4.1.6 One of the following procedures shall be applied instead of issuing a NOTAMR or NOTAMC with Item B) in the future.

2.4.1.7 If the condition described in a NOTAM to be replaced is to remain valid for a period before being changed, then a NOTAMR shall be issued for the period up to the intended date and time of the change provided the NOTAM to be replaced is in force at the time of replacement. This NOTAMR shall immediately replace the existing NOTAM and shall notify the same conditions but with a changed Item C). A NOTAMN detailing the intended change in condition shall then be issued with a future date and time in Item B).

Example:

```
261637 LIIAYNYX
(B1826/08 NOTAMN
Q)LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0801150500 C) 0803311100 EST
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

On MAR 01 it is known that DTHR will be 200 M only from MAR 07 until about APR 15. NOTAM are issued as follows:

```
011035 LIIAYNYX
(B1893/08 NOTAMR B1826/08
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0803011035 C) 0803062359
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

```
011035 LIIAYNYX
(B1894/08 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0803070000 C) 0804152359 EST
E) RWY 14 DTHR 200 M. REVISED DECLARED DIST AS FLW: ……)
```

If the NOTAM to be replaced is not in force at the time of replacement, 2.4.1.9 applies.

2.4.1.8   If the condition described in a NOTAM to be cancelled is to remain valid for a period before Item C) is reached, then a NOTAMR shall be issued with the new end time in Item C).

Example:

```
261637 LIIAYNYX
(B1826/08 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B)0801150500 C) 0803311100 EST
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

On MAR 01 it is known that the RWY will be back to normal from MAR 07. NOTAM is issued as follows:

```
011035 LIIAYNYX
(B1893/08 NOTAMR B1826/08
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0803011035 C) 0803062359
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

2.4.1.9   If the condition described in a NOTAM to be replaced is a postponement, a correction of Item B), an interruption or a temporary suspension (taking place immediately) of the present situation, then a NOTAMC shall be issued to immediately cancel the NOTAM. This shall be followed by a NOTAMN dealing with the new situation and a new Item B).

Example:

```
(W0280/08 NOTAMN
Q) HECC/QRDCA/IV/BO/W/000/040/3024N03141E003
A) HECC B) 0806111300 C) 0806201500
D) 11-13 1300-1800, 15-20 0800-1500
E) D-AREA HE-D9 ACT.
F) GND G) FL040
```

On JUN 13 at noon D-Area is deactivated immediately and will be active again on Jun 15. NOTAM are issued as follows:

```
131213 HECAYNYX
(W0285/07 NOTAMC W0280/07
Q) HECC/QRDXX/IV/BO/W/000/040/3024N03141E003
A) HECC B) 0706131213
E) D-AREA HE-D9 DEACTIVATED.

121214 HECAYNYX
(W0286/07 NOTAMN
Q) HECC/QRDCA/IV/BO/W/000/040/3024N03141E003
A) HECC B) 0706150800 C) 0706181600
D) 15-18 0800-1600
E) D-AREA HE-D9 ACT.
F) GND G) FL040
```

2.4.1.10 If the condition described in a NOTAM to be replaced is a temporary suspension or change of the present situation for a certain period in the future, then a NOTAMR shall be issued to immediately replace the NOTAM. This shall be followed by a

NOTAMN dealing with the temporary change. NOTAMR to specify the dates/times of activation for the periods the situation is as in the replaced NOTAM and NOTAMN to cover dates/times dealing with the different situation. No NOTAMN is issued in the case of a temporary 'back to normal' situation.

Example for a temporary suspension taking place in the future:

```
261637 LIIAYNYX
(B1826/08 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0801150500 C) 0803311100 EST
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

On FEB27 it is known that the RWY will be made available for normal operations for the next weekend (MAR 01+02):

Option 1 (Item D) including dates after the suspension):
```
271035 LIIAYNYX
(B1893/08 NOTAMR B1826/08
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0802271035 C) 0803312359
D) FEB 27 1035-2359, FEB 28-29 MAR 03-31 0000-2359
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

Option 2 (Separate NOTAM for dates after the suspension):
```
271035 LIIAYNYX
(B1893/08 NOTAMR B1826/08
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0802271035 C) 0802292359
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

```
271036 LIIAYNYX
(B1894/08 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0803030000 C) 0803312359 EST
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

For option 2, the second NOTAM should also be issued as soon as possible but may also be done after FEB 27 (latest before Item B).

Depending on how well the situation is known, NOTAMR may deal only with the situation until the change occurs, followed by two NOTAMN. One to cover the period for the changed situation and one for the period afterwards.

Example for a temporary change taking place in the future:

```
261637 LIIAYNYX
(B1826/08 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0801150500 C) 0803311100 EST
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

On FEB27 it is known that the DTHR will be reduced to 150 M for the next weekend (MAR 01+02):

```
Option 1:
271035 LIIAYNYX
(B1893/08 NOTAMR B1826/08
```

```
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0802271035 C) 0803312359
D) FEB 27 1035-2359, FEB 28-29 MAR 03-31 0000-2359
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)


271035 LIIAYNYX
(B1894/08 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0803010000 C) 0803022359
E) RWY 14 DTHR 150 M. REVISED DECLARED DIST AS FLW: ……)


Option 2:
271035 LIIAYNYX
(B1893/08 NOTAMR B1826/08
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0802271035 C) 0802282359
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)


271035 LIIAYNYX
(B1894/08 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0803010000 C) 0803022359
E) RWY 14 DTHR 150 M. REVISED DECLARED DIST AS FLW: ……)


271035 LIIAYNYX
(B1895/08 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B) 0803030000 C) 0803312359 EST
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……)
```

2.4.1.11   Any NOTAM which includes an 'EST' shall be replaced by NOTAMR or cancelled by NOTAMC before the 'estimated' end date specified in Item C).

2.4.1.12   Refer also to the procedures for handling 'Multipart' NOTAM at Chapter 1.

2.4.2   Specific Procedures Related to NOTAMR Creation

2.4.2.1   NOTAMR are Replacement NOTAM.

2.4.2.2   NOTAM which are to become invalid before their given End of Validity, or did not have a defined End of Validity (i.e. have 'EST' or 'PERM' in Item C) may be replaced, provided they are 'in force' at the time of replacement.

2.4.3   Specific Procedures Related to NOTAMC Creation

2.4.3.1   NOTAMC are Cancellation NOTAM.

2.4.3.2   NOTAM which are to become invalid before their given End of Validity, or did not have a defined End of Validity (i.e. have 'EST' or 'PERM' in Item C) may be cancelled at any time.

2.4.3.3   NOTAMC shall be published whenever NOTAM are incorporated in an AIP AMDT (see chapter 2.6.3).

2.4.3.4   NOTAMC Qualifier 'NOTAM Code' shall be as follows:

Subject: 2nd and 3rd letters shall be identical to the original NOTAM (ref para 2.4.1.3)

Condition: permitted 4th and 5th letters are as follows:

Q - - AK   =   RESUMED NORMAL OPS

Q - - AL   =   OPERATIVE SUBJECT PREVIOUS CONDITION

Q - - AO   =   OPERATIONAL

Q - - CC   =   COMPLETED

Q - - XX   =   OTHER (Plain Language – ref para 2.4.3.8)

2.4.3.5   NOTAMC Qualifiers 'Traffic', 'Purpose', 'Scope', 'Lower/Upper' and 'Coordinates/Radius' shall be identical to the cancelled NOTAM. Maintaining the original qualifiers allows additional use of NOTAMC for the preparation of 'Updates' to Pre-flight Information Bulletins.

2.4.3.6   NOTAMC shall not contain Items C), D), F) and G).

2.4.3.7   For all NOTAMC, the text of the decoded NOTAM Code shall be inserted in Item E) together with details of the NOTAM subject.

Example: NOTAM Code = QNVAK

```
Item E) = VOR DKB RESUMED NORMAL OPS.
```

2.4.3.8   In order to facilitate work in manual environments, NOTAMC, which are to be followed immediately by a NOTAMN (instead of using a NOTAMR), shall contain XX as 4th and 5th letters of the NOTAM Code and, at the end of the text in Item E), the remark: 'NEW NOTAM TO FOLLOW'.

Example: NOTAM Code = QMRXX

```
Item E) = RWY 07L/25R NEW NOTAM TO FOLLOW.
```

2.4.3.9   Cancellation of NOTAM solely on the basis of a Checklist is not allowed (ref para 2.2.13).

2.4.3.10 Once the immediate cancellation has been effected, the cancelling NOTAMC ceases to have validity.

2.5   Checklist Production

2.5.1   Checklists – General

2.5.1.1   Checklists are issued as a NOTAM in the series that they refer to.

2.5.1.2   A separate Checklist shall be issued for each NOTAM Series.

2.5.1.3   The first Checklist in a new NOTAM series shall be issued as a NOTAMN.

2.5.1.4   Subsequent Checklists shall be issued as NOTAMR, replacing the previous Checklist with immediate effect. Consequently Item B) is the issuing time of the Checklist and supersedes the previous one immediately.

2.5.1.5   Item A) shall contain the FIR, or a list of all FIR, covered by the Checklist or the location indicator of the issuing non-governmental agency. Third and fourth letters 'XX' shall not be used.

2.5.1.6   Item C) shall contain the estimated (EST) end of validity, normally not more than one month after the Checklist is issued.

2.5.1.7   Checklists shall contain the numbers of the NOTAM incorporated in a normal AIP AMDT or AIP SUP until the time that these NOTAM are specifically cancelled by the publication of a NOTAMC.

2.5.2   Checklist Qualification – Item Q)

2.5.2.1   Qualifier 'FIR' shall be either:

- the FIR indicator, or

- the country or non-governmental agency nationality letters followed by 'XX' if there is more than one FIR concerned, or

- the country or non-governmental agency nationality letters of the Publishing NOF followed by 'XX' if publishing for FIR in different countries.

2.5.2.2   Qualifier 'NOTAM Code' shall be the special dedicated code 'QKKKK'.

2.5.2.3   Qualifiers 'Traffic', 'Purpose' and 'Scope' shall be given the artificial value 'K'.

2.5.2.4   Qualifiers 'Lower'/'Upper' shall be the default values '000/999'.

2.5.2.5   Qualifier 'Geographical Reference' shall always contain the geographical co-ordinates of the centre of the FIR(s) listed in Item A), followed by the default radius '999'.

Example: `Q) LIXX/QKKKK/K/K/K/000/999/4323N01205E999`

2.5.2.6   Qualifiers 'QKKKK' (NOTAM Code) and 'K' ('Traffic', 'Purpose', 'Scope') are used to allow selective retrieval of the Checklist. This also prevents the Checklist from appearing in a Pre-flight Information Bulletin.

2.5.3   Checklist Format – Item E)

2.5.3.1   Item E) shall be divided into two sections.

2.5.3.2   First Section, identified by the keyword 'CHECKLIST'

   a)   This contains the list of the valid NOTAM numbers which have been promulgated in the same series as the Checklist, in a specific format. Note that the list shall not contain the number of the replaced NOTAM checklist nor its own NOTAM checklist number.

   b)   The text in Item E) shall start with the word 'CHECKLIST'

   c)   The numbering of NOTAM is grouped by year (indicated by 4 digits) using the word 'YEAR' plus '=' sign, followed by the year of publication without blanks (e.g. YEAR=1999)

   d)   Each NOTAM number (always 4 digits) is separated by a blank with no other punctuation mark.

   e)   Each indicator of a different year shall start on a new line.

2.5.3.3   Second Section, identified by the keywords 'LATEST PUBLICATIONS'

   a)   This contains the list of the latest publications issued, in a format suitable for manual processing.

   Example:

```
A0467/08 NOTAMR A0396/08
Q) LIXX/QKKKK/K/K/K/000/999/4323N01205E999
A) LIBB LIMM LIRR B) 0803310900 C) 0804300900EST
E) CHECKLIST
YEAR=2006 0244 0288 0511
YEAR=2007 0104 0347 0601 0653 0687
YEAR=2008 0004 0073 0109 0256 0312 0315 0394 0418 0425 0447
0459 0464 0465
LATEST PUBLICATIONS
AIRAC AIP AMDT 4/08 EFFECTIVE 10 APR 2008
AIP SUP 27/08
AIP AMDT 513
AIC A012/08
```

   b)   Additional possibilities to differentiate between IFR or VFR publications (volumes) can be stated, if so required:

```
AIP SUP VFR 015/08
```

```
AIP SUP IFR 38/08
```

```
AIRAC AIP AMDT IFR 5/08 EFFECTIVE 08 MAY 2008
```

   Note: Whenever the numbering of AIP AMDT takes place on a yearly basis, a reference to the year of publication will be added to the number.

2.5.4   Checklist Errors

2.5.4.1   When the publication of the Checklist contains an error, the following procedures will apply.

2.5.4.2   Whenever a valid NOTAM number was omitted from the Checklist:

a)   if the omitted NOTAM is in force, a NOTAMR shall be issued replacing the omitted NOTAM with the new number;

b)   if the omitted NOTAM is not yet in force, a NOTAMC and NOTAMN shall be issued.

This procedure will allow consistency of the data in the database of all recipients, whatever the method of processing of Checklists.

2.5.4.3   Whenever an invalid NOTAM number was erroneously inserted in the Checklist, a revised Checklist (NOTAMR replacing the erroneous Checklist) will be published without the invalid NOTAM number (no correct version).

2.6   Publication of Information by NOTAM, AIP Amendment or AIP Supplement

2.6.1   Permanent information shall not be distributed by means of a NOTAM only. This information shall be incorporated in an AIP Amendment.

2.6.2   Publication of permanent information by NOTAM

2.6.2.1   When the urgency of publication of an Amendment to the AIP is such that the 'normal' AIRAC or Non-AIRAC Amendment publication is considered to be unsuitable, the responsible NOF will issue a NOTAM 'PERM' according to the following rules.

2.6.2.2   Item Q) shall be completed according to the NOTAM Selection Criteria.

2.6.2.3   Item B) of the NOTAM shall contain the effective date of the change.

2.6.2.4   Item C) of the NOTAM shall contain the term 'PERM' to indicate that the change itself is of a permanent nature. Note that Item C) shall never include the expected publication date or the effective date of the Amendment.

2.6.2.5   Item E) shall contain the operational changes as for normal NOTAM. Special care shall be taken to assure that the phrasing is clear without AIP consultation. For the benefit of users specifically interested in NOTAM that will later be transferred to the AIP, a reference to the AIP is added at the end of Item E).

AIP references shall include AIP section/sub-section/paragraph numbers, not the page number(s) alone.

For examples refer to paragraphs 2.3.22.4, 2.3.22.5 example 2, 2.3.22.18 and 2.3.22.19.

2.6.2.6   In cases where a NOTAM is issued to correct a mistake in an AIP AMDT, Item E)
shall remind of the operational content of the AMDT and not only of the mistake.

Example text shall read correctly:

```
E) RWY 08/26 EXTENSION, AIRAC AIP AMDT 10/08 PART AD: EGNX 2-
12 RWY 08 READ 1850M INSTEAD OF 1805M.
```

Instead of:
'E) AIRAC AIP AMDT 10/08 PART AD : EGNX 1-12 RWY 08 READ 1850M
INSTEAD OF 1805M'

This allows users to be aware of the subject when reading the PIB and to refer to
the AIP AMDT content only if necessary.

2.6.3   Incorporation of NOTAM information in AIP Amendment

2.6.3.1   Permanent information should be incorporated in AIP within 3 months after
NOTAM publication. As re-issuing of NOTAM with the same contents is not
permitted, the interim use of an AIP SUP should be considered. (ICAO Doc 8126
Ref. [2] paragraph 6.1.3 and Table 6-1 refers).

2.6.3.2   When permanent (PERM) information has been published in a NOTAM, the
NOTAM will require cancellation after an appropriate AIP Amendment has been
issued to formally amend the AIP (ref para 2.4.3.3).

In this case, the NOF shall issue a NOTAMC which cancels the NOTAM 'PERM',
15 days after the effective date of the AIP Amendment that contains the 'PERM'
information.

Note 1: 'Effective date' in this instance can be equal to an AIP Amendment
publication date. This broadens the Annex 15 use of this expression which relates
currently to AIRAC AIP Amendments only.

Note 2: It is assumed that the AIP Amendments will be available at all receiving
units by the time the NOTAMC is sent.

2.6.3.3   The NOTAMC shall contain in Item E) a reference to the AIP Amendment that
incorporates the originally published NOTAM.

Example:

```
'INFORMATION INCORPORATED IN AIP AMDT 4/08 WEF 14 APR 2008
```

2.6.3.4   The numbers of the NOTAM incorporated in the AIP Amendment shall be
published on the cover page of the AIP Amendment.

2.6.3.5   The date on which NOTAMC will be issued to cancel NOTAM incorporated in the
AIP Amendment shall be published on the cover page of the AIP Amendment.

Example: `'NOTAM incorporated to this AMDT will be cancelled by`
`NOTAMC on the 29 APR 2008'.`

2.6.4 Incorporation of NOTAM information in AIP Supplement

2.6.4.1 Publication of an AIP Supplement to replace and/or modify information in an existing NOTAM may occur at any time. A Trigger NOTAMN shall be published to refer to this AIP Supplement (ref para 2.7.4).

2.6.4.2 The previously published NOTAM containing the affected information shall be cancelled by a NOTAMC.

2.7 Trigger NOTAM and Related Procedures

2.7.1 Trigger NOTAM – Definition

2.7.1.1 NOTAM used to announce the existence and subject contents of AIRAC AIP Amendments or AIP Supplements of operational significance are referred to as 'Trigger NOTAM'.

2.7.1.2 The text of Trigger NOTAM is included in Pre-flight Information Bulletins (PIB) to ensure that pilots and operators are advised or reminded that permanent changes of operational significance take effect from the given date or that details of temporary changes of operational significance are to be found in an AIP Supplement.

2.7.2 Trigger NOTAM – General Rules

2.7.2.1 AIRAC AIP Amendments and AIRAC AIP Supplements shall always be triggered by a NOTAM. Note that information concerning any circumstances listed in Annex 15 (Ref. [1]), Appendix 4, Parts 1 and 2, shall be disseminated under the regulated 'AIRAC' system, either as an AIRAC AIP Amendment or as an AIRAC AIP Supplement.

2.7.2.2 The text in Item E) should not exceed 300 characters and must always start with the words "TRIGGER NOTAM" (followed only in the case of an AIP Amendment by the abbreviation PERM), a reference number of the published AIP Amendment or AIP Supplement concerned, the effective date and a brief description of its content. Effective time will be omitted in Item E) unless it differs from the default AIRAC effective time of 0000 UTC.

2.7.2.3 Trigger NOTAM must come in force on the effective date and time of the Amendment or Supplement they refer to. The Trigger NOTAM shall be issued as soon as possible, preferably at the publication date of the AIRAC AIP Amendment or the AIP Supplement.

2.7.2.4 Trigger NOTAM shall remain in force for 14 days.

Example:

B) 0801170000 (AIRAC effective date and time)

C) 0801310000 (AIRAC effective date and time + 14 days)

2.7.2.5   Trigger NOTAM shall be issued in the appropriate NOTAM series, according to the information to be promulgated.

2.7.2.6   Trigger NOTAM shall follow the normal NOTAM procedures (but see following paragraphs for exceptions).

2.7.2.7   The NOTAM Code 2nd and 3rd letters (= 'Subject') shall be selected from the NSC and shall never be 'XX'. If no suitable 2nd and 3rd letter combination exists then use 'FA' for Aerodrome or 'AF' for FIR.

2.7.2.8   The NOTAM Code for a Trigger NOTAM shall always contain 'TT' as 4th and 5th letters (= 'Condition'). This exclusive 'TT' 'Condition' indicator shall be used with all subjects of the NOTAM Codes, even if not explicitly listed in the NSC tables.

2.7.2.9   The exclusive 'TT' 'Condition' indicator can be used to retrieve specific Trigger NOTAM from any Publishing NOF, and can additionally be used for the inclusion (or non-inclusion) of Trigger NOTAM in PIB, at a specific time before their effective date.

2.7.2.10   In the case of Amendments or Supplements containing information dealing with different subjects and/or locations, a single Trigger NOTAM dealing with multiple subjects and/or locations may be issued [Note exception to Basic Rule – ref para 2.2.4].

2.7.2.11   For FIR, Publishing NOF may group all the information that relates to one or several FIR, regardless of the subject, in order to reduce the amount of NOTAM to be published [Note exception to Basic Rule – ref para 2.2.4].

Example:

```
Q) LEXX/QAETT/IV/BO/E/065/660/4229N00152E999
A) LECB LECM B) 0702150000 C) 0703010000
E) TRIGGER NOTAM - PERM AIRAC AIP AMDT 2/07 WEF 15 FEB 2007.
CHANGES   TO   AIRSPACE   CLASSIFICATION   AND   UPPER   LIMIT   OF
CONTROLLED AIRSPACE.
```

2.7.2.12   For Aerodromes, a separate Trigger NOTAM shall be issued for each aerodrome. Different subjects relating to the same aerodrome, may however be grouped in the same NOTAM [Note exception to Basic Rule – ref para 2.2.4].

Example:

```
Q) EFIN/QPATT/I/BO/A/000/999/6031N02216E005
A) EFTU B) 0702150000 C) 0703010000
E) TRIGGER NOTAM-PERM AIRAC AIP AMDT 2/07 WEF 15 FEB 2007.
CHANGES TO STAR and to WGS 84 coordinates.
```

2.7.2.13   In the case of Amendment or Supplements containing information about a new location indicator or a changed one, the related Trigger NOTAM has to be issued as FIR information: Scope E, Item A) location indicator of the FIR affected and Item E) information about the new or changed location indicator. Other information related to this aerodrome and subject to trigger procedures is published in accordance with 2.7.2.12, Item A to contain the new location indicator.

2.7.2.14   In the cases described in paragraphs 2.7.2.10-2.7.2.12, the NOTAM qualifiers 'Traffic', 'Purpose' and 'Scope' shall be filled according to the subject of highest operational importance.

When grouping different subjects it may happen that the subject of highest operational importance does not cover qualifiers 'Traffic' and 'Scope' for all the subjects. For example, the Q-lines for two AD subjects (ILS, VFR APCH PROC) read as following: …/QICTT/I/BO/A/… and …/QPKTT/V/BO/A…. Whichever is taken as highest, both traffic types (I and V) concerned are never covered. In this special case a deviation from NSC is permitted to guarantee necessary bulletin entries.

Example: In the following case, the 'Traffic' qualifier 'IV' is a combination to cover both subjects (QICTT and QPKTT):

```
Q) EFIN/QICTT/IV/BO/A/000/999/6240N02937E005
A) EFJO B) 0801170000 C) 0801310000
E) TRIGGER NOTAM - PERM AIRAC AIP AMDT 91/08 WEF 17 JAN 2008.
INTRODUCTION OF ILS RWY 28 AND REVISED VFR APCH PROC.
```

2.7.3 Trigger NOTAM relative to AIRAC AIP AMDT

2.7.3.1 AIRAC Amendments represent permanent changes to the AIP on a predefined date.

2.7.3.2 Effective Date: AIRAC AIP Amendments become effective on the AIRAC cycle date. Item B) shall always contain the AIRAC effective date and time.

2.7.3.3 Example:

```
Q) LOVV/QARTT/I/BO/E/245/999/4720N01330E999
A) LOVV B) 0801170000 C) 0801310000
E) TRIGGER NOTAM - PERM AIRAC AIP AMDT 3/08 WEF 17 JAN 2008.
IMPLEMENTATION OF NEW ATS ROUTE UA15.
```

Note that the term 'PERM' is inserted in Item E) to stress that Item C) contains an artificial end-date and that the information is of a permanent nature.

2.7.4 Trigger NOTAM relative to AIP SUP (AIRAC and Non-AIRAC)

2.7.4.1 Whilst current ICAO SARPs do not specify a requirement for Non-AIRAC AIP Supplements to be triggered, Publishing NOF shall trigger all Operationally Significant AIP SUP to ensure that all relevant elements of the integrated aeronautical information package are available for inclusion in PIB.

2.7.4.2 Effective Date: AIP Supplements become effective at the date and time stated in the Supplement. Information to be published under the AIRAC system does not always start on an AIRAC cycle date (e.g. major works, large air exercises etc. ...). Consequently, both the AIP Supplement and the Item B) of the Trigger NOTAM shall contain the effective date and time of the start of the information.

2.7.4.3 Triggering of AIRAC information in Non-AIRAC Supplements: Due to time constraints, AIP Supplements are sometimes published to promulgate information that should have been published as an AIRAC AIP Supplement. In such exceptional cases, the operational nature of the information shall prevail and a Trigger NOTAM shall be issued for this Non-AIRAC AIP Supplement. The 'Subject' and 'Condition' shall relate the information to at least the 'Purpose' 'BO', according to the NOTAM Selection Criteria.

2.7.4.4   Period of Validity: The general rule as stated in Para 2.7.2.4 will apply. However, if the information has a duration that is shorter than 14 days, Item C) shall reflect the date and time when the information published in the AIP Supplement will expire. If the information has a duration that is longer than 14 days, the period for which the SUP is in force shall be indicated in Item E).

2.7.4.5   Example 1:

```
Q)EFIN/QRDTT/IV/BO/W/000/040/6637N02825E016
A) EFIN B) 0702152200 C) 0702201200
E)TRIGGER NOTAM - AIP SUP 68/07 WEF 15 FEB 2007.
TEMPO DANGER AREA EF D148 SALLA ACT.
F) SFC G) 4000FT AMSL
```

Example 2:

```
Q) EFIN/QRDTT/IV/BO/W/000/040/6637N02825E016
A) EFIN B) 0801172200 C) 0801312200
E) TRIGGER NOTAM - AIP SUP 68/08 WEF 17 JAN 2008 TIL 20 FEB
2008. TEMPO DANGER AREA EF D148 SALLA ACT.
F)SFC G)4000FT AMSL
```

2.7.4.6   Supplements requiring activation: Some (AIRAC) SUP require activation by NOTAM, such as: description of major works at aerodromes, establishment of large-scale military exercise areas or other related (AIRAC) SUP covering work progress or modifications.

These SUP usually cover long periods and are published with remarks such as: 'detailed dates and times of activation will be published by NOTAM', 'individual phases will be activated by NOTAM", 'operational limitations will be published by NOTAM'.

Such (AIRAC) SUP are triggered according to procedures for Trigger NOTAM.

If required, one or more additional activation NOTAM are issued according to NOTAM procedures for the periods the restrictions apply.

2.7.5   Notification of changes to AIP SUP

2.7.5.1   Changes: Any change to an AIP Supplement and its associated Trigger NOTAM, shall be published by the Publishing NOF in a way that the information itself is always clear and without any ambiguities.

Normally, changes to an AIP Supplement (such as corrections) are announced by replacing the AIP Supplement in due time by another Supplement. The procedure described in 2.7.5.3 shall be applied to announce the cancellation of the replaced SUP. The new SUP will be triggered according to the normal procedure.

The same procedure applies to Supplements of 'unknown' or 'estimated' duration or in the case of notifications of a postponed end date/time.

If time constraints do not allow a replacement by another SUP, the change is published by NOTAM. Refer to 2.7.5.2 for details.

2.7.5.2 <u>Notification of changes by NOTAM</u>: Changes on short notice as well as temporary suspensions of a SUP are published by NOTAM. The Q-line is completed according to normal NOTAM rules. Item B) is the effective date of the Supplement or current date/time, Item C) the published end of validity of the SUP. If the change is only of temporary nature, Item C) is limited to the validity of the change. Apart from the change, Item E) contains a reference to the Supplement.

Example:

```
(A0115/08 NOTAMN
Q) ESAA/QMDCH/IV/BO/A/000/999/5739N01217E005
A) ESGG B) 0804120637 C) 0805112359
E) RWY 03/21 TORA 2800M. REF AIRAC AIP SUP 14/08.
```

Long-term changes issued by NOTAM shall be replaced by a SUP in due time.

2.7.5.3 <u>Notification of an earlier end date or time</u>: exceptionally, the original end date specified in the AIP SUP may be changed to an earlier date by NOTAM. If such earlier cancellations are known well in advance they are treated as changes to a SUP and the rules of paragraph 2.7.5.1 apply.

The cancellation of a SUP on short notice is always published by NOTAMN (ref 2.7.5.3.1). If necessary, in addition to the NOTAMN the associated Trigger NOTAM has to be cancelled or replaced (ref 2.7.5.3.2) and the validity of any other existing NOTAM referring to the SUP must be verified (ref 2.7.5.3.3).

2.7.5.3.1 A NOTAMN shall be issued according to NOTAM procedures to announce the cancellation of a SUP on short notice.

Item B) is the new expiring date/time of the SUP.

Item C) is the original end of validity of the SUP or the next AIP SUP checklist or printed plain-language list of valid NOTAM or AIP GEN 0.3 if it serves as checklist of SUP, whichever is the most suitable means.

<u>Example</u>:
```
NOTAMN 151830 EUECYIYN
A0127/08 NOTAMN
Q) ESAA/QFALT/IV/BO/A/000/999/5739N01217E005
A) ESGG B) 0804230000 C) 0805112359
E) REF AIRAC AIP SUP 14/08 WORKS COMPLETED. RESTRICTIONS ON
THE USE OF AERODROME NO LONGER IN FORCE.
```

Note that Item E) shall always contain text clearly indicating that the planned end date has been brought forward.

Note that if the AIP SUP was not originally triggered, a NOTAMN may also be issued exceptionally to announce the cancellation in accordance with the above validity and Item E) procedures.

Note the use of Condition 'LT' (instead of 'TT') in the NOTAMN to indicate more precisely the nature of the information.

2.7.5.3.2 If the Trigger NOTAM is still valid at the time the information about the early cancellation is received, the Trigger NOTAM is cancelled or replaced, depending on the new expiry date/time. The Trigger NOTAM is not affected by the

cancellation of the SUP if the new expiry date is later than Item C) of the Trigger NOTAM.

<u>Example:</u>
Original Trigger:
```
A0034/08 NOTAMN
Q) ESAA/QFATT/IV/BO/A/000/999/5739N01217E005
A) ESGG B) 0804100600 C) 0804240600
E) TRIGGER NOTAM – AIRAC AIP SUP 14/08 WEF 10 APR 2008 TIL 11
MAY 2008. USE OF AERODROME RESTRICTED DUE TO MAJOR
CONSTRUCTION WORKS.
```

New end of SUP: after 24 April 2008: Trigger not affected.
New end of SUP: before 24 April 2008: Trigger replaced or cancelled

<u>Example:</u>   Notification about early cancellation received 15 APR 2008,
                SUP cancelled as of 22 APR 2008 2359.

Replacement:
```
(APR 2008)
151828 EUECYIYN
A0126/08 NOTAMR A0034/08
Q) ESAA/QFATT/IV/BO/A/000/999/5739N01217E005
A) ESGG B) 0804151828 C) 0804222359
E) TRIGGER NOTAM – AIRAC AIP SUP 14/08 WEF 10 APR 2008. USE
OF AERODROME RESTRICTED DUE TO MAJOR CONSTRUCTION WORKS. AIP
SUP VALID TIL 22 APR 2008.
```

2.7.5.3.3 If the SUP is subject of a valid activation NOTAM or any other NOTAM referring to it (e.g. temporary suspensions, changes published by NOTAM), the validity of these NOTAM have to be verified. If necessary, these NOTAM are cancelled or replaced depending on the new expiry date and time. If an activation NOTAM or any other NOTAM referring to the SUP is not in force yet at the time the earlier end is known, the activation NOTAM is cancelled and a new one is published reflecting the new date/time.

<u>Example:</u>

```
151830 EUECYIYN
(A0128/08 NOTAMR A0115/08
Q) ESAA/QMDCH/IV/BO/A/000/999/5739N01217E005
A) ESGG B) 0804151830 C) 0804222359
E) RWY 03/21 TORA 2800M. REF AIRAC AIP SUP 14/08.
```

2.8   NIL Notification

2.8.1   A NIL Notification to announce that an AIRAC AIP Amendment will not be published at the established interval or publication date, shall be distributed by Trigger NOTAM or by NOTAM checklist or by both (ICAO Annex 15 para 4.3.7, para 5.2.13.3, para 6.1.3 - Ref. [1]).

2.8.2   The distribution of a NIL Notification shall be done at least 42 days in advance of the AIRAC date (compliant with ICAO Annex 15 para 6.2.1 - Ref [1]).

2.8.3   If the use of a Trigger NOTAM for the distribution of a NIL notification is preferred, this NOTAM shall use:

- NOTAM Code 2nd and 3rd letters 'OA'

- NOTAM Code 4th and 5th letters 'TT' to identify that it relates to information about the announcement of availability (in this case non-availability) of printed publication; and

- Purpose 'M' to ensure that it will not be included in the pre-flight information bulletin unless specifically required; and

- Scope 'E'; and

- Item B) shall contain the AIRAC effective date; and

- Duration shall be 14 days like for the regular Trigger NOTAM.

Note: The use of scope E for subject OA as well as purpose M for this type of message is an intentional deviation from the NSC for the benefit of PIB retrieval.

<u>Example</u>: Italian NOTAM issued in August

```
160900 LIIAYNYX
A1000/07 NOTAMN
Q) LIXX/QOATT/IV/M/E/000/999/4323N01205E999
A) LIMM LIBB LIRR B) 0709270000 C) 0710112359
E) AIRAC EFFECTIVE DATE 27 SEP 2007 NIL
```

2.8.4   If the use of a NOTAM checklist for the announcement of a NIL notification is preferred, this notification shall be included into NOTAM checklist with following guidance:

- be published at least 42 days before AIRAC effective date; and

- The text will clearly identify which AIRAC effective dates are affected by the NIL notification

<u>Example</u>: Latvian checklist issued in May

```
010920 EVRAYNYX
(A1000/07 NOTAMR A0890/07
Q) EVRR/QKKKK/K/K/K/000/999/5702N02322E999
A) EVRR B) 0705010920 C) 0706011500EST
E) CHECKLIST
YEAR=2007 0016 0021 0023 0024 0025 0028 0029 0032 0036 0040
0042 0043 0044
LATEST PUBLICATIONS
AIRAC AIP AMDT 03/07 WEF 10 MAY 07
AIP AMDT      1/06
AIRAC AIP SUP 01/07 WEF 10 MAY 07
AIP SUP       8/06
AIC              A 05/06 01 NOV 06
AIRAC EFFECTIVE DATE 07 JUN 07 – NIL
AIRAC EFFECTIVE DATE 05 JUL 07 – NIL.
```

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3 NOTAM PROCESSING

3.1 Introduction

3.1.1 The current standard NOTAM format was introduced in ICAO Annex 15, 8th Edition promulgated on 14th of November 1991. All NOTAM should be produced in this format, following the procedures on NOTAM creation explained in Chapter 2 of this Manual.

3.1.2 However, some NOTAM continue to be published in the former NOTAM Class I format and these need to be converted in order to allow their automatic processing.

3.1.3 Some States are also not adhering completely to the Integrated Aeronautical Information Package and do not publish Trigger NOTAM for operationally significant publications.

3.1.4 Other states are publishing those of their NOTAM selected for international distribution in an official ICAO language other than English. In order to make this information available to the NOTAM Processing Unit (NPU) Clients in accordance with Annex 15 (Ref [1]) paragraph 5.2.2.1, a translation into English is required.

3.1.5 Conclusively, there are differences in the interpretation of ICAO standards and recommended practices and guidelines causing inconsistent, inaccurate or even false PIB output.

3.1.6 As a result, differences and discrepancies exist internationally in published NOTAM. NOTAM have to pass through a series of phases where their conformity to the ICAO format is analysed and their contents are assessed prior to their storage in automated NOTAM processing systems. The purpose of this Chapter on NOTAM processing is to define and describe the principles and detailed procedures applied throughout these different phases.

3.2 Objective

3.2.1 The goal of NOTAM processing, is to process all received NOTAM in accordance with the procedures laid down in Chapter 2 of this Manual on NOTAM creation, so as to allow their storage in automated systems in order to provide correct and harmonised PIB output for the benefit of the end user.

3.2.2 Processed NOTAM shall be distributed or made available to NPU Clients as soon as possible after receipt of the original NOTAM by the NOTAM Processing Unit.

3.2.3 NOTAM processing should result in a standardised level of service, regardless of which Unit was responsible for the processing.

3.2.4 In order to ensure the quality of the NOTAM and the consistency of the database, Quality review procedures shall be agreed between Client NOF and NOTAM Processing Unit.

3.2.5   It is essential that NOTAM Processing Units ensure that their Clients are made fully aware of the NOTAM processing procedures being applied.

3.2.6   This Chapter addresses NOTAM processing principles and procedures which support NOTAM storage, their consequent potential retransmission and the production of harmonised pre-flight information bulletin.

3.3   Applicability

3.3.1   Chapter 3 links the NOTAM publication with the retrieval of NOTAM (chapter 7 PIB). The processing of incoming NOTAM constitutes therefore an essential part in order to achieve correct and harmonised PIB. Chapter 3 provides guidelines for the processing of NOTAM deviating from ICAO or OPADD standards as outlined in chapter 2 (NOTAM creation).

3.3.2   However, non-adherences vary a lot and not every specific case can be covered. Incoming messages must be modified whenever they cannot be processed or when they would otherwise have a negative impact on the production of the pre-flight information bulletin.

3.3.3   Compliance with chapter 3 is strongly recommended in order to assure harmonised system PIB output. This also requires a PIB system to be designed in line with OPADD chapters 2 and 7. For systems where this is not the case different procedures or workarounds may have to be applied in order to achieve the expected results.

3.4   Procedures for the processing of NOTAM

3.4.1   The procedures described in this Chapter refer to NOTAMN (New NOTAM). Most of them apply also to NOTAMR and NOTAMC.

3.4.2   Specific procedures relative to NOTAMR (Replacement NOTAM) and NOTAMC (Cancellation NOTAM) and the particulars of their processing are described in this Chapter after the NOTAMN procedures.

3.5   General Principles

3.5.1   Whilst it is expected that most Clients will work with the processed version of the NOTAM, the NOTAM Processing Unit shall be able to make the original version available in accordance with the requirements of its Clients.

3.5.2   The NOTAM Processing Unit shall keep track of any message (free text or 'correct version' NOTAM) which is related to the original NOTAM.

3.5.3   NOTAM processing functions are as follows:

conversion into the standard format;

triggering of information of operational significance;

translation into English;

syntax correction of obvious detected mistakes in syntax;

data correction of detected mistakes in data;

editing text in order to clarify it;

3.5.4   A NOTAM Processing Unit shall perform all of the above listed functions.

3.5.5   The following table shows the applicable processing functions to be performed on the respective NOTAM data and Items (Note that the matrix is not applicable to Triggering:

NOTAM Items	Conversion	Translation	Syntax Correction	Data Correction	Editing
Series/Nr/Type	No	No	Yes	Yes	No
Ref Series/Nr	No	No	Yes	Yes	No
FIR	Yes	No	Yes	Yes	No
NOTAM Code	Yes	No	Yes	Yes	No
Traffic	Yes	No	Yes	Yes	No
Purpose	Yes	No	Yes	Yes	No
Scope	Yes	No	Yes	Yes	No
Lower/Upper	Yes	No	Yes	Yes	No
Lat/Long	Yes	No	Yes	Yes	No
Radius	Yes	No	Yes	Yes	No
Item A)	No	No	Yes	Yes	No
Item B)	No	No	Yes	Yes	No
Item C)	No	No	Yes	Yes*	No
Item D)	No	Yes**	Yes	Yes	No
Item E)	Yes	Yes	Yes	Yes	Yes
Items F) & G)	No	No	Yes	Yes	No

Yes =   Processing function to be performed, if necessary
No   = Processing function not applicable
*   = exc. EST/PERM
**   = Only if names of weekdays, months etc., are not used in English language

3.6   Conversion of original NOTAM Class I

3.6.1   **Conversion** - the transposition of a NOTAM received in the old format into a correctly formatted ICAO NOTAM.

3.6.2   On reception of NOTAM from countries that do not adhere to the NOTAM format, the NOTAM Processing Unit shall transform these into the correct ICAO Annex 15 (Ref. [1]) NOTAM format before storing and making them available.

3.6.3   In converted NOTAM, each Item of the original NOTAM shall be transposed into the appropriate standard NOTAM Item, and those not present (e.g. Item Q) shall be added.

3.6.4   Converted NOTAM shall be qualified according to the NOTAM Selection Criteria published in ICAO Doc 8126 (Ref. [2]). For this purpose, the NOTAM Code must be identified from Item E):

3.6.4.1   If the NOTAM Code is present in Item E), it shall be moved into the Item Q) for further qualification, and decoded in Item E) according to the text provided in the NOTAM Selection Criteria.

3.6.4.2   If no NOTAM Code is contained in Item E), the subject and condition shall be derived from the NOTAM contents.

Example 1: Incoming original NOTAM

```
A1324/08 NOTAMN
A) KJFK
B) 0807231000
C) 0807231700
E) QMRLC 13L/31R CLSD)
```

Corrected NOTAM

```
(A1324/08 NOTAMN
Q) KZNY/QMRLC/IV/NBO/A /000/999/4038N07347W005
A) KJFK B) 0807231000 C) 0807231700
E) RWY 13L/31R CLOSED)
```

Example 2: Incoming original NOTAM

```
231639 KDZZNAXX
(A1326/08 NOTAMC A1324/08
A) KJFK)
```

Corrected NOTAM

```
(A1326/08 NOTAMC A1324/08
Q) KZNY/QMRXX/IV/NBO/A /000/999/4038N07347W005
A) KJFK B) 0807231639
E) REF RWY 13L/31R
NOTAM CANCELLED)
```

3.7   Triggering of printed publications

3.7.1   **Triggering** - the issuing of a Trigger NOTAM in Series 'T', by the NOTAM Processing Unit, relative to AIRAC AIP Amendments and operationally significant AIP Supplements for which no Trigger NOTAM has been issued by the Publishing NOF.

3.7.2   The NOTAM Processing Unit cannot use any of the Publishing NOF's NOTAM series because the NOTAM numbering consistency would not be preserved. Therefore, the Series 'T' is allocated and reserved for this type of Trigger NOTAM.

3.7.3   A Trigger NOTAM in Series 'T' shall be created on the initiative of the NOTAM Processing Unit whenever an AIRAC AIP Amendment or AIP Supplement containing operationally significant information is received for which it is established that no associated Trigger NOTAM is normally issued by the responsible NOF (paragraph 2.7 refers).

3.7.4   The NOTAM Processing Unit shall provide its Clients with a clear indication of those States that do not normally issue their own Trigger NOTAM and for which the issue of these Trigger NOTAM in Series 'T' is to be expected.

3.7.5   Refer to paragraph 3.13.2 for details of the procedures to be applied.

3.8   Translation of NOTAM

3.8.1   **Translation** - rendering the text of a NOTAM originated in French or Spanish, into the English language, while maintaining the original sense of the text.

3.8.2   Translation shall be carried out in the same spirit as translation of a technical document. The objective is to provide a text in the English language which corresponds as closely as possible to the original.

3.8.3   In Europe, NOTAM received in a language other than French or Spanish are not usually translated and shall therefore be subject to the paragraph 3.12 procedures for 'NOTAM Subject to Query'.

3.9   Syntax correction

3.9.1   **Syntax correction** - changing the published format structure of the NOTAM where these are obviously wrong.

This may be carried out automatically by a system or manually by an operator.

3.9.2   Correction of syntax shall be based on the format described in ICAO Annex 15 (Ref. [1]) and in Chapter 2 of this Manual.

Example 1: Incoming original (incorrect) NOTAM

```
A00123/20 08 NOTARM A00122/08
Q) EDGG/QQMRLC/IV/NBO/A/000/999/4841N00913E005
EDDS  A) 0801121000  C) 0801131800
E) RWY 17 CLOSED
```

Corrected NOTAM

```
A0123/08 NOTAMR A0122/08
Q) EDGG/QMRLC/IV/NBO/A/000/999/4841N00913E005
A) EDDS  B) 0801121000  C) 0801131800
E) RWY 17 CLOSED
```


Example 2: Incoming original (incorrect) NOTAM

```
A0101/08 NOTAMR A0100/08
Q) OJAC/QXXXX/IV/M/E/000/999/3116N03706E999
A) OJAC  B) 0801010001  C) 0801310001EST
E) THE FOLLOWING NOTAM ARE STILL IN FORCE:
2006 :- 0020.
2007 :- 0023.
2008 :- 0052 0066 0067 0068 0069 0070
LAST AIP AMDT :- 32/08.
```

Corrected NOTAM

```
A0101/08 NOTAMR A0100/08
Q) OJAC/QKKKK/K/K/K/000/999/3116N03706E999
A) OJAC  B) 0801010001  C) 0801310001EST
E) CHECKLIST
YEAR=2006 0020
YEAR=2007 0023
YEAR=2008 0052 0066 0067 0068 0069 0070
LATEST PUBLICATIONS
AIP AMDT 32/08
```

3.10   Data correction

3.10.1   **Data correction** - changing data elements where these are obviously wrong.

This may be carried out automatically by a system or manually by an operator (it does not include correction by the Publishing NOF).

3.10.2   Correction of data shall only be carried out when the error is such that there can be no possible ambiguity. Where appropriate, corrections will be made using validated Static data. Where there is ambiguity or any doubt whatsoever the Publishing NOF shall be consulted and the paragraph 3.12 procedures for 'NOTAM Subject to Query' shall be applied.

Example: Incoming original NOTAM

```
A0100/08 NOTAMN
Q) EDGG/QMRXX/I/BO/A/000/999/4841N00913E999
A) RDDS  B) 0801011000  C) 0801011800
E) RWY 007 AVAILABLE FOR LANDINGS ONLY
```

Corrected NOTAM

```
A0100/08 NOTAMN
Q) EDGG/QMRLT/IV/NBO/A/000/999/4841N00913E005
A) EDDS  B) 0801011000  C) 0801011800
E) RWY 07 AVAILABLE FOR LANDINGS ONLY
```

3.11   Editing

3.11.1   **Editing** - changing the Item E) wording and/or layout to make it clearer or to more explicitly express ideas that are implicit in that text.

E.g. correcting spelling or abbreviation errors and editing layout or changing line length in order to make it more readable.

3.11.2   Editing might be carried out in order to clarify text, or to draw specific attention to important elements which are implied by the original text but not stated explicitly. Under no circumstances shall editing change the sense of the original NOTAM.

Example: Incoming original NOTAM (Item E only)

```
E) MIL PJE WILL TAK PLAC AT BLOHFELD 471940N
0111300E RDS 10NM. INF ABOUT THE DROPING
ZONE MAY
```

BE OBTAI-
NED BY LOWI TWR 120.100MHZ OR BY WIEN
INFORMATION ON 124.400MHZ.

Corrected NOTAM (Item E only)

E) MIL PJE WILL TAKE PLACE AT BLOHFELD 471940N0111300E RADIUS
10NM. INFORMATION ABOUT THE DROPPING ZONE MAY BE OBTAINED BY
LOWI TWR 120.100MHZ OR BY WIEN INFORMATION ON 124.400MHZ.

Note: The line lengths in this example (maximum number of characters per line) do not reflect real NOTAM processing because of the format used to present the example; nevertheless, the erroneous carriage returns/line feeds in the example of the incoming NOTAM are made intentionally to show editing needs.

3.11.3   When the sense of the original NOTAM is not clear, the paragraph 3.12 procedures for 'NOTAM Subject to Query' shall be applied. For examples of unclear NOTAM refer to 2.3.22.18.

3.12   Procedures for dealing with NOTAM Subject to Query

3.12.1   If a received NOTAM contains ambiguities that cannot be clarified by the NOTAM Processing Unit, a query shall be addressed to the Publishing NOF. However, such NOTAM shall be stored and made available as 'NOTAM Subject to Query' by the NOTAM Processing Unit without delay to all relevant addressees.

3.12.2   The NOTAM Processing Unit shall add the reason for the query after the statement 'NOTAM Subject to Query' in Item E). In this case the original Item E) should not be altered until a clarification on the intended content and meaning has been reached with the publishing NOF.

3.12.3   If the Publishing NOF follows ICAO procedures the corrected version will consist of a NOTAMR (if the queried NOTAM is already in force) or a NOTAMC followed by a NOTAMN (if the queried NOTAM is not in force). In either case the new NOTAM shall be processed normally by the NOTAM Processing Unit.

3.12.4   If the reply is in the form of a 'Correct Version' NOTAM retaining the Series and Number of the queried NOTAM, the NOTAM Processing Unit shall store it overwriting the original NOTAM and make it available as an ordinary NOTAM. The words 'Correct Version' shall be removed.

3.12.5   When this newer version of the NOTAM is received by a Client, the latter <u>must recognise</u> that:

          - it is a duplicate Series and Number; and

          - it was made available by a NOTAM Processing Unit; and automatically use it to overwrite the previous version in their NOTAM database.

3.12.6   If the reply is in the form of a free text message, the NOTAM Processing Unit shall edit the last processed version of the queried NOTAM in accordance with the information provided, and the statement 'NOTAM Subject to Query' shall be removed. The corrected NOTAM shall then be made available retaining the Series and Number of the original.

3.12.7   The Client shall treat this newer version of the NOTAM as in the previous case.

3.13   Procedures for the creation of NOTAM Series 'T'

3.13.1   General procedures

3.13.1.1   NOTAM Series 'T' shall be created by the NOTAM Processing Unit in accordance with OPADD rules.

3.13.1.2   The NOTAM Processing Unit is responsible for the follow-up of the NOTAM Series 'T' that it issues, and, if appropriate, may replace it with a NOTAMR and in due course shall cancel it with a NOTAMC unless the information time expires beforehand.

3.13.1.3   The NOTAM Processing Unit shall make NOTAM Series 'T' available to their Clients only.

3.13.1.4   No monthly checklist of Series 'T' NOTAM is issued by the NOTAM Processing Unit. Automatically produced 'ad hoc' Checklists, shall be made available upon request at any time.

3.13.1.5   In addition to normal NOTAM creation rules (Chapter 2 refers), the basic procedures listed in the following paragraphs (3.13.2 and 3.13.3) shall be observed:

3.13.2   Trigger NOTAM in Series 'T'

3.13.2.1   Trigger NOTAM in Series 'T' are created by the NOTAM Processing Unit to trigger specific printed AIS publications, for which no Trigger NOTAM is normally issued by the Publishing NOF.

3.13.2.2   The State to which the Trigger NOTAM Series 'T' relates shall be identified by the FIR in Item Q) and by the content of Item A).

3.13.2.3   Item B) of a Trigger NOTAM in Series 'T' for AIRAC AIP Amendments should contain the effective date of the Amendment. If the information is received after the effective date of the Amendment, the date in Item B) shall be the issue date of the Trigger NOTAM. In other words, the date in Item B) cannot be in the past, even when the information contained in the printed publication was already effective before the day of its triggering by the NOTAM Processing Unit.

3.13.2.4   Item C) of a Trigger NOTAM in Series 'T' for AIRAC AIP Amendments shall contain the effective date +14 days (or the issue date of the Trigger NOTAM +14 days if information is received after the effective date of the Amendment) (ref para 2.7.3).

3.13.2.5   Item C) of a Trigger NOTAM in Series 'T' for AIP Supplements shall contain the effective date + 14 days (ref para 2.7.4).

3.13.2.6 The Item Q) NOTAM Code shall be compiled in accordance with the guidance at paragraphs 2.7.2.8 and 2.7.2.7. The Qualifiers shall then be chosen according to the prevailing association.

3.13.3 NOTAM in Series 'T'

3.13.3.1 NOTAM in Series 'T' are created by the NOTAM Processing Unit to deal with exceptional formatting errors, if the format of a received NOTAM does not allow standard processing.

3.13.3.2 The Original Publishing NOF shall be identified by the FIR in Item Q) and by the content of Item A).

3.13.3.3 A reference to the original NOTAM shall be included at the end of Item E).

3.13.3.4 A NOTAM series 'T' shall be system linked to the original NOTAM to keep track of the source and to assure its replacement or cancellation.

3.13.3.5 If multiple aerodrome location indicators are listed in Item A), the original NOTAM shall be processed keeping only the first AD. In addition, NOTAM Series 'T' shall be created for the remaining aerodromes with data identical to the original NOTAM.

3.13.3.6 If more than 7 FIR are listed in Item A), the original NOTAM shall be processed keeping the first 7 FIR. In addition, NOTAM Series 'T' shall be created for the remaining FIR, with data identical to the original NOTAM.

3.13.3.7 If combinations of Aerodrome and FIR are listed in Item A), the original NOTAM shall be processed, according to the relevance of the NOTAM and based on the operational experience, for the FIR or aerodromes. In addition, NOTAM Series 'T' may be created for the other entities, if applicable.

Example: Incoming original NOTAM:

```
(A0131/08 NOTAMN
Q) LSAS/QNMAS/IV/BO/AE/000/999/4628N00627E100
A) LSAS LSGG LSGC LSGS B) 0804210700 C) 0804211400
E) ST PREX VOR/DME SPR 113.900 MHZ/CH86X U/S)
```

This original NOTAM is "**subject to query**" as 3 aerodromes and 1 FIR are stated in Item A).

Corrected NOTAM:

```
(A0131/08 NOTAMN
Q) LSAS/QNMAS/IV/BO/AE/000/999/4628N00627E100
A) LSGG B) 0804210700 C) 0804211400
E) NOTAM SUBJECT TO QUERY. MULTIPLE LOCATIONS IN
ITEM A) ST PREX VOR/DME SPR 113.900 MHZ/CH86X U/S.

(T0009/08 NOTAMN
Q) LSAS/QNMAS/IV/BO/A/000/999/4628N00648E005
A) LSGC B) 0804210700 C) 0804211400
E) ST PREX VOR/DME SPR 113.900 MHZ/CH86X U/S
REF NOTAM A0131/08)
```

```
(T0010/08 NOTAMN
Q) LSAS/QNMAS/IV/BO/A/000/999/4627N00640E005
A) LSGS B) 0804210700 C) 0804211400
E) ST PREX VOR/DME SPR 113.900 MHZ/CH86X U/S
REF NOTAM A0131/08)
```

3.13.3.8   In the example at paragraph 3.13.3.7, NOTAM A0131/08 was processed in accordance with the paragraph 3.12 'NOTAM Subject to Query' procedure for AD LSGG and FIR LSAS ('Scope' 'AE') and the 2 NOTAM Series 'T' were created for AD LSGC and LSGS ('Scope' 'A') giving a reference to the original at the end of Item E).

3.13.3.9   Note that, in the example at paragraph 3.13.3.7, if the FIR stated in Item A) of the original NOTAM is identical to the one in the Item Q) and the aerodromes are located in this FIR, then the NOTAM Processing Unit shall delete it.

3.13.3.10 When a NOTAM Series 'T' is published by a NOTAM Processing Unit, the related Publishing NOF shall be informed.

3.14   Procedures for Correction of NOTAM

3.14.1   If an error is detected by the NOTAM Processing Unit, appropriate action shall be taken to correct the received NOTAM and a query shall additionally be sent to the Publishing NOF.

3.14.2   If the NOTAM Processing Unit detects re-occurring errors, it shall inform the Publishing NOF, indicating the correct procedure.

3.14.3   If a NOTAM Processing Unit is alerted that an error has occurred in a NOTAM that it has processed, the NOTAM Processing Unit shall determine the origin of the error, and:

- if the error was made by the NOTAM Processing Unit: re-send the NOTAM after correction; or

- if the error was already contained in the original NOTAM: proceed with a request to the Publishing NOF (Paragraph 3.12 rules for 'NOTAM Subject to Query' shall be applied).

3.14.4   All NPU Clients shall be aware that only the last version received from the NOTAM Processing Unit is the valid version.

3.15   NOTAM Verification

3.15.1   All NOTAM Items shall be checked according to the rules described in Chapter 2 on NOTAM Creation.

3.15.2   In addition to the rules described in Chapter 2, the following general verification shall be performed by the NOTAM Processing Unit:

a) Check if the NOTAM has already been received and differentiate between a 'Dupe' and a 'Correct Version' NOTAM.

b) Check if there is a logical sequence in the origin time of the AFTN messages whenever an 'identical' NOTAM is received.

c) NOTAM Series/Number/Year/Sub-number, relative to the Publishing NOF, are valid and in logic ascending sequence. If not, appropriate request for missing NOTAM is sent by the NOTAM Processing Unit to the Publishing NOF (see Chapter 1).

d) NOTAM Number referred to in a NOTAMR or NOTAMC is a valid NOTAM from the same Publishing NOF.

3.15.3   Additional specific verification shall be performed as explained in the following sub-paragraphs.

3.16   NOTAM Identification

3.16.1   For storage in automated systems, the NOTAM identification consists of establishing the relation between the NOTAM series, number and the "Numbering Reference" it refers to, which is the issuing publishing NOF.

Establishing correct relations and storage allows a unique identification of a NOTAM and easy tracking of missing numbers.

3.16.2   Publishing NOF Identification

3.16.2.1 The identification of the Publishing NOF is not straightforwardly contained in the NOTAM format but is usually identified by the Publishing NOF's AFTN message origin (a 4-letter location indicator).

3.16.2.2 Whenever third parties are transmitting or making available a NOTAM via AFTN on behalf of the publishing NOF, that station enters its own AFTN address into the message origin line according to ICAO Annex 10 SARPs. As a consequence, the information about the 'Numbering reference' is not present in the origin. For such NOTAM, the information about the 'Numbering reference' must be deduced from the FIR Qualifier in the Q) line and Item A) of the NOTAM instead. Additionally, the NOTAM number sequence and/or NOTAM series in use by a publishing NOF may provide further help when allocating the NOTAM to the publishing NOF.

Similar identification and allocation procedures may have to be applied for NOTAM issued by a publishing NOF not in possess of a unique designated 4-letter location indicator or for states also using origins other than that of the publishing NOF.

3.16.3   NOTAM Series Allocation

3.16.3.1 The NOTAM Processing Unit retains the Series and NOTAM Number of the original NOTAM when transmitting it or making it available.

3.16.3.2 If the NOTAM Series letter has been omitted, the NOTAM Processing Unit shall try to derive it from the NOTAM sequence number and include this series.

3.16.3.3 If the Publishing NOF does not use a NOTAM Series letter, the NOTAM Processing Unit shall automatically allocate a Series letter (normally 'A') for such NOTAM.

3.16.4 NOTAM Number

3.16.4.1 If a NOTAM is received that is out of the numerical sequence, a query for the missing NOTAM number(s) shall be initiated, according to Chapter 1 procedures (Database Completeness and Coherence Messages).

3.16.4.2 If the NOTAM number consists of less than 4 digits the NOTAM Processing Unit shall add the leading zeros. If the 'Year' indicator is missing, it shall also be added.

3.16.4.3 If a NOTAM with the same number is received twice but with different contents, paragraph 3.12 rules for 'NOTAM Subject to Query' shall be applied.

3.16.5 NOTAM Sub-Number (Multi-part NOTAM)

3.16.5.1 If a Multi-part NOTAM is received without having the format specified in paragraph 6.1.2, it shall be converted into this format by the NOTAM Processing Unit if the AFTN is to be used when transmitting or making available the processed NOTAM.

3.17 NOTAM Type

3.17.1 If the Publishing NOF did not include the NOTAM type in the original NOTAM, the NOTAM Processing Unit shall insert the appropriate NOTAM type letter.

3.17.2 If the Publishing NOF wrongly allocated the NOTAM type in the original NOTAM, the NOTAM Processing Unit shall insert the appropriate type.

3.17.3 In both cases, the Publishing NOF shall be informed about the change.

3.18 NOTAM Qualification (Item Q)

3.18.1 General rule

3.18.1.1 If the Item Q) is missing, it shall be inserted by the NOTAM Processing Unit.

3.18.1.2 If Item Q) is obviously wrong, it shall be changed by the NOTAM Processing Unit in accordance with the following paragraphs (3.18.2 to 3.18.8).

3.18.2 Qualifier 'FIR'

3.18.2.1 Item Q) may contain Location Indicators that indicate applicability to more than one FIR. In this case, the ICAO location indicators of all FIR concerned should appear in Item A).

3.18.2.2 The NOTAM Processing Unit shall check that this field correctly applies to the location indicator(s) of the FIR(s) entered in Item A). If not, the correct location indicator will be inserted.

3.18.2.3 Note that 'dummy' FIRs, such as UUUU, ZBBB, KFDC and KNMH, may sometimes be used for those countries with more than 7 FIR (i.e. the permitted maximum in Item A).

3.18.3   Qualifier 'NOTAM CODE'

3.18.3.1 The NOTAM Selection Criteria are the basis for NOTAM Code allocation and qualification as described in paragraph 2.3.6.

3.18.3.2 If the NOTAM Code is not entered in the Item Q), the NOTAM Processing Unit shall include the NOTAM Code, corresponding to the Item E) content, together with the appropriate Qualifiers.

3.18.3.3 If the NOTAM Code does not correspond to the text of Item E), and the text of Item E) is clear and unambiguous, the Code may be brought into line with the text, provided that this does not imply a downgrading of the 'Purpose' Qualifier.

Example: Incoming original NOTAM

```
Q) EDXX/QAFXX/I/B/W/000/120/5023N01021E030
A) EDGG EDMM  B) 0803011000  C) 0804011800
E) ATS ROUTE XYZ11 CLOSED BETWEEN XXX and YYY BETWEEN GND AND
FL120
```

Corrected NOTAM

```
Q) EDXX/QARLC/IV/NBO/E/000/120/5023N01021E030
A) EDGG EDMM B) 0803011000  C) 0804011800
E) ATS ROUTE XYZ11 CLOSED BETWEEN XXX and YYY BETWEEN GND AND
FL120
```

3.18.3.4 Overwriting of the original Qualifiers ('Traffic', 'Purpose' and 'Scope') (in accordance with paragraphs 3.18.4 to 3.18.6) should be avoided, unless to correct obvious mistakes.

3.18.3.5 If the original NOTAM has been coded 'QXXXX' and a more appropriate NOTAM Code exists, the NOTAM Processing Unit shall replace the Code and its associated Qualifiers (subject to the limitations specified in paragraphs 3.18.4 to 3.18.8).

3.18.3.6 The NOTAM Processing Unit may also use 'QXXXX' to upgrade 'Scope' and 'Purpose' Qualifiers or for NOTAM where 'AG', 'CO' or 'RC' have been used as 2nd and 3rd letters (Note also the possibility of using 'FA' for Aerodrome or 'AF' for FIR).

3.18.3.7 For NOTAM received with a NOTAM Code that is not contained in the NSC, the NOTAM Processing Unit shall allocate a Code in accordance with the subject and the condition of that subject specified in the Item E) text (refer to paragraph 2.3.6 for further guidance).

3.18.3.8 If a Trigger NOTAM is received without the 4th and 5th letter 'Condition' indicator 'TT', the NOTAM Processing Unit shall replace it with 'TT'. Similarly, if the 2nd and

3rd letter 'Subject' indicator is received as 'XX', the NOTAM Processing Unit shall change it in accordance with paragraph 2.7.2.7 (Note also the guidance at paragraphs 2.7.2.8 and 2.7.2.14).

Example: Incoming original NOTAM

```
Q) EDMM/QXXTT/I/BO/E/000/240/4841N00913E250
A) EDMM  B) 0805080100  C) 0805220100
E) TRIGGER NOTAM – PERM AIRAC AMDT 05/08 WEF 08 MAY
   2008: NEW ATS ROUTE XYZ123 ESTABLISHED.
```

Corrected NOTAM

```
Q) EDMM/QARTT/I/BO/E/000/240/4841N00913E250
A) EDMM  B) 0805080100  C) 0805220100
E) TRIGGER NOTAM – PERM AIRAC AMDT 05/08 WEF 08 MAY
   2008: NEW ATS ROUTE XYZ123 ESTABLISHED.
```

3.18.4   Qualifier 'TRAFFIC'

3.18.4.1   If the 'Traffic' Qualifier is missing, it shall be filled according to the NOTAM Selection Criteria, or, if not specified therein, according to the NOTAM contents.

3.18.4.2   If the 'Traffic' Qualifier is not according to the NOTAM Selection Criteria, the NOTAM Processing Unit may adapt it to the NSC, taking into account the entry in Item E) and guidance at paragraphs 2.3.7.3 and 2.7.2.14.

3.18.5   Qualifier 'PURPOSE'

3.18.5.1   If the 'Purpose' Qualifier is missing, it shall be filled according to the NOTAM Selection Criteria, or, if not specified therein, according to the NOTAM contents.

3.18.5.2   The 'Purpose' Qualifier of a NOTAM shall not be modified by a NOTAM Processing Unit, unless it implies an upgrading. i.e. Purpose 'M' may be changed to 'B', 'BO', 'NB'[2] or 'NBO'; Purpose 'B' may be changed to 'BO', 'NB'[2] or 'NBO'; purpose 'BO' may be changed to 'NB'[2] or 'NBO'; and purpose 'NB'[2] may be changed to 'NBO'.

3.18.6   Qualifier 'SCOPE'

3.18.6.1   If the 'Scope' Qualifier is missing or is not filled according to the NOTAM Selection Criteria, it shall be filled according to the NOTAM contents, following the procedures described in para 2.3.9.

3.18.7   Qualifiers 'LOWER/UPPER'

3.18.7.1   The logical order of the vertical limits indicated in Qualifiers 'Lower' and 'Upper' shall be verified and corrected; these should also correspond to the values specified in Items F) and G) for Navigation Warnings and Airspace Reservations.

---

[2] Note that, whilst change is expected, the use of 'NB' remains prescribed in the ICAO NSC at the time of writing this edition.

Example: 'F) GND' and 'G) 7500FT AMSL' = 'Q)   (Lower/Upper) 000/075'

3.18.7.2 If vertical limits have been entered in Items F) and G) and:

- the limits in Item Q) extend beyond those given in Items F) and G), they shall be left unchanged unless the 000/999 default has been used;

- the limits in Item Q) do not equate but lie between the limits given in Items F) and G), they shall be modified to correspond to Items F) and G):

- if the limits in Item Q) are 000/999, they shall be modified to correspond to Items F) and G) if the actual limits stated there are in FL or in FT or M AMSL (i.e. not for those stated in FT or M AGL – see below);

- if the limits in Items F) and G) are given as FT or M AGL (or FT or M SFC), Item Q) shall be left unchanged unless the LOWER/UPPER limits are obviously wrong or are missing, then the default value 000/999 shall be inserted.

Example: Incoming original NOTAM:

```
A0564/08 NOTAMN
Q) EDGG/QXXCA/IV/NBO/W/000/200/4841N00900E050
A) EDGG B) 0803011000  C) 0804011800
E) AREA XYZ11 ACTIVATED
F) 5500FT G) 12000FT AGL
```

Corrected NOTAM

```
A0564/08 NOTAMN
Q) EDGG/QXXCA/IV/NBO/W/055/200/4841N00900E050
A) EDGG  B) 0803011000  C) 0804011800
E) AREA XYZ11 ACTIVATED
F) 5500FT AMSL G) 12000FT AGL
```

3.18.7.3 The NOTAM Processing Unit shall define the values used to amend NOTAM in accordance with the procedures specified in para 2.3.10.

3.18.7.4 If vertical limits also appear in Item E), these shall be cross-checked and consolidated with Items Q), F) and G).

Example: Incoming original NOTAM:

```
A0564/08 NOTAMN
Q) EDXX/QARLC/IV/NBO/E/000/999/5023N01021E030
A) EDGG EDMM B) 0803011000  C) 0804011800
E) ATS ROUTE XYZ11 CLOSED BETWEEN XXX and YYY BETWEEN FL055
AND FL120
```

Corrected NOTAM

```
A0564/08 NOTAMN
Q) EDXX/QARLC/IV/NBO/E/055/120/5023N01021E030
A) EDGG EDMM B) 0803011000  C) 0804011800
E) ATS ROUTE XYZ11 CLOSED BETWEEN XXX and YYY BETWEEN FL055
AND FL120
```

3.18.8   Qualifier 'GEOGRAPHICAL REFERENCE'

3.18.8.1   The Geographical Reference shall be present in each NOTAM made available by a NOTAM Processing Unit. If this value is not contained in a received NOTAM, the NOTAM Processing Unit has to add it, following the procedures described in para 2.3.11 (General Rules), 2.3.12 (Co-ordinates) and 2.3.13 (Radius).

3.18.8.2   If co-ordinates and radius are given, the NOTAM Processing Unit shall only change the entry if it contains an obvious error and the area covered by the given values is greater or less than necessary (e.g. when the whole FIR default 999 is used for a small danger area located within it or when an insufficient radius is used for a Navaid coverage).

3.18.8.3   If a NOTAM is received without geographical reference, and no positional information appears in Item E), the entry in Item A) should permit the coordinates to be derived from the Unit's available Static Data.

3.18.8.4   If a NOTAM is received without a radius, it shall be derived from the Static Database whenever possible. If the radius cannot be derived, the NOTAM Processing Unit shall include a default radius, as specified in the table at para 2.3.13.3 for Europe and dense areas or '999' for other areas.

3.18.8.5   If Item E) contains a reference to a published area or facility or the definition of a temporary area or facility, this shall be used to correct or determine an appropriate entry in Item Q).

3.19   NOTAM Items

3.19.1   Item A) – Location 'FIR/AD' – General

3.19.1.1   The given aerodrome or FIR(s) should be valid for the country and for the Publishing NOF. If not, the para 3.12 'NOTAM Subject to Query' procedure shall be applied.

3.19.1.2   If the location indicator is not filled or contains a typing error, the NOTAM Processing Unit shall try to deduce it from the Item Q) and from the Item E) content. The para 3.12 'NOTAM Subject to Query' procedure shall be applied.

3.19.1.3   If the location indicator is unknown to the NOTAM Processing Unit (i.e. the aerodrome location indicator is not listed in ICAO Doc 7910 or the national AIP, SUP or NOTAM), the NOTAM Processing Unit shall replace the location indicator by the nationality indicator followed by 'XX' or 'XXX' (e.g. EDXX or CXXX). The para 3.12 'NOTAM Subject to Query' procedure shall be applied, mentioning 'ICAO LOCATION INDICATOR UNKNOWN'.

3.19.1.4   If a new location indicator or a change of a location indicator is announced by a NOTAM, the Processing Unit shall proceed as follows:

1. Store NOTAM with scope E to assure that users are informed about the change. Item A) to contain the location indicator of the FIR and Item E information about the new or changed location indicator as well as other information from NOTAM. Additionally, insert an instruction in Item E to retrieve NOTAM by selecting the new

and old location indicator until all valid NOTAM have been replaced or cancelled by the publishing NOF.

2. Add the new or changed location indicator to the database.

3. Delete old location indicator from database as soon as there are no more valid NOTAM for this Item A and delete retrieval instruction from the NOTAM announcing the change of location indicator.

3.19.1.5 If the Publishing NOF has no discrete FIR (e.g. Swaziland FD, Lesotho FX, Macau VM), Item Q) shall contain the appropriate overlying FIR Indicator. If an aerodrome is used in Item A) and the NOTAM subject/contents is Enroute or nav-warning, the NOTAM Processing Unit shall also change Item Q) 'Scope' to read 'AE' or 'AW'.

3.19.1.6 If a CTA or TMA indicator is used as pseudo FIR in Item A), the NOTAM Processing Unit shall replace it with an indicator that reflects the Item E) text (for example by using the main aerodrome within a TMA or the area affected).

Example: Incoming original NOTAM:

```
A7333/08 NOTAMN
Q) RJJJ/QRACH/IV/NBO/EW/220/230/
A) RJTD B) 0812272315 C) 0812280515
E) FUKUOKA FIR MULTIPLE U.S.MIL ACT WILL BE CONDUCTED WI
FUKUOKA FIR AS FLW, BOUNDED BY THE POINTS 3201N12633E,
3230N12650E, 3230N12712E, 3025N12752E, 3015N12708E, TO POINT
OF ORIGIN. ATC WILL NOT CLEAR NON-PARTICIPATING IFR FLT THRU
THIS AREA.
F) FL220 G) FL230)
```

Corrected NOTAM

```
A7333/08 NOTAMN
Q) RJJJ/QRACH/IV/NBO/W/220/230/3533N15022E999
A) RJJJ B) 0812272315 C) 0812280515
E) FUKUOKA FIR MULTIPLE U.S.MIL ACT WILL BE CONDUCTED WI
FUKUOKA FIR AS FLW, BOUNDED BY THE POINTS 3201N12633E,
3230N12650E, 3230N12712E, 3025N12752E, 3015N12708E, TO POINT
OF ORIGIN. ATC WILL NOT CLEAR NON-PARTICIPATING IFR FLT THRU
THIS AREA.
F) FL220 G) FL230
```

3.19.1.7 If a NOTAM is received with 'Scope' 'A' and an FIR in Item A), and if Item E) confirms the NOTAM applicability to an FIR, the NPU shall modify the 'Scope' to 'W' or 'E', whichever is more appropriate. If the NSC do not provide for 'Scope' 'W' or 'E' to be applied, the 2nd and 3rd letters shall be modified to read 'XX'. However, if Item E) indicates applicability to an Aerodrome, changes to Item A) and to Item Q) ('Scope' 'AE' or 'AW') might be necessary.

3.19.1.8 If a NOTAM is received with 'Scope' 'E' or 'W' and an aerodrome in Item A), and if Item E) confirms the NOTAM applicability to an aerodrome, the NPU shall modify the 'Scope' to 'AW' or 'AE', whichever is more appropriate. However, if Item E) indicates applicability to an FIR, a change to Item A) might be necessary.

Example: Incoming original NOTAM:

```
A2222/08 NOTAMN
Q) MUFH/QRACA/IV/BO/W/000/180/1918N10013W025
A) MUHA B) 0801211500 C) 0801312359
```

```
D) DAILY 1500-2359
E) AIRSPACE RESERVATION BTN UNG AND UCA, ACTIVITY COORD. WITH
TWR MUHA.
F) GND G) 18000FT AMSL
```

Corrected NOTAM

```
A2222/08 NOTAMN
Q) MUFH/QRACA/IV/BO/AW/000/180/1918N10013W025
A) MUHA B) 0801211500 C) 0801312359
D) DAILY 1500-2359
E) AIRSPACE RESERVATION BTN UNG AND UCA, ACTIVITY COORD. WITH
TWR MUHA.
F) GND G) 18000FT AMSL
```

3.19.2   Item A) – Location 'FIR/AD' – Single-Location NOTAM

3.19.2.1   This shall always be the ICAO Location Indicator of one aerodrome or FIR.

3.19.2.2   In the case of one FIR, the entry must be identical to the Qualifier 'FIR' in the Item Q). If not, this entry shall be corrected by the NOTAM Processing Unit.

3.19.2.3   If an aerodrome indicator is given, it must be an aerodrome situated in the FIR inserted in the Item Q). If not, the FIR in the Item Q) shall be changed according to the Static Database.

3.19.2.4   For aerodromes without ICAO location indicator Item A) shall contain the nationality indicator followed by 'XX' or 'XXX' (e.g. EDXX or CXXX), with the full name of the aerodrome as first element in Item E).

3.19.2.5   If Item A) of a received NOTAM contains the full name of an aerodrome, the NOTAM Processing Unit shall replace it by a 4–letter code consisting of the nationality indicator followed by 'XX' or 'XXX' (e.g. LFXX or CXXX), and shall enter the full name in Item E).

> Examples: A) EBBU   (ICAO location indicator for a single FIR)
>
> A) LFPO   (ICAO location indicator for an aerodrome)
>
> A) FBXX   (no location indicator published by Botswana)

In the latter example, Item E) shall contain the full name of the aerodrome as its first element, e.g.:

> E) BOTTLEPAN …..

3.19.3   Item A) – Location 'FIR/AD' – Multi-Location NOTAM

3.19.3.1   According to the current NOTAM format there can be only up to 7 FIR location indicators in Item A). If more than 7 FIR were entered, only the first 7 listed shall remain in Item A). One or more NOTAM Series 'T' shall be issued with identical data as in the original NOTAM until all original FIR have been covered.

3.19.3.2 If multiple aerodromes are inserted in Item A), the NOTAM Processing Unit shall retain only the first indicated aerodrome. For the remaining aerodromes, one or more NOTAM Series 'T' shall be issued with identical data as in the original NOTAM until all original indicated aerodromes are covered.

3.19.3.3 Such NOTAM Series 'T' shall follow the rules described in paragraph 3.13.

3.19.3.4 In cases where a NOTAM contains 'supra-regional' information covering several FIR belonging to more than 1 country, the Qualifier 'FIR' in Item Q) shall contain the Publishing NOF's nationality Code followed by 'XX' or 'XXX' (e.g. EDXX or CXXX). If this procedure is not applied by the Publishing NOF, the NOTAM Processing Unit shall correct the Item Q).

3.19.4   Item B) – Start of Activity

3.19.4.1 This shall be a 10-figure date-time group, giving year, month, day, hour and minutes at which the NOTAM comes in force (paragraph 2.3.16 refers).

3.19.4.2 If 'WIE' (With Immediate Effect) appears in Item B), the NOTAM Processing Unit shall replace it with a 10 figure date/time group corresponding to the time of origin of the original NOTAM.

3.19.4.3 If Item B) contains 'SR' or 'SS' and the NOTAM Processing Unit can calculate an actual time, it shall replace the letters with that time. If, however, the actual time cannot be calculated, the NOTAM Processing Unit shall insert '0000' and add or complete an Item D) with the given 'SR' or 'SS'.

3.19.5   Item C) – End of Validity

3.19.5.1 This shall be a 10-figure date-time group, giving year, month, day, hour and minutes at which the NOTAM ceases to be in force and becomes invalid (ref para 2.3.17).

3.19.5.2 If 'UFN' (Until Further Notice) appears in Item C), the NOTAM Processing Unit shall process the NOTAM with an Item C) changed to an 'EST' time of 48 hours added to the DTG indicated in Item B).

3.19.5.3 If 'APRX DURATION' appears in Item C), the NOTAM Processing Unit shall change it into a Date/Time Group of 10 figures, corresponding to the approximate duration given, followed by 'EST'.

3.19.5.4 If the end of the day is expressed as '2400', the NOTAM Processing Unit shall change it to read '2359' (in accordance with ICAO Annex 5 provisions).

3.19.5.5 If Item C) contains 'SR' or 'SS' and the NOTAM Processing Unit can calculate an actual time, it shall replace the letters with that time. If, however, the actual time cannot be calculated, the NOTAM Processing Unit shall insert '2359' and add or complete an Item D) with the given 'SR' or 'SS'.

3.19.5.6 NOTAM containing 'EST' or an approximate duration should, at the end of the estimated validity, be replaced by NOTAMR or cancelled by NOTAMC. If the Publishing NOF does not react at the end of the estimated validity, the NOTAM

Processing Unit shall request action from all Publishing NOF concerned at least once a month.

3.19.6   Item D) – Day/Time Schedule

3.19.6.1   If the Item D) of the original NOTAM is not structured according to the procedures as detailed in para 2.3.18 till 2.3.21, and if no ambiguity about the originator's intention is present (for example Item E) may contain clear specification), it shall be edited by the NOTAM Processing Unit in accordance with these specifications.

3.19.6.2   If PIB service is provided based on active NOTAM, it is recommended to assure that Item D) does not contain operating hours or other dates/times where the NOTAM would appear at date/times for which there is no restriction.

3.19.6.3   Item D) shall not exceed 200 characters. If it does, then the Item D) time schedule shall be removed and inserted at the end of Item E). This procedure will however, exclude automatic retrieval into Pre-flight Information Bulletins on the specified days and times.

3.19.7   Item E) – NOTAM Text

3.19.7.1   The NOTAM Processing Unit shall check the correspondence between the Item E) text and the NOTAM Code.

3.19.7.2   If a NOTAM is received in a non-standard format, the NOTAM Processing Unit must identify the subject and select the relevant NOTAM Code. If Item E) contains more than one subject, the subject of highest operational importance, based on the appropriate 'Purpose' Qualifier, shall be inserted in Item Q).

3.19.7.3   If the NOTAM Code is already present in Item E) of the original NOTAM, it shall be moved to Item Q) and decoded in Item E); using the text provided in the NOTAM Selection Criteria.

3.19.7.4   If the text in Item E) contains clear restrictions or limitations for an aerodrome or FIR not covered by Item A), the NOTAM Processing Unit shall add the missing FIR in Item A and/or shall issue one or more NOTAM Series 'T' with identical data as in the original NOTAM until all originally indicated aerodromes and/or FIR are covered and with reference to the original NOTAM. Refer also to para 3.13 for the creation of NOTAM Series 'T'.

3.19.7.5   All navigational data, navigation aids, frequencies, location indicators, heights and any logical combinations shall be verified.

3.19.7.6   If the text in the Item E) is ambiguous, the NOTAM Processing Unit shall make the original NOTAM available with the text 'NOTAM Subject to Query' added to the beginning of Item E) according to the procedures described in paragraph 3.12.

3.19.8   Items F) and G) – Lower and Upper Limit

3.19.8.1   If Item F) and G) appear in the NOTAM, refer to guidance at paragraph 2.3.23.

3.19.8.2   NOTAM Processing Unit shall make sure that Lower and Upper limits in Items F) and G) are inserted for Navigation Warnings and Airspace Reservations (NOTAM Codes 'QW...' or 'QR…'). If these Items are missing, the NOTAM Processing Unit shall add them after verification of the data in Item E), or in the Item Q) 'Lower/Upper' Qualifiers, or in the Static Database, and/or after consultation with the Publishing NOF. Use of the paragraph 3.12 'NOTAM Subject to Query' procedure may be required.

3.19.8.3   If NOTAM other than Navigation Warnings and Airspace Reservations are received with Items F) and G), the vertical limits shall be transferred to Item E) using the keywords 'FROM' and 'TO' followed by the appropriate values (e.g. 'FROM 1000FT AMSL TO FL100').

3.19.8.4   If the values specified in Items F) and G) do not cover the limits mentioned in Item E), the NOTAM Processing Unit shall:

- change the values in Item F) or in Item G) to correspond to the lowest (Item F) or the highest (Item G) value mentioned Item E); and

- the paragraph 3.12 'NOTAM Subject to Query' procedure shall be used, and the Publishing NOF shall be contacted to clarify the content of the NOTAM.

3.19.8.5   The values specified in Items F) and G) shall not be changed, whenever the limits in Item F) or G) are respectively lower or higher than the limits specified in Item E).

3.19.8.6   If no Item F) (Lower limit) has been specified in a NOTAM that contains an Item G), but from Items Q) or E) it is obvious that the Lower limit is sea or ground, then the term 'SFC' (surface) shall be inserted in Item F). 'SFC', will be used instead of 'GND' because precise topographic information concerning the area of influence of the NOTAM may not be available.

3.19.8.7   If 'AGL' or 'AMSL' is omitted and the datum cannot be determined, the NOTAM Processing Unit shall add 'AMSL' to the lower limit and 'AGL' to the upper limit.

3.20   Procedures Related to NOTAM 'R' Processing

3.20.1   NOTAMR should be issued in the same series as the NOTAMN or NOTAMR referred to. If this is not the case, the NOTAM Processing Unit shall verify whether the Items of the 'to be replaced' NOTAM correspond to the NOTAMR. If the Items correspond, the NPU shall make the NOTAM available as a NOTAMN and shall delete the 'to be replaced' NOTAM. The paragraph 3.12 procedure for 'NOTAM Subject to Query' shall be applied.

3.20.2   NOTAMR should replace only one NOTAMN or NOTAMR. If more than one NOTAM are replaced by one NOTAMR, the NOTAM Processing Unit shall change the NOTAMR to replace only the first one in the list and shall delete all the others. If it is identified that this is a recurring error, the Publishing NOF shall be requested to adhere to the published ICAO standards (ICAO Annex 15, Ref [1] para 5.2.7 and Doc 8126, Ref [2] Table 6-1 refer).

3.20.3   NOTAMR should relate to the same subject (2nd and 3rd letters of the NOTAM Code) as the NOTAMN or NOTAMR referred to. If this is not the case the NOTAM Processing Unit shall compare the two NOTAM subjects, and make the potential necessary changes, when these are obvious from the message contents.

3.20.4   NOTAMR shall have the same Item A) content as the NOTAMN or NOTAMR referred to. If this is not the case, the NOTAM Processing Unit shall compare the Item A) of both NOTAM with the data in Item E) and make any necessary changes. If Item A) of the NOTAMR should be changed to the same value as the NOTAM it replaces, the change will be done in the processed NOTAMR. If however, Item A) of the NOTAMR cannot be changed (e.g. if the activity has moved to a separate FIR), this NOTAMR shall be processed as a NOTAMN and the 'to be replaced' NOTAM shall be deleted. If Item Q) 'Scope' contains 'A', the paragraph 3.12 procedure for 'NOTAM Subject to Query' shall be applied.

3.20.5   According to 2.4.1.5, Item B of a NOTAMR is equal to the date/time the NOTAMR is created. The NOTAM replaced by a NOTAMR ceases to exist the moment its replacing NOTAM is received.

ICAO currently allows the creation of NOTAMR that come in force at a future date/time but does not provide clear rules regarding the status of the replaced NOTAM. If a NOTAMR is received that contains an Item B) in the future, an automated processing of the NOTAM shall be discontinued for further analysis and to assure correct database storage.

3.20.5.1   In a first step, NOTAM Items B, C, D and E (and F/G if present) of the new NOTAM shall be compared with the replaced or cancelled NOTAM to analyse the intention of the originator with respect to the validity of the replaced or cancelled NOTAM. The following possibilities exist:

a) Case 1:

The replaced NOTAM ceases to exist the very moment the NOTAMR is created. The replaced NOTAM does not appear in a PIB or checklist anymore.

Case 1 usually applies if item B) of the replaced NOTAM and Item B) of the NOTAMR are identical or if no other changes can be identified apart from the changes in Item B (and D) between the replaced NOTAM and the NOTAMR. The NOTAM can be considered as referring to a situation where the activity is suspended.

b) Case 2:

The replaced NOTAM remains valid until item B of the NOTAMR/C is reached. In PIB, the replaced NOTAM will appear until item B of the replacing NOTAM is reached. Item C) of the replaced NOTAM shows the new end date/time. Both NOTAM appear in a checklist created before Item B) of the NOTAMR.

Example:

```
012056 OSDIYNYX
(A0111/07 NOTAMN
Q) OSTT/QXXXX/IV/M/E/000/999/……..
A) OSTT B)0711010001 C) 0803312359 EST
E) WINTER LOCAL TIME UTC PLUS 2HR WILL BE USED.)
```

NOTAM created 29 MAR 2008:
```
290908 OSDIYNYX
(A0038/08 NOTAMR A0111/07
Q) OSTT/QXXXX/IV/M/E/000/999/……...
A) OSTT B) 0804032200 C) 0810312100 EST
```

```
E) SUMMER LOCAL TIME UTC PLUS 3HR WILL BE USED.)
```

In this specific example case 1 can be excluded as the content of the NOTAM describes a phenomena that is globally known, the NOTAMR can be considered as referring to a situation where the condition in the replaced NOTAM remains valid for a certain period before being replaced by a new situation and that the new situation ends earlier or later than originally planned. Case 2 has to apply or no time is applicable between MAR 29 0908 and APR 03 2200 or the time published in AIP which is not likely to be the case.

Note: for the example provided, this means that as soon as A0038/08 is stored in the database, Item C of A0111/07 is replaced by item B of the NOTAMR and shows the new expiring date C) 0804032200.

c) Case 3:

The situation is unclear. The operator is unable to identify if case 1 or 2 applies and the originator's system design is unknown.

Example:

NOTAM created 26 DEC 2007:
```
261637 LIIAYNYX
(B3326/07 NOTAMN
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B)0801150500 C) 0803311100 EST
E) RWY 14 DTHR 300 M. REVISED DECLARED DIST AS FLW: ……..)
```

NOTAM created 01 MAR 2008:
```
011035 LIIAYNYX
(B1893/08 NOTAMR B1826/07
Q) LIMM/QMRLT/IV/NBO/A/000/999/4525N01019E005
A) LIPO B)0803070000 C) 0804101800
E) RWY 14 DTHR 200 M. REVISED DECLARED DIST AS FLW: ……..)
```

Note: The situation could refer to a situation where the condition in the replaced NOTAM remains valid for a certain period before being replaced by a new situation and that the new situation ends later than originally planned or it could refer to a situation where the planned works are suspended (or item B was incorrect) and restart from a later date with changed limitations (or 300 M was a typing error).

3.20.5.2 In a second step appropriate action is taken by the operator to assure correct storage. Different procedures apply for cases 1 and 2. No specific further procedures are provided for these cases as all actions depend on what the system is designed to do without operator intervention and on the extend of manual intervention a system allows. Any operator action should be traceable.

For case 3, the 'NOTAM Subject to query' procedure shall be applied to clarify the situation. Depending on the analysis, clarification must be reached with the originating NOF whether the NOTAMR was intended to be a continuation of the NOTAM to be replaced, a suspension, an error, a completely different time schedule etc.

3.20.6 In case a NOTAMR is received that replaces only an individual part of a Multi-part NOTAM, the NOTAM Processing Unit shall amend the original Multi-part NOTAM and make all parts of it available to its Client as NOTAMR. If ambiguity is detected the paragraph 3.12 procedure for 'NOTAM Subject to Query' shall be applied.

3.20.7   In case of a NOTAMR replacing an AIP Supplement, the NOTAM Processing Unit shall change the original NOTAMR into a NOTAMN; and, if appropriate, issue a NOTAMC in Series 'T' to cancel any previously issued Trigger NOTAM in Series 'T'.

3.21   Procedures Related to NOTAM 'C' Processing

3.21.1   NOTAMC should be issued in the same series as the NOTAMN or NOTAMR referred to. If this is not the case, the NOTAM Processing Unit shall verify whether the Items of the 'to be cancelled' NOTAM correspond to the NOTAMC. If the Items correspond, the NPU shall make the NOTAM available as a NOTAMN and shall delete the 'to be cancelled' NOTAM.

3.21.2   NOTAMC should cancel only one NOTAMN or NOTAMR. If more than one NOTAM are cancelled by one NOTAMC, the NOTAM Processing Unit shall change the NOTAMC to cancel only the first one in the list and shall delete all the others.

3.21.3   NOTAMC should come in force at the time they are issued, and immediately cancel the NOTAMN or NOTAMR referred to.

3.21.4   According to 2.4.1.5, Item B of a NOTAMC is equal to the date/time the NOTAMC is created. The NOTAM replaced by a NOTAMC ceases to exist the moment its cancelling NOTAM is received.

          ICAO currently allows the creation of NOTAMC that come in force at a future date/time. If a NOTAMC contains an Item B) in the future, an automated processing of the NOTAM shall be discontinued.

3.21.4.1 Contrary to NOTAMR with an Item B) in the future, a NOTAMC with Item B) in the future is always a change of item C of the cancelled NOTAM and may be a prolongation or a shortening. Item B) of the NOTAMC is equal to or later than Item B) of the cancelled NOTAM.

          Similar procedures as for case 2 for NOTAMR with Item B) in the future can be applied (the cancelled NOTAM remains valid until Item B) of the NOTAMC is reached).

          However, 'NOTAM Subject to query' procedure shall be applied to obtain confirmation from the publishing NOF and to exclude that item B) of the NOTAMC had been a typing error.

3.21.4.2 If Item B) of the NOTAMC is later than the date/time of reception but earlier than Item B) of the cancelled NOTAM, procedures in force for case 1 have to be applied and the cancelled NOTAM is cancelled with immediate effect. The NOTAMC was obviously issued in error or should have been a NOTAMR instead. 'NOTAM Subject to query' procedure applies to clarify the status of the cancelled NOTAM with the publishing NOF.

          If clarification results in a reply that the NOTAMC should have been a NOTAMR instead, a NOTAM series 'T' has to be issued if the publishing NOF does not correct the erroneous NOTAMC by publishing a NOTAMN. The same applies if a 'correct version' is published instead of NOTAMN. The series 'T' NOTAM contains

all data from the erroneously cancelled NOTAM, Item B) the date and times from the NOTAMC.

3.21.5   For all NOTAMC, the text of the decoded NOTAM Code shall be inserted in Item E) together with details of the NOTAM subject. If no text is inserted by the Publishing NOF, the NOTAM Processing Unit shall insert a reference to the cancelled NOTAM subject followed, in a new line, by the text 'NOTAM CANCELLED'.

3.21.6   If a NOTAMC contains an Item A) but does not contain Items Q), B) or E), the NOTAM Processing Unit shall fill the missing compulsory Items.

-    Item Q) NOTAM Code 2nd and 3rd letters shall be derived from the NOTAM to be cancelled.

-    Item Q) NOTAM Code 4th and 5th letters shall be 'XX' (unless an Item E) text had been provided to confirm use of 'AK', 'AL', 'AO' or 'CC').

-    Item Q) other Qualifiers shall be identical to those in the cancelled NOTAM (ref para 2.4.3.5).

-    Item B) shall be the date and time of filing of the NOTAMC.

-    Item E) shall contain a reference to the cancelled NOTAM subject followed, in a new line, by the text 'NOTAM CANCELLED'.

Example: Incoming original NOTAM

```
231639 KDZZNAXX
A1326/08 NOTAMC A1324/08
A) KJFK
```

Corrected NOTAM

```
A1326/08 NOTAMC A1324/08
Q) KZNY/QMRXX/IV/NBO/A/000/999/4038N07347W005
A) KJFK B) 0807231639
E) RWY 13L/31R
NOTAM CANCELLED
```

3.21.7   In case of a NOTAMC cancelling an AIP Supplement, the NOTAM Processing Unit shall:

-    change the original NOTAMC into a NOTAMN;

-    insert an Item C) according to para 2.7.5.3.1;

-    issue a NOTAMR or a NOTAMC in Series 'T' in accordance with the rules described in para 2.7.5 to cancel previously issued Trigger NOTAM in Series 'T', if any.

3.22   Checklist Processing

3.22.1   General Principles

3.22.1.1   A received Checklist shall be processed and, unless otherwise agreed, made available to all Clients by the NOTAM Processing Unit without undue delay.

3.22.1.2   NOTAM Processing Units shall advise their Clients that certain States (which shall be specified) may issue Checklists that relate to more than one NOTAM Series.

3.22.1.3   Checklists may also be received as NOTAMN and/or without an 'EST' indication in Item C) (ref para 2.5.1.6 and 3.22.2.9).

3.22.1.4   Checklists are edited and corrected and presented in the correct format to the Client.

3.22.1.5   In case of any ambiguities, e.g.:

- a valid NOTAM is not included in the Checklist; or

- a NOTAM included in the Checklist is not in the database, etc.

The NOTAM Processing Unit shall request clarification from the Publishing NOF and analyse the differences (paragraph 3.12 procedures for 'NOTAM Subject to Query' refers).

Procedures described in 3.23 and 3.24 are applied in order to resolve the ambiguities.

3.22.2   Checklist Received as a NOTAM

3.22.2.1   If a Checklist is received as a NOTAM, but it is not in the agreed NOTAM Checklist format (paragraph 2.5 refers), the NOTAM Processing Unit shall convert it as described hereafter:

3.22.2.2   <u>NOTAM Series, Number and Type</u> shall be retained.

3.22.2.3   <u>Item Q) 'FIR'</u> Qualifier shall be:

- the FIR of the Publishing NOF, if responsible for only 1 FIR; or

- the 2–letter country indicator of the Publishing NOF followed by 'XX', if the Publishing NOF is responsible for multiple FIR (in the same or in different countries).

3.22.2.4   <u>The NOTAM Code</u> shall always be 'QKKKK'.

3.22.2.5   <u>Item Q) 'Traffic', 'Purpose' and 'Scope'</u> Qualifiers shall be given the artificial value 'K', even if another Qualifier was included by the Publishing NOF.

3.22.2.6   <u>Item Q) 'Lower/Upper'</u> Qualifiers shall be the default values '000/999'.

3.22.2.7   <u>Item Q) geographical reference and radius</u> Qualifiers are required and, if missing, they shall be entered by the NOTAM Processing Unit.

3.22.2.8   <u>Item A)</u> should contain the list of all valid FIR for the Publishing NOF and, if any are missing, they shall be added by the NOTAM Processing Unit.

However, for States with a NOF but no own FIR (e.g. Swaziland, Lesotho, Macao), the location indicator of the main aerodrome will be entered in Item A). Otherwise the Checklist cannot be associated to the publishing NOF (e.g. Lesotho would have a Series A Checklist with Q-FIR + Item A FAJS which is the same as for South African A series).

3.22.2.9   <u>Item C)</u> should indicate the estimated time of validity, usually exactly one month after the date and time of the publication of the current Checklist, followed by 'EST'. Whenever another date/time group is entered by the Publishing NOF, the NOTAM Processing Unit shall not change it.

3.22.2.10 <u>Item E)</u> should be divided into two parts:

NOTAM Number Part, identified by 'CHECKLIST'

Should contain a list of the valid NOTAM issued in a particular series, in a format suitable for automatic and manual processing as described in paragraph 2.5.

If necessary, the NOTAM Processing Unit shall convert the Checklist into this format.

Latest Publication Part, identified by 'LATEST PUBLICATIONS'

Should contain a list of the latest publications (Amendments, Supplements and AIC).

This part shall be made available as received. If this part is not present in the original NOTAM, the NOTAM Processing Unit shall make the Checklist available without this Latest Publication Part.

3.22.3   Checklist Not Received as a NOTAM

3.22.3.1   If a NOTAM Checklist is not received as a NOTAM (i.e. when no NOTAM number has been allocated to the Checklist), the NOTAM Processing Unit shall adapt the received AFTN message to the 'ad-hoc' Checklist format, as described in paragraph 4.6.

3.22.3.2   The processed checklist shall also be made available as an AFTN message. The message shall start with the word 'Checklist', the 4-letter indicator of the Publishing NOF or any other location indicator to which the numbering of the NOTAM refers and the corresponding NOTAM Series. The valid NOTAM numbers shall be included in the next line(s) according to the format described in para 2.5.3, but retaining the latest publication part only if included in the original message.

<u>Example</u>:
```
CHECKLIST RJAA A
YEAR=2007 1678 1789
```

```
YEAR=2008 0012 0022 0056 0057 0058 0073 0099 0102 0123 0124
0125
LATEST PUBLICATIONS
AIRAC AIP AMDT 5/08 EFFECTIVE 20 APR 2008
AIP SUP 1/08
AIP AMDT 413
AIC A001/08
```

3.23   Missing NOTAM

3.23.1   If NOTAM are missing, the NOTAM Processing Unit shall request them from the Publishing NOF using a Request message. Chapter 1 refers but the syntax requirements of the Publishing NOF shall be observed.

3.23.2   Time parameters for initiating the first request message and succeeding repetition of the message shall be defined by the NOTAM Processing Unit and may vary depending on the Publishing NOF.

3.24   NOTAM Deletion

3.24.1   The processing of NOTAM not adhering to the ICAO Standard may force a NOTAM Processing Unit to delete NOTAM by means other than a NOTAMR or a NOTAMC if:

a) the NOTAM is cancelled by a printed publication (AIP AMDT, AIP SUP, etc.);

b) the NOTAM is cancelled by a checklist;

c) the NOTAM is cancelled by an AFTN free text message from the Publishing NOF;

d) the NOTAM is cancelled or replaced by a NOTAMC or a NOTAMR with more than one NOTAM to be cancelled or replaced;

e) the NOTAM is deleted because an updated/corrected version of the NOTAM shall follow.

3.24.2   NPU Clients shall receive notification of deletion of a NOTAM (see chapter 1 for notification mechanism).

4 DATABASE COMPLETENESS AND COHERENCE MESSAGES

4.1 General Principles

4.1.1 The maintenance of dynamic data is essential for the efficient operation of a NOTAM Processing Unit, a Publishing NOF or for an aeronautical database administrator. The application of 'query messages' is required to ensure the database completeness and coherence. Query messages based upon the use of AFTN (but not restricted to AFTN) are described in this Chapter. They were developed so as to permit automatic and manual processing of queries.

4.1.2 The basic requirements for messages destined for the maintenance of the dynamic data are:

- request for one or more NOTAM;

- request for the original version of a NOTAM;

- request for an intermediate Checklist of valid NOTAM.

4.1.3 In order to facilitate automatic processing, the requests and the replies to the requests are identified by means of 3–letter identifiers.

Request for NOTAM:	'RQN'
Request for 'original version' NOTAM:	'RQO'
Request for ASHTAM:	'RQA'
Request for an intermediate Checklist:	'RQL'
Reply to these requests:	'RQR'

4.1.4 For the avoidance of network overload, the number of requested NOTAM in a single request message shall be limited in 'RQN' or in 'RQO'. It is recommended that the maximum is set to 100.

4.1.5 Request shall include the 4-letter indicator of the Publishing NOF or any other location indicator to which the numbering of the required NOTAM refers (e.g. USA).

4.1.6 A reply message shall contain only one NOTAM (or several messages in case of a multi-part NOTAM), or a status text regarding the requested NOTAM, normally followed by the requested NOTAM.

4.1.7 Request shall refer to only one Publishing NOF.

4.1.8 If a request contains a syntax error, the recipient of the request will inform the originator that an error has been detected in the request message.

4.2 Request for the Repetition of NOTAM (RQN)

4.2.1 Codes and Symbols used

4.2.1.1   Note that no brackets will be used when transmitting a 'Request NOTAM' message. The following codes and symbols are used in requests for repetition:

'RQN'	is the designator for 'Request NOTAM'.
'LFFA'	4-letter indicator of the Publishing NOF or other location indicator to which the numbering of the NOTAM refers.
'A0123/00'	NOTAM Series Identifier and NOTAM Number.
' - '	(hyphen) is used to indicate 'TO' or 'FROM-TO'.
' '	(blank) is interpreted as 'AND'.
'RQR'	is the designator for the reply.

4.2.2 Examples of the Request for NOTAM

4.2.2.1 Request of a single NOTAM

<u>Example 1</u>:   French NOF requests from Italian NOF the Italian NOTAM A0123/08.

```
        Request:    ZCZC ...
                    GG LIIAYNYX
                    160830 LFFAYNYX
                    RQN LIIA A0123/08

        Reply:      ZCZC ...
                    GG LFFAYNYX
                    160835 LIIAYNYX
                    RQR LIIA A0123/08
                    (A0123/08 NOTAMN
                    Q) .../..../....   etc.)
```

<u>Example 2</u>:   French NOF requests from German NOF the Polish NOTAM A1253/08.

```
        Request:    ZCZC ...
                    GG EDDZYNYX
                    160900 LFFAYNYX
                    RQN EPWW A1253/08

        Reply:      ZCZC ...
                    GG LFFAYNYX
                    160905 EDDZYNYX
                    RQR EPWW A1253/08
                    (A1253/08 NOTAMN
                    Q) .../..../....   etc.)
```

4.2.2.2 Request of several NOTAM with continuous numbering

Example 3: French NOF requests from German NOF the Cypriot NOTAM between A0199/08 and A0210/08.

```
Request:    ZCZC ...
            GG EDDZYNYX
            281030 LFFAYNYX
            RQN LCNC A0199/08-A0210/08
```

```
Reply:      ZCZC ...
            GG LFFAYNYX
            281035 EDDZYNYX
            RQR LCNC A0199/08
            (A0199/08 NOTAMN
            Q) .../..../....    etc.)
```

Note: The full Reply consists of 12 messages containing one NOTAM each.

4.2.2.3 Request of several NOTAM with discontinuous numbering

Example 4: French NOF requests from German NOF the Russian Federation NOTAM A0400/08, A0410/08 and NOTAM between A0420/08 and A0425/08.

```
Request:    ZCZC ...
            GG EDDZYNYX
            281530 LFFAYNYX
            RQN UUUU A0400/08 A0410/08 A0420/08-
            A0425/08
```

```
Reply:      ZCZC ...
            GG LFFAYNYX
            281540 EDDZYNYX
            RQR UUUU A0400/08
            (A0400/08 NOTAMN
            Q) .../..../....    etc.)
```

Note: The full Reply consists of 8 messages containing one NOTAM each.

4.3   Request for the original version of NOTAM (RQO)

4.3.1   General Specification

4.3.1.1   A NOTAM Processing Unit will normally transmit only the processed version of NOTAM to its clients. Whenever a NPU client needs the original version of a NOTAM, it can be obtained by sending a 'Request for Original NOTAM' message (RQO) to the NOTAM Processing Unit.

4.3.1.2   RQO is only to be used in data exchange between NPU Client and NOTAM Processing Unit.

4.3.1.3   A reply message shall contain the 'status line': 'ORIGINAL NOTAM', followed by a single NOTAM.

4.3.1.4   The reply message of an original NOTAM shall always include the original origin line (DTG + Publishing NOF address).

4.3.2   Codes and Symbols used

4.3.2.1   The following Codes and Symbols are used in requests for the original version:

    'RQO'   is the designator for 'Request Original NOTAM'.

    'LFFA'   4-letter indicator of the Publishing NOF or other location indicator to which the numbering of the NOTAM refers.

    'A0123/00'   NOTAM Series Identifier and NOTAM Number.

    ' - '   (hyphen) is used to indicate 'TO' or 'FROM-TO'.

    ' '   (blank) is interpreted as 'AND'.

    'RQR'   is the designator for the reply.

4.3.3   Example of the Request for Original NOTAM

Example 5:   French NOF requests from German NOF the Original NOTAM KJFK A0553/08.

```
Request:    ZCZC ...
            GG EDDZYNYX
            160900 LFFAYNYX
            RQO KJFK A0553/08

Reply:      ZCZC ...
            GG LFFAYNYX
            160910 EDDZYNYX
            RQR KJFK A0553/08
            ORIGINAL NOTAM
            052255 KDZZNAXX
            (A0553/08 NOTAMN
            A) KJFK B) WIE C) UFN
            E) ...etc.
```

4.4   Request for the Repetition of ASHTAM (RQA)

4.4.1   Codes and Symbols used

4.4.1.1   Note that no brackets will be used when transmitting a 'Request ASHTAM' message. The following codes and symbols are used in requests for repetition:

    'RQA'   is the designator for 'Request ASHTAM'.

    'SAEF'   4-letter indicator of the FIR to which the numbering of the ASHTAM refers.

'0134'   ASHTAM Number.

' - '   (hyphen) is used to indicate 'TO' or 'FROM-TO'.

' '   (blank) is interpreted as 'AND'.

'RQR'   is the designator for the reply.

4.4.1.2   RQA followed by the 4-letter indicator of an FIR will result in the repetition of all valid ASHTAM for the FIR requested.

4.4.1.3   RQA followed by the 4-letter indicator of an FIR and ASHTAM number will result in the repetition of the requested ASHTAM only.

4.4.2   Examples of the Request for ASHTAM

4.4.2.1   Request of all valid ASHTAM for an FIR

Example 6:   French NOF requests from Italian NOF all valid ASHTAM for SAVF.

```
Request:    ZCZC ...
            GG LIIAYNYX
            161600 LFFAYNYX
            RQA SAEF

Reply:      ZCZC ...
            GG LFFAYNYX
            161601 LIIAYNYX
            RQR SAEF
            VASA0123 SAEF 08161515
            ASHTAM 0123
            A) ...   etc.

            ZCZC ...
            GG LFFAYNYX
            160835 LIIAYNYX
            RQR SAEF
            VASA0121 SAEF 08152225
            ASHTAM 0121
            A) ...   etc.
```

Example 7:   French NOF requests from Italian NOF all valid ASHTAM for WAAF.

```
Request:    ZCZC ...
            GG LIIAYNYX
            161600 LFFAYNYX
            RQA WAAF
```

or ….. /
```
Reply:      ZCZC ...
            GG LFFAYNYX
            161601 LIIAYNYX
            RQR WAAF
            NO VALID ASHTAM IN DATABASE
```

4.4.2.2 Request of a single ASHTAM

Example 8:   French NOF requests from Italian NOF the SAEF ASHTAM 0123.

```
Request:    ZCZC ...
            GG LIIAYNYX
            161600 LFFAYNYX
            RQA SAEF 0123

Reply:      ZCZC ...
            GG LFFAYNYX
            161601 LIIAYNYX
            RQR SAVF 0123
            VASA0123 SAEF 08161515
            ASHTAM 0123
            A) ...   etc.
```

4.5   Content of the Reply Messages (RQR)

4.5.1   General Specification

4.5.1.1   A Reply message to RQN and RQO contains only one NOTAM (or one part of a Multi-part NOTAM).

4.5.1.2   A single 'RQN' or 'RQO' request for multiple NOTAM shall result in multiple reply messages unless the requested NOTAM are not available for a reply (exception 4.5.1.7 refers).

4.5.1.3   In reply to a RQN, if the NOTAM queried has been processed by the NPU, the reply message shall contain the location indicator of the NPU as the originator instead of the code of the Publishing NOF.

4.5.1.4   In reply to a RQO, the status line with the status expression 'ORIGINAL NOTAM' shall precede the original NOTAM. No additional information about the current status/validity of this NOTAM shall be provided.

4.5.1.5   If the queried NOTAM is no longer valid or not available, this status will be communicated through the reply as follows:

a) if the NOTAM is no longer valid, a 'Status line' will precede the transmission of the requested NOTAM.

b) if the NOTAM is not available, only a relevant 'Status line' will be transmitted.

4.5.1.6   Only one 'Status line' shall be included in the reply and it shall contain only one status expression.

4.5.1.7   In order to limit the number of RQR messages in reply to a RQN for more than one NOTAM and when these NOTAM are not available in the NPU's database, the RQR shall contain all NOTAM numbers concerned by the same reply: 'NOTAM REQUESTED' or 'NOTAM NO LONGER IN DATABASE' or 'NOTAM NOT ISSUED'. For example, instead of 99 RQR messages with 'NOTAM NOT ISSUED', only one RQR shall be sent.

4.5.1.8   Database should allow repetition of no longer valid NOTAM for a period of 3 months.

4.5.1.9   NOTAM Processing Unit shall provide their NPU Clients with a list of the available NOTAM series for each Publishing NOF. This list shall contain the 4-letter indicators that uniquely identify the Publishing NOF or any other location indicator to which the numbering of the NOTAM in the series refers to.

4.5.2   Standard Expressions in Reply Messages

4.5.2.1   The following mandatory statements shall be mentioned in the reply when appropriate:

'NOTAM EXPIRED'	Item C time was reached
'NOTAM REQUESTED'	The NOTAM Processing Unit has requested the requested NOTAM but not yet received it.
'NOTAM CANCELLED BY A1324/08'	NOTAM was cancelled by a NOTAMC
'NOTAM DELETED'	NOTAM was deleted by the NOTAM Processing Unit. Reasons for deletion might be for example that the NOTAM was omitted from Checklist, deleted by printed publication, or other information received from publishing NOF.
'NOTAM NO LONGER IN DATABASE'	NOTAM was either expired, replaced, cancelled or deleted since more than 3 months
'NOTAM NOT ISSUED'	The Publishing NOF has not issued the requested NOTAM
'NOTAM REPLACED BY C3042/08'	NOTAM was replaced by a NOTAMR
'ORIGINAL NOTAM'	Original version of the NOTAM
'NO VALID NOTAM IN DATABASE'	For reply on a RQL if no valid NOTAM is available.
'NO VALID ASHTAM IN DATABASE'	For reply on a RQA if no valid ASHTAM is available.

4.5.3   Examples for Status of NOTAM

Example 9:   The requested Egyptian NOTAM A0400/08 is expired.

```
Reply:        ZCZC ...
              GG LFFAYNYX
              281600 LIIAYNYX
              RQR HECA A0400/08
              NOTAM EXPIRED
              (A0400/08 NOTAMN
              Q) .../.../.... etc.)
```

Example 10:   The requested Senegal NOTAM A0213/08 was not received at the NOTAM
              Processing Unit.

              Reply:

              If a gap in the NOTAM numbers is detected :
```
              ZCZC ...
              GG EDDZYNYX
              091430 LFFAYNYX
              RQR GOOO A0213/08
              NOTAM REQUESTED
```

              or if the NOTAM number is greater than the last one received :
```
              ZCZC ...
              GG EDDZYNYX
              091430 LFFAYNYX
              RQR GOOO A0213/08
              NOTAM NOT ISSUED
```

              or if the NOTAM was cancelled, replaced or deleted
```
              ZCZC ...
              GG EDDZYNYX
              091430 LFFAYNYX
              RQR GOOO A0213/08
              NOTAM CANCELLED BY A0222/08
          or ... NOTAM REPLACED BY A0233/08
          or ... NOTAM DELETED
```

Example 11:   The requested Tahiti NOTAM A0021/08 was cancelled.

```
Reply:        ZCZC ...
              GG LIIAYNYX
              301235 LFFAYNYX
              RQR NTAA A0021/08
              NOTAM CANCELLED BY A0023/08
              (A0021/08 NOTAMR A0017/08
              Q) .../.../.../   etc.
```

Example 12:   The requested Cuban NOTAM A1577/08 was not issued.

> Reply: ZCZC ...
>   GG EDDZYNYX
>   110925 LEANYNYX
>   RQR MUHA A1577/08
>   NOTAM NOT ISSUED

Example 13:   The requested Korean NOTAM A0449/08 was replaced.

> Reply: ZCZC ...
>   GG LFFAYNYX
>   282055 LIIAYNYX
>   RQR RKRR A0449/08
>   NOTAM REPLACED BY A0452/08
>   (A0449/08 NOTAMN
>   Q) ../../../   etc.)

The importance of transmitting the requested NOTAM is emphasised, even when it is already cancelled, replaced or deleted. Otherwise, there might be inconsistencies in the database, as NOTAM could not be removed then, (NOTAM A0017/08 in Example 8).

In the exceptional case that a cancelled, replaced or deleted NOTAM was not received the RQR shall contain the status line only.

Example 14:   The requested (RQO) United States NOTAM A0092/08 is an Original NOTAM.

> Reply: ZCZC ...
>   GG LIIAYNYX
>   031755 EDDZYNYX
>   RQR KJFK A0092/08
>   ORIGINAL NOTAM
>   010025 KDZZNAXX
>   (A0092/08 NOTAMN
>   A) KJFK B) ...C) ...   etc.)

4.6   Request for a List of valid NOTAM (RQL)

4.6.1   General Specification

4.6.1.1   The 'List of valid NOTAM' is a free text message. Contrary to the regular checklist, this intermediate checklist is not a NOTAM itself, as it does not receive a number of the series it refers to.

4.6.1.2   Note that the last regular checklist is a valid NOTAM and therefore, its number shall appear in the RQL.

4.6.1.3   Multiple series of the same Publishing NOF may be requested in one message.

4.6.1.4   A reply message shall contain the checklist of only one NOTAM Series.

4.6.1.5   A request for multiple NOTAM series shall result in multiple reply messages each containing one series checklist.

4.6.1.6   The reply message is identified by the unique 4-letter indicator and the NOTAM series identifier. The 'List of valid NOTAM' according to the NOTAM Processing Unit database content is provided in a way similar to the structure of Item E of a regular NOTAM checklist, without the latest publication part.

4.6.1.7   Whenever the regularly published NOTAM checklist is requested, the Client should use the RQN procedure, clearly indicating both NOTAM series and number.

4.6.2   Codes and Symbols used

4.6.2.1   The following Codes and Symbols are used in requests for a list of valid NOTAM:

'RQL'   is the designator for 'request list'.

'LFFA'   4-letter indicator of the Publishing NOF or other location indicator to which the numbering of the NOTAM refers to.

'A'   NOTAM Series Identifier.

' '   (blank) is interpreted as 'AND'.

'RQR'   is the designator for the reply.

4.6.3   Examples of the request for a List of valid NOTAM

4.6.3.1 Request of a single NOTAM Series

Example 15:   French NOF requests from Italian NOF the list of valid Cypriot NOTAM in series Alpha:

```
Request:    ZCZC ...
            GG LIIAYNYX
            281040 LFFAYNYX
            RQL LCNC A
```

```
Reply:      ZCZC ...
            GG LFFAYNYX
            281055 LIIAYNYX
            RQR LCNC A
            YEAR=2007 0322 0452
            YEAR=2008 0001 0006 0010 0015 0016
             0021 0035 0039
```

or ..... /
```
Reply:      ZCZC ...
            GG LFFAYNYX
            281055 LIIAYNYX
            RQR LCNC A
            NO VALID NOTAM IN DATABASE
```

Example 16: French NOF requests from Italian NOF the list of valid Guyana NOTAM in
series Alpha, but last Checklist A0011/08 is the only valid NOTAM.

```
Request:    ZCZC ...
            GG LIIAYNYX
            281040 LFFAYNYX
            RQL SYCJ A
```

```
Reply:      ZCZC ...
            GG LFFAYNYX
            281055 LIIAYNYX
            RQR SYCJ A
            YEAR=2008 0011
```

4.6.3.2 Request of multiple NOTAM Series

Example 17: Italian NOF requests from German NOF the list of valid NOTAM from the
United Kingdom in series Bravo and Golf:

```
Request:    ZCZC ...
            GG EDDZYNYX
            310840 LIIAYNYX
            RQL EGGN B G
```

```
Reply:      ZCZC ...
            GG LIIAYNYX
            310850 EDDZYNYX
            RQR EGGN B
            YEAR=2007 1678 1789
            YEAR=2008 0012 0022 0056 0057 0058
             0123 0124 0125
```

The full Reply consists of 2 Messages containing one NOTAM Series in each.

4.7   Incorrect Requests (RQN, RQO, RQL)

4.7.1   General Specification

4.7.1.1   If a RQN, RQO, RQA or RQL message has been received that does not adhere to
the published syntax format or content, the recipient of the request will send a
reply message informing about the error.

4.7.2   Standard Expressions

4.7.2.1   For a request received with an incorrect format

```
INCORRECT  REQ  MSG  FORMAT  PLEASE
CORRECT AND RPT. FOR DETAILS SEE
http://www.eurocontrol.int/aim/op
add
```

The recipient of the request
has detected an error in the
format of the RQ message

4.7.2.2 For a request received referring to an unknown or incorrect NOF designator or series

```
REQUESTED   NOF   OR   SERIES   NOT
MANAGED
```
The recipient of the request has received a request for a NOF or series which is not contained in the database

4.7.2.3 For a request exceeding maximum number allowed for a single request

```
YOUR  REQ  MSG  EXCEEDS  MAX  NR  OF
100
```
Number of requested NOTAM limit is exceeding.

4.7.2.4 Examples

Example 18:
```
            Request:    ZCZC …
                        GG LEANYNYX
                        151030 EDDZYNYX
                        RQN LEMD LEBL

            Reply:      ZCZC …
                        GG EDDZYNYX
                        151035 LEANYNYX
                        RQR
                        RQN LEMD LEBL
                        INCORRECT REQ MSG FORMAT PLEASE CORRECT AND
                        RPT. FOR DETAILS SEE
                        http://www.eurocontrol.int/aim/opadd
```

Example 19:
```
            Request:    ZCZC …
                        GG EBBRYNYN
                        151030 LOWWYNYX
                        RQN EBBR A0523/08-A0626/08

            Reply:      ZCZC …
                        GG LOWWYNYX
                        151035 EBBRYNYN
                        RQR
                        RQN EBBR A0523/08-A0626/08
                        YOUR REQ MSG EXCEEDS MAX NR OF 100 NOTAM
```

Example 20:
```
            Request:    ZCZC …
                        GG EBBRYNYN
                        151030 LOWWYNYX
                        RQN EBBA A0523/08-A0626/08
```

Reply: `ZCZC …`
`GG LOWWYNYX`
`151035 EBBRYNYN`
`RQR`
`RQN EBBA A0523/08-A0626/08`
`REQUESTED NOF OR SERIES NOT MANAGED`

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5   PROCEDURES FOR SNOWTAM, ASHTAM AND SPECIAL CONDITIONS

5.1   Introduction

5.1.1   Two types of operationally relevant messages are described in ICAO documentation and distributed via the AFS. As these messages are operationally relevant, their processing is required to enable database storage and consequently further retrieval for their incorporation in PIB. The concerned messages are:

SNOWTAM and

ASHTAM

5.1.2   SNOWTAM and ASHTAM are expected to be received in their defined format. Therefore, it is anticipated that they shall neither be edited nor corrected nor summarised. If a message is detected as received obviously incorrect (e.g. garbled), a query shall be addressed to the originator for clarification. This processing can be done by individual or centralised Units.

5.1.3   Hazardous winter conditions or bird hazards (if operationally significant) can also be published by means of NOTAM.

5.2   SNOWTAM

5.2.1   Definition

5.2.1.1   'A special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area by means of a specific format.'[3]

5.2.1.2   During periods when deposits of snow, ice, slush or water associated with these conditions remain on the aerodrome pavements, information on such conditions should be disseminated to all to whom the information is of direct operational significance. Use of the ICAO Doc 8400 abbreviations (Ref [7]) and plain language is also permissible.

5.2.1.3   For details of SNOWTAM Items refer to the ICAO Annex 15 (Ref. [1]), Appendix 2 and Doc 8126 (Ref [2]), Ch 6 Appendix A.

Note: For details on clearing requirements refer to ICAO Doc 9137 AN/898/Airport Service Manual, Part 2.

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[3] Source: Annex 15, 12th Edition, chapter 2.

5.2.2 Procedures for SNOWTAM creation

5.2.2.1 SNOWTAM identification shall appear in the first line of the AFTN message text and shall start with the SNOWTAM indicator 'SW' followed by the designator for the State e.g. 'EF', and a serial number in a four-figure group. The aerodrome to which the SNOWTAM refers to is indicated with its four-letter location indicator. The observation time is shown as an eight-figure group.

```
Example: SWEF0001 EFTP 11250800
```

5.2.2.2 The maximum validity of an SNOWTAM is 24 hours.

5.2.2.3 Examples

Example 1:
```
GG EFCC….
291225 EFTPZTZX
SWEF0587 EFTP 11291215
(SNOWTAM 0587
A) EFTP B) 11291215 C) 06 E) 40
F) 47/47/47 G) 3/3/3 H) 75/78/75 SKH N) 7 R)47
T) RWY CONTAMINATION 100 PER CENT. SURFACE FRICTION:
    ON TWY MEDIUM TO GOOD, ON APRON MEDIUM TO POOR)
```

Where the header is composed of:

GG	= priority indicator.
EFCC….	= addresses.
291225	= origin time.
EFTPZTZX	= originator.
SWEF0587	= SW is the data designator for SNOWTAM; EF are the nationality letters for the state (in this case Finland); 0587 is a four digits serial number.
EFTP	= 4-letter location indicator of the aerodrome to which the SNOWTAM refers.
11291215	= date/time of observation as month, day, hour and minute in UTC, all by two digits (in this case 29th of November, 1215 UTC).

Where the message is composed of:

SNOWTAM	= designator for the SNOWTAM.
0587	= the SNOWTAM number (the same four digits serial number as in the header).
A) EFTP	= Item A) aerodrome location indicator (the same as in the header).
B) 11291215	= Item B) date/time of observation (same as in the header section).
C) 06	= Item C) lower runway designator number (for RWY 06/24 the lower runway designator number is 06).
E) 40	= Item E) cleared runway width in metres, if less than published width (in this case, the published width is 45 metres and cleared width is 40 metres only).

F) 47/47/47   = Item F) deposits over the total runway length, observed on each third part of the runway starting from the threshold with lower runway designator number (in this case a combination of dry snow (4) and ice (7) on each third part).

G) 3/3/3   = Item G) depth of the deposit(s) in millimetres for each third of the total runway length (in this case the mean depth of the deposits is 3 millimetres on each third part).

H) 75/78/75 SKH = Item H) friction measurements on each third of the runway and friction measuring device (in this case the measured friction coefficient values for each third part of the runway are 75, 78 and 75 - starting from the threshold with lower runway designator - and the measurement device used is skiddometer with high-pressure tyre)

N) 7   = Item N) taxiway conditions (in this case ice – deposit code for ice is 7 as described in Item F of the SNOWTAM format)

R) 47   = Item R) apron conditions (in this case a combination of dry snow and ice – deposit codes for dry snow (4) and ice (7) as described in Item F of the SNOWTAM format)

T) RWY CONTAMINATION 100 PER CENT. SURFACE FRICTION: ON TWY MEDIUM TO GOOD, ON APRON MEDIUM TO POOR

    = Item T) plain language field for any additional information (in this case the extent of the runway contamination (Item F above) is between 51 and 100 %. The estimated surface friction for taxiways and apron are also given)

<u>Example 2:</u>

'When reporting on two or three runways, repeat Items C) to P) inclusive':[4]

```
GG EDZZ.... ........
300645 EDDKYDYX
SWED0012 EDDK 12300630
(SNOWTAM 0012
A) EDDK  B) 12300630
C) 14L F) 2/2/2 G) 30/30/40 H) 5/5/5
C) 14R F) 5/5/5 G) 30/30/40 H) 9/9/9
C) 07 F) 5/5/5 G) 40/30/30 H) 9/9/9
R) 2 S) 12300800
T) RWY CONTAMINATION 100 PERCENT. SNOW REMOVAL IN
   PROGRESS)
```

<u>Example 3:</u>

```
GG EKZZ…. ........
130429 ESSAYNYX
SWES0051 ESSA 01130400
(SNOWTAM 0051
A) ESSA B) 01130400
C) 01L E) 50 F) 17/17/17 G) 01/03/02 H) 74/70/73 SFH
L) TOTAL M) 0500 N) 127/GOOD
C) 08 D) 2300 E) 30 F) 17/17/17 G) 01/01/01 H) 71/72/66 SFH
J) 60/5LR K) YESL L) 2500/45 M) 0500 N) 127/GOOD P) YES8
R) 127/MEDIUM-GOOD S) 01131000
T) RWY 01L CONTAMINATION 10 PERCENT, RWY EDGES CONTAMINATION 60
PERCENT F) 5 G) 30,
RWY 08 CONTAMINATION 50 PERCENT UNCLEARED PARTS CONTAMINATION
100 PERCENT F)5 G) 50,
TWY CONTAMINATION 10 PERCENT 1MM.
```

---

[4] Doc 8126 (Ref [2]) page 6-A-14 para 1 a).

```
TWY S CONTAMINATION 50 PERCENT F)56 G)20 H)40 SFL,
APRON CONTAMINATION 25 PERCENT 1MM.
DEICING CHEMICALS USED ON RWY 01L AND 08. RWY 01R CLSD.
```

Note: Item D is rarely used in SNOWTAM as the RWY is normally cleared full length. A reduction in length for IFR RWY affects declared distances.

5.2.3   Procedures for SNOWTAM processing

5.2.3.1   The format detailed in Annex 15 (Ref [1]) Appendix 2 shall be strictly adhered to.

5.2.3.2   A list of aerodromes for which SNOWTAM are likely to be issued shall appear in an AIS publication (AIP, AIP SUP or AIC) together with details of the originators and of the numbering system to be used.

5.2.3.3   It is recommended to adopt a numbering sequence starting at the beginning of the year.

5.2.3.4   It will be necessary for systems to identify the latest SNOWTAM for each affected aerodrome by reference to the serial number and observation time.

5.2.3.5   Only one SNOWTAM can be valid for each affected aerodrome at any one time.

5.2.3.6   The next planned observation may be declared in Item S), but whenever a significant change of the weather condition occurs, a new SNOWTAM shall be published and will completely replace any SNOWTAM previously issued.

5.2.3.7   On aerodromes where snow removal is not organized and not expected to be performed (e.g. in maritime climate areas), information about hazardous winter conditions may be issued by NOTAM.

5.2.3.8   The maximum validity of a SNOWTAM is 24 hours.

5.2.3.9   The incorporation of SNOWTAM in PIB is highly recommended, as it improves pre-flight briefing and provides airline operators with more comprehensive information.

5.3   ASHTAM

5.3.1   Definition

5.3.1.1   "A special series NOTAM notifying by means of a specific format change in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations." [5]

5.3.1.2   When notification of such activity is made, the ASHTAM provides information on the status of activity using a 'volcano level of alert colour code'.

5.3.1.3   The ASHTAM also provides information on the location, extent and movement of the ash cloud and on the air routes and flight levels affected.

---

[5] Source: Annex 15 (Ref [1], 12th Edition, chapter 2.

Example:
```
161143 WRRRYNYX
VAWR0004 WAAF 05161137
(ASHTAM 0004
A) WAAF
B) 0805161137
C) AWU 0607-04
D) 0340N12530E
E) YELLOW
F) 1320M/4331FT
G) SFC/FL100 WINDS SFC/FL100 260/10KT
I) CTN ADZ OVERFLYING FOR R590 R342
J) YMMCYMYX
```

5.3.1.4   For details of the format refer to ICAO Annex 15 (Ref. [1]), Appendix 3.

5.3.2   Procedures for ASHTAM creation

5.3.2.1   ASHTAM identification shall appear in the first line of the AFTN message text and shall start with the ASHTAM indicator 'VA' followed by the designator for the State e.g. 'LI', and a serial number in a four-figure group. The FIR to which the ASHTAM refers is indicated with its four-letter location indicator. The observation time is shown as an eight-figure group.

Example: `VALI0001 LIRR 11250800`

5.3.2.2   Item C) shall contain both, volcano name and its unique identification number as contained in ICAO Doc. 9691 (Ref. [7]), Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds, Appendix F.

Name and identification number shall be separated by one blank.

`Example: C) AWU 0607-04`

5.3.2.3   The maximum validity of an ASHTAM is 24 hours.

5.3.2.4   Whenever there is a change in the level of alert, a new ASHTAM shall be published.

5.3.2.5   If an ASHTAM has to be created for a volcano not listed in ICAO Doc. 9691, the 'existence' of the volcano shall be promulgated by normal NOTAM, Item C) to contain PERM.

Any observations on its volcanic activities shall also be published by normal NOTAM until ICAO Doc. 9691 (Ref. [7]), Appendix F is updated. NOTAM on observations remains in force for 24 hours (Item C) as for ASHTAM.

In the case that information on observations are nevertheless intended to be published by means of ASHTAM instead, this intention shall be clearly stated in the NOTAM containing the general information of the volcano, so that the list of existing volcanoes can be manually updated in processing systems to allow auto-processing.

5.3.2.6   Information about volcanic activity or the presence of volcanic ash plumes may also be reported by NOTAM.

Item B) actual date/time of NOTAM creation;

Item C) actual date/time of NOTAM creation + 24 hours;

Item E) the relevant information as contained in the ASHTAM.

To ensure speedy transmission of initial information to aircraft, the first ASHTAM or NOTAM issued may simply contain information that an eruption and/or ash cloud has been reported and the date/time and location. For further details and additional distribution addresses refer to ICAO Doc 9766 (Ref. [8]) International Airways Volcano Watch, part 4.

5.3.3   Procedures for ASHTAM processing

5.3.3.1   The incorporation of ASHTAM in PIB is highly recommended, as it improves pre-flight briefing and provides airline operators with more comprehensive information.

5.3.3.2   An ASHTAM is normally auto-processed. Its abbreviated heading, Item C) and Item A) are checked before storage.

5.3.3.3   The identification (name and number) of the volcano in Item C) of an incoming new ASHTAM is compared with the volcanoes listed in ICAO Doc. 9691 (Ref. [7]), Appendix F.

5.3.3.4   A volcano is identified if name and identification number refer to the same volcano. The ASHTAM is stored in the database and made available for the FIR indicated in the abbreviated heading. Its storage will completely replace any ASHTAM previously issued for the same volcano. ASHTAM of other volcanoes remain valid instead.

5.3.3.5   An incorrect syntax in an ASHTAM Item used for the identification or storage is corrected before further processing.

5.3.3.6   Item A) is roughly checked by the system before storage. If the system recognises FIR location indicator(s) in Item A rather than plain-language, automated processing of ASHTAM is discontinued if the FIR location indicator is different from the one in the abbreviated heading or if Item A) contains more than one FIR.

If the location indicator indicated is different, it is either corrected or 'NOTAM SUBJECT TO QUERY' procedure applies. If the ASHTAM is received with more than one FIR in Item A, a NOTAM series T shall be created for all FIR except for the one given in the abbreviated heading. Item E) of this series T NOTAM shall contain all Items from and incl. A) to and incl. K). Items not completed by the publishing NOF in the original ASHTAM shall be left blank.

5.3.3.7   An ASHTAM is self-expiring 24 hours after its creation unless it is replaced earlier by a new ASHTAM.

5.3.3.8   If the volcano can not be clearly identified, 'NOTAM SUBJECT TO QUERY' procedure shall be applied by a new Ashtam for the same volcano.

5.4   Bird Hazards

5.4.1   Definition

5.4.1.1   A bird hazard designates the presence of birds constituting a potential hazard to aircraft operations.

5.4.1.2   The permanent presence of birds is contained in the AIP, whereas the notification of such activities on short notice shall be published by NOTAM.

5.4.2   Procedure

5.4.2.1   Bird hazards, if published, can be communicated by means of NOTAM.

5.4.2.2   The 4th and 5th letter 'HX' of the NOTAM Code serves as means of identification for the publication of bird hazards, e.g. QFAHX.

5.4.2.3   Item E shall contain clear text with standard ICAO abbreviations. Specific bird related abbreviations should be avoided to facilitate readability and to prevent queries.

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6   OTHER PROCEDURES

6.1   Multi-Part NOTAM

6.1.1   General Principles

6.1.1.1 'Each NOTAM shall be as brief as possible' [6]. However, there are cases where a NOF wishes to produce a NOTAM exceeding the AFTN message length (normally 1800 characters including non-printing characters, but as few as 1200 in some countries). In these cases, a Multi-part NOTAM may be unavoidable.

6.1.1.2 Even though the recommendation is that every endeavour should be made in order to avoid the creation of Multi-part NOTAM, a standard numbering scheme will facilitate the processing of Multi-part NOTAM when they are used.

6.1.2   Procedures for Multi-Part NOTAM

6.1.2.1   Each part of the Multi-part NOTAM is a separate NOTAM Message with each Item present from Item Q) to Item D) (if present) inclusive, and Item E) continuing text. Each part shall have the same NOTAM type and has the same NOTAM number followed by a sub-number. If present, Items F), G) and X) are transmitted with the last part only.

6.1.2.2   NOTAMR is not permitted for the replacement of an individual part of a Multi-part NOTAM.

6.1.2.3   In case of cancellation of a Multi-part NOTAM, all parts are cancelled by the NOTAMC. Cancellation of individual parts is not permitted.

6.1.2.4   The sub-number is placed immediately behind the year of the number/year combination, without a space.

6.1.2.5   The sub-number is identified by one letter ('part identifier' e.g. A = Part 1, B = Part 2, etc.) and a number, always consisting of 2 digits ('number of parts', e.g. 05 = 5 parts). This enables up to 26 part Multi-part NOTAM.

6.1.3   Examples

        `A1234/08A02`(means   Part 1 of 2)

        `B1235/08B05`(means   Part 2 of 5)

        `A5678/08C03`(means   Part 3 of 3)

        `B6453/08D06`(means   Part 4 of 6)

---

[6] ICAO Annex 15 (Ref [1]) para 5.2.9.

The following example shows the NOTAM Identification of a Multi-part NOTAM
consisting of 4 parts.

```
(A1234/08A04 NOTAMN
Q) .........................
A) ......
B) ......
C) ......
E) ......                  )

(A1234/08B04 NOTAMN
Q) ...........................
A) ......
B) ......
C) ......
E) ......                 )

(A1234/08C04 NOTAMN
Q) ...........................
A) ......
B) ......
C) ......
E) ......                 )

(A1234/08D04 NOTAMN
Q) ...........................
A) ......
B) ......
C) ......
E) ......
X) ......                 )
```

7 GUIDELINES FOR THE CREATION AND PROVISION OF PRE-FLIGHT INFORMATION BULLETINS (PIB)

7.1 Introduction

This chapter is intended to present guidelines concerning the provision of Briefing primarily in form of the PIB, to elucidate on:

- Bulletin types;

- filtering for NOTAM based on the NSC and other related filters; and the

- main PIB structure and layout when integrating various messages into the PIB.

Additionally, some aspects in relation to 'Integrated Briefing' are presented in order to enable addressing key user requirements for enhanced briefing services.

Relevant links are provided to existing EUROCONTROL documents covering the function of 'Integrated Briefing'. Requirements for automated aeronautical information systems are contained in ICAO Annex 15 (Ref. [1]) paragraphs 3.1, 8.1, 8.2 and ICAO Doc 8126 (Ref. [2]) chapter 9. Where chapter 9 did not provide any guidelines, chapter 8 has been taken into consideration even though primarily intended for manual or semi-automated environment.

7.1.1 Understanding and Background

An aeronautical information service (AIS) is obliged to provide relevant aeronautical information (AI) which is mainly available in the form of the Integrated Aeronautical Information Package (IAIP). The pilot is obliged to obtain and prepare him/herself before conducting a flight.

The process where a user, depending on flight intent or an ad-hoc need, is supplied with or supplies himself with all relevant aeronautical information (AI) in order to plan or to execute a flight or to obtain generic information related to flight operations, is known as briefing. The facts and knowledge obtained support the process of taking the decision if a flight or flight related action can be performed safely and efficiently or not.

Note: Refer to 'Integrated Briefing High-Level Concept Document' chapter 2.2. Reference material at: http://www.eurocontrol.int/aim/public/standard_page/interop_ib_intro.html

In an automated environment, AIS is often not personally present at aerodromes and the provision of relevant data is assured through (self) briefing systems supported by means of consultation.

The typical system output of a briefing process concerning dynamic data (NOTAM and related special series NOTAM such as SNOWTAM and ASHTAM) is the 'Pre-flight Information Bulletin (PIB)'. Additionally, static data such as AIP, AIP SUP or AIC is either provided through consultation or in electronic form through briefing systems or is made available in paper form at the AIS or/and ARO offices.

7.1.2   The basic user requirements related to Briefing

Many users are currently 'over-supplied' with a large amount of information. Therefore, the duty for any briefing function, whether automated or not, is to be able to support the pilot (user) with specific and relevant information whilst avoiding information overload through maximum customisation support.

The basic user requirements for a briefing facility/service can be summarised as follows:

- Enable a standard product to be produced as a minimum service.

- Provide the pre-flight information which is relevant to a flight (user), on request.

- Enable the pilot to obtain a briefing that is structured to suit their particular needs.

- Improve the ways briefings are conducted and delivered.

- Reduce the amount of time taken to obtain a briefing.

- Provide easy access to information incl. updates thereafter.

- Provide this information at any time and location the pilot wishes.

Note: Based on the European Convergence and Implementation Plan (ECIP) objective INF04 'Integrated Briefing' (and to some extend Annex 15 para 8.2.2 and Doc 8126 para 9.6 and Appendix B, page 9-B-2) services go beyond this scope in order to integrate several data sources, namely: AIS, ARO, MET and ATFCM information. Any detail is beyond the scope of this chapter, however, some more information is contained in paragraph 7.12 addressing 'Integrated Briefing'.

7.2   Data Selection Layers

The user will be able to select the information that will be included in the PIB at various levels. Those levels are:

- PIB type

- Message types

- Message filters

- User data / input.

In order to retrieve NOTAM from a database a range of criteria and so-called filters shall be applied to enable customised and tailored briefing output based on individual user requirements. On top of that, default settings would cater for standardised / generic output. The following figure shows the relationship between the different information selection levels that may be employed by the User for the retrieval of a PIB.

PIB
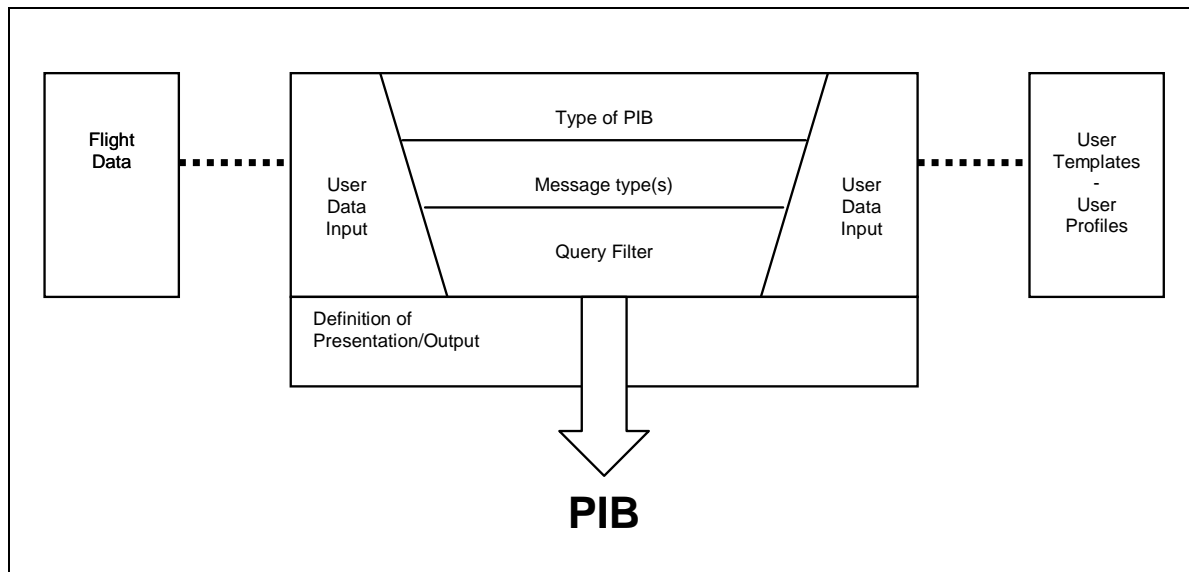
7.3 Types of Bulletins - PIB

Following main bulletin types are defined by ICAO.

- Area type Bulletin;

- Route type Bulletin;

- Aerodrome type Bulletin;

- Administrative Bulletins.

A general description of each of these types is given below. For further reference see ICAO Doc 8126, chapter 8.

7.3.1 Area type Bulletin

Area or FIR type bulletins consist of relevant information such as NOTAM, SNOWTAM, ASHTAM containing information on facilities, services, procedures and possible hazards related to FIR(s) or country or specified area. It may also include selected aerodromes situated inside a selected area. The PIB will only present NOTAM inside the selected FIR(s) or country or area.

An Area type PIB may present:

- An FIR or selected FIRs

- Groups of FIRs or pre-defined (adjustable) areas or groups of countries (e.g. Benelux, Alpine, Central Europe).

- A user defined area by:

    o Given airspace or special areas (special areas, TMA, CTR, ACC sectors etc.).

        Note 1: Such areas are only available for selection if defined by coordinates in the database of the PIB system.

       o   single aerodrome information plus information from surrounding vicinity (selection of AD, range plus ground up to selected flight level). If range is requested, NOTAM irrespective of national boundaries are to be provided, including those of relevant 'dummies'.

       o   coordinates or AD names or AD location indicators plus radius.

       o   a polygon defined by coordinates, AD names, AD location indicators or Navaids.

Note: An area type PIB provides at least the options: area info only, area info and AD info for selected area, AD info for selected AD within the area.

Concerning NOTAM, PIB will present NOTAM containing, if selected:

- NSC scope for Enroute information: E, W, AE, AW

- NSC scope for aerodrome information: A, AE, AW

- Requested FIR or country location indicator in Item A) or a geographical reference intersecting with the defined area.

- Qualifying criteria in accordance with the filters applied (refer to 7.5)

- For inclusion of Aerodrome information refer to 7.3.3.

Note: When a 'dummy' FIR is selected or if an area intersects an FIR that is part of a 'dummy' FIR location indicator (e.g. UUUU, ZBBB, KFDC or KNMH), the information of the dummy FIR shall be provided (dummy FIR see 3.18.2.3).

7.3.2   Route type Bulletin

Route type bulletin is a bulletin based on a generalised route of flight that may also be the route information as contained in FPL field 15. It provides relevant messages such as NOTAM, SNOWTAM and ASHTAM containing information on facilities, services, procedures and possible hazards along the specific route flown. It presents the crossed FIRs in the sequence of flight plus the selected aerodromes.

For route type bulletins based on FPL for IFR and mixed FPL, the acknowledged (ACK) route shall be taken into account, whenever possible.

A Route PIB presents information based on the following principle:

- Aerodrome information: aerodrome of departure, destination, alternate(s).

- Route information. FIR or the sequence of FIRs crossed by the intercepted flight route (source FPL/RPL or user input).

Concerning NOTAM, PIB will present NOTAM containing, if selected:

- NSC scope for Enroute information: E, W, AE, AW

- NSC scope for aerodrome information: A, AE, AW

- Requested FIR or country location indicator in Item A)

- Qualifying criteria in accordance with the filters applied (ref. 7.5)

For inclusion of Aerodrome information refer to 7.3.3.

Note: When selecting 'dummy' FIRs this shall be taken into account by the system (ref. 7.3.1).

7.3.2.1 Narrow Route type Bulletin:

A Narrow Route Bulletin is a bulletin based on a specific route of flight usually based on the route information as contained in FPL field 15. It may also be based on a flight path with a defined width along: significant points, airways, Navaids, coordinates, direct between aerodrome of departure (DEP) and aerodrome of destination (DEST). Only NOTAM that intersect with the narrow route path and meet other related filter criteria are included in the 'Narrow Route (path) PIB'.

The recommended default value for a route width is 20 NM (meaning 10NM left and right of the calculated flight path).

A Narrow Route PIB presents information based on the following principle:

- Aerodrome information: aerodrome of departure, destination, alternate(s).

- Route information (source FPL/RPL or user input).

Concerning NOTAM, the PIB will present only those NOTAM containing:

- A geographical reference intersecting with the defined route corridor

- NSC scope for Enroute information: E, W, AE, AW

- NSC scope for aerodrome information: A, AE, AW

- A geographical reference intersecting with the route to the first alternate AD (ALTN) if not on the intersected flight path (by user input unless RIF/ is indicated in FPL/RPL).

- Qualifying criteria in accordance with the filters applied (refer to 7.5).

For inclusion of Aerodrome information refer to 7.3.3.

Note: Departure and Arrival aerodrome must be taken into account. Depending on the level of the briefing system, special filtering is to be applied so that either the flight level filtering takes full account of the SID/STAR flown, or within a radius or cylinder around the AD of DEP/DEST the flight level limitation is neglected (irrespective of FIR boundaries).

Note: When selecting 'dummy' FIRs this shall be taken into account by the system (ref 7.3.1).

7.3.3   Aerodrome type Bulletin

Aerodrome type bulletins consist of dynamic messages such as NOTAM and SNOWTAM containing information on facilities, services and procedures related to an aerodrome or its vicinity.

This bulletin provides messages for aerodromes at least covering following options:

- single aerodrome information only (selecting aerodrome name or location indicator)

- all aerodromes within an FIR (or other predefined area) or a group of FIRs

- a list of all or specified aerodromes within a given airspace or special area, e.g. ACC sector (aerodrome information only).

Concerning NOTAM, the PIB will present only those NOTAM containing:

- NSC scope for aerodrome information: A, AE, AW.

- an aerodrome indicator in Item A) plus those with country code and XX in item A. Refer to 7.7.3 for the selection of aerodromes with country code and XX.

- if selected, NSC scope AE, AW if the geographical reference is intersecting with the defined area surrounding an AD.

- qualifying criteria in accordance with the filters applied (refer to 7.5).

Note 1: When selecting 'dummy' FIRs this shall be taken into account by the system (ref 7.3.1).

Note 2: The term 'aerodrome(s)' includes heliport(s).

7.3.4   Administrative Bulletins

Administrative bulletins are reports for specialised users and provide a list of valid NOTAM offering further selection options. This type of bulletins is foreseen mainly for AIS/NOF officers but also other specialised users who are familiar with NOTAM procedures, the NOTAM format and the query procedures for PIB/reports.

Specialised functions should allow additional filter criteria enabling to retrieve by e.g.:

- NOTAM number or range of numbers

- All NOTAM in force

- Country(ies)

- NOF

- NOTAM series

- all PERM NOTAM

- Trigger NOTAM (all valid; effective from (AIRAC date or user defined)

- Obstacle NOTAM (subject codes 'OB' and 'OL')

- Company profile (or as option in user profiles)

- NOTAM by subject

- EST NOTAM.

- Checklist

- NOTAM processed (since a specified date-time group / by whom)

- History: system history of changes, retrieved bulletins/ID

- Administrator functions.

7.4   Types of Messages/elements to be included in the PIB

Following types of dynamic messages shall be selectable for inclusion in the PIB.

- Civil / Military NOTAM (if available), or combinations;

- International series or national series, or combinations;

- National NOTAM in national language;

- Types of messages:

    - NOTAM

    - SNOWTAM

    - ASHTAM

    - Other (pre-defined service notes)

- Other elements such as predefined maps or local information.

7.5   Criteria for PIB Customisation – Query Filters

Apart from the selection based on PIB types and type specific entries (FIR(s) and/or AD, selection or definition of area or route), the following filters are applied to reduce the PIB output:

- Time window for PIB validity

- NSC qualifiers applied

    - Related PIB output

- Vertical criteria (flight levels)

- Geographical criteria

7.5.1   Time window for PIB validity:

- At a given date and time = current.

    Content: NOTAM valid.

    Main purpose: overview/general planning.

    Main users: airport authorities and other NOTAM originators, dispatcher/station manager/business aviation and other long term planning units, NOF, CAA.

    PIB types: all PIB types and administrative bulletins (e.g. checklists).

- FPL based, i.e. for a given EOBT, all NOTAM active between this time and in the next given number of hours.

    Content: NOTAM active.

    Main purpose: performing a flight.

    Main users: crew/pilots.

    PIB types: FPL based PIB (usually Route or Narrow Route PIB).

    Possible default setting for a FPL based time window:

    PIB validity by default: (EOBT-1 HR) till (ETA + 4HR).

    A system should offer the possibility to adjust the default for a FPL based time window.

- For time periods e.g. current date/time plus 'x' hours, from-to.

    Content: NOTAM active.

    Main purpose: performing a flight, specific overview.

    Main users: crew/pilots, dispatcher/station manager/business aviation for short-term planning.

    PIB types: all PIB types except for administrative bulletins.

Note 1: For administrative bulletins the default values depend on the type of bulletin.

Note 2: For systems not offering the query of active NOTAM, all NOTAM in force for the selected time window may be provided instead, irrespective if active or not during the requested time window.

Further selection options for PIB types:

- Excluding those NOTAM active since more than a given time period. Note: This option shall not be available if the filtering is done based on active NOTAM.

- Including those NOTAM that expired since a given number of hours.

7.5.2 NSC qualifiers applied

For NOTAM, NSC qualifiers and NOTAM code act as retrieval filters to tailor PIB content.

- Traffic:

    o IFR: IFR PIB to include all NOTAM with traffic I and IV;

    o VFR: VFR PIB to include all NOTAM with traffic V and IV;

    o Combination IFR/VFR: PIB to include all NOTAM with traffic I, V and IV;

    o Mixed flight rules (ref. FPL): for each portion of the flight only NOTAM with the traffic corresponding to the flight rules of the respective portion of flight shall be included.

- Purpose:

    o N - NOTAM for the immediate attention of aircraft operators,

    o B - NOTAM for standard PIB entry,

    o O - NOTAM concerning flight operations,

    o M - NOTAM carrying miscellaneous information.

- Scope:
    This qualifier relates the NOTAM subject (2nd and 3rd letter) to a specific scope. This qualifier is used to determine under which category/section a NOTAM is presented inside a PIB.

    o A (Aerodrome information) refers the NOTAM to the scope of aerodromes.

    o E (Enroute) refers the NOTAM to the scope of 'Enroute information'.

    o W (Warning) refers the NOTAM to the scope of 'Navigation Warnings'.

o   or the combinations AE, AW.

- Exclusion of Trigger NOTAM as option (system selection by condition 'TT').

- Exclusion of obstacles (system selection by subjects 'OB' and 'OL').

7.5.2.1 Purpose related PIB output

- Immediate Notification: filters set to NBO, (NB[7]);

- Operationally significant information: filters set to NBO, BO;

- Bulletin: filters set to B, BO, NBO, (NB);

- All NOTAM: filters set to B, BO, NBO, (NB), M;

- Miscellaneous: filters set to M.

In a 'default briefing' (default filter setting; modifiable by a user) no filtering is performed by the system on the qualifier 'Purpose' and the PIB will display all NOTAM (M, B, BO, (NB), NBO).

Note: NSC in their current form raise numerous concerns with service providers and users. Shortcomings have been observed with respect to the qualification of the purpose for some subjects and revisions have been identified and were forwarded to ICAO with pending global resolution. For example: 'Rapid Exit Taxiways' according Doc 8126 need to be qualified as Taxiway with 'M' only. Due to this fact OPADD, for the time being, suggests providing 'all NOTAM' as default PIB setting with a possibility that users may change the setting at any time on their own discretion. The application of this default is left to the individual service provider at their own discretion in interaction with their clients.

7.5.3   Vertical Criteria (Flight Levels)

Flight levels will enable to tailor the PIB content whenever appropriate (lower/upper). System selection is based on lower and upper limits of the Q-Line.

7.5.3.1 Departure and Arrival

Departure and Arrival aerodrome must be taken into account. Depending on the briefing system, special filtering is to be applied so that either the flight level filtering takes full account of the SID/STAR flown, or within a radius or cylinder around the AD of DEP/DEST the flight level limitation is neglected (irrespective of FIR boundaries).

7.5.4   Geographical criteria

System selection is done by the geographical reference of the Q-Line (coordinate and radius) and applies only to those area or route type PIB requiring more precise information about the location than Item A) provides, e.g. Narrow Route, user or system defined areas. NOTAM

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[7] Whilst change is expected, the use of 'NB' remains prescribed in the ICAO NSC at the time of writing this edition.

are only provided if the geographical reference intersects with the location of the selected area.

'Dummy' FIRs or NOTAM applicable to a whole country (radius 999) shall also be taken into account by the system if the area or route intersects with this country.

Note: For systems supporting PIB types based on the geographical reference, plausibility check of the geographical reference is recommended before NOTAM storage.

7.6   Principle structure of a PIB

A PIB (report) should be structured into the following main sections/parts and sequence:

- The PIB header:

    PIB header informs about the service provider, date and time of the PIB query, PIB validity, requested PIB type and content (e.g. requested aerodromes), selection criteria/filters applied as well as any other information regarding the PIB content, special symbols used, if applicable, e.g. PIB ID.

    The chosen time window must be clearly indicated in the PIB header as PIB validity, e.g.: From 10 DEC 2008 11:55 To 12 DEC 2008 06:00

    For examples of a possible PIB Header refer to chapter 4 of Integrated Briefing – iPIB Guide [AIM/AEP/BRIEF/0029] available on http://www.eurocontrol.int/aim/gallery/content/public/pdf/ib_ipib.pdf

- The Aerodrome section:
- Departure
- Destination
- Alternate(s) according the FPL
- The Enroute (FIR) section:
- FIR of departure
- FIRs in sequence of the flight
- FIR of destination
- Additional Information (further Enroute alternates etc.).

7.6.1   NOTAM sorting

Based on the above main PIB sections further default sorting criteria apply:

- NOTAM shall be grouped inside the PIB section: Aerodrome, FIR, Additional Information.
- According to user requirements the newest NOTAM shall be given on top.
- Enroute NOTAM to be differentiated between enroute NOTAM (scope E and AE) and navigation warnings (scopes W and AW).

- The same NOTAM text should appear only once (no duplicates over different FIRs). In further FIRs, if relevant, only a reference to the NOTAM number shall be provided. The (online) system may offer a hyperlink to this NOTAM.

- On top of the default settings further sorting options shall be offered for all PIB types e.g.: sorting according to effective date, NOTAM Codes' by subject groups, by flight route, default by briefing type or user preferences etc.

7.7   PIB - specific presentation considerations

PIB sections cluster the message sub-sections (see also 7.12.2.2) which themselves contain the message groups. Messages are integrated depending on the actual PIB type e.g. a RWY NOTAM does not appear in the FIR section.

7.7.1   General layout considerations

The PIB shall be produced based on queried types of messages/elements, selected PIB type on the basis of the chosen time window, other customisation criteria and query filters applied.

In general all Items are presented in a self-explanatory form with the following exceptions:

- the Q-line which only serves as filtering feature and may be confusing for users; and

- Item A which is already present in the header and/or item E).

For the printed PIB, the pages have to be clearly indicated in the form of 'page of pages' e.g. 01/15.

If no NOTAM is valid for a requested aerodrome or FIR, the PIB would indicate 'no data available' for a requested aerodrome or FIR or area.

A 'disclaimer' section at the end of the PIB should remind of other parts of the IAIP also clearly indicating that trigger NOTAM will be listed for a period of 14 days only. Afterwards other means than the PIB will have to be used to get access to the IAIP full information.

> *Example: 'Permanent and long term information as well as short term information containing extensive text and/or charts are not included. Consult AIP and AIP SUP in force for this type of information. A reminder (trigger NOTAM) of such data is usually only provided in PIB for 14 days.'*

'End of PIB' is to be indicated.

7.7.2   Presentation of dates/times

Dates/times shall be generally encoded, example: 8th August 2008 at 6h35 in the morning would be displayed in the PIB as: 08 AUG 2008 06:35.

7.7.3   Location Indicators

Those should be translated into plain language whenever possible. System help functions must be provided to enable flexible entry of: plain name or ICAO code or IATA code supported by search features.

Aerodromes without allocated location indicator can not be identified by Item A) of the NOTAM (country code and XX/XXX). They are stored by their plain name which is provided on the first line of Item E). Selection is in this case done by the aerodrome's plain name. System features may also allow entering a country code and XX and provide a list of available aerodromes for further selection.

7.8   Delivery of PIB

A choice of different ways or interfaces for (automatic) PIB delivery shall be provided to the customers e.g.:

- Fax

- World Wide Web

- Email

- Remote print

- Scheduled delivery for large scale customers.

7.9   PIB - additional elements to be considered

7.9.1   Provision of AIP-SUP in relation to PIB

In order to remain compliant with Annex 15 pilots need access to relevant AIP-SUP. Different means may apply and in the first instance it is the briefing officer who selects those elements for a briefing. However, considering extensive use of location independent means or selfbriefing systems, a more user friendly approach is required.

Recommendation: The system shall enable the user to select further elements such as AIP SUP.

In relation to automated systems it is to be noted that SUP do not have a structured field usable by a system which enables selective retrieval of this kind of information for a given pre-flight information bulletin.

The eAIP may be serving such a need concerning rapid and easy access enabled by hyperlinked information. However, this is only relevant if those elements are integrated through the selfbriefing system or relevant portal. On the contrary, it may be that a briefing service pre-selects specific SUP which may then be automatically annexed to PIB.

Further considerations should be given as to whether special selection features can be provided to enable an end user to access SUP directly e.g. through the inclusion of an URL in Trigger NOTAM.

7.9.2   Special areas

Special areas (incl. shooting areas) in graphical form may either be directly attached to the PIB by default or may be referred through the system via web links, trigger NOTAM or by

storing SUP in briefing systems including associated criteria such as NOTAM subject code(s) and traffic for direct inclusion in PIB if SUP selected.

7.9.3 User information

An automated PIB system shall provide at least user information on: service provision, available PIB types, default settings and explanations of selection options. Further useful information should be considered e.g. explanation of IAIP package, list of subjects (plain name) included in the available PIB types indicating the NSC qualifier purpose, list of ICAO abbreviations, NOTAM/SNOWTAM/ASHTAM explanations. For systems allowing FPL filing, other information may be of help, e.g. ICAO aircraft type abbreviation, Route Availability Document (RAD), explanations on the FPL form.

Help desk: contact details shall be provided for further enquiries and/or where relevant parts of the IAIP not contained in the briefing system may be obtained from.

7.10 Update Services

7.10.1 Notification

An immediate automatic notification service may either be offered to supplement a PIB or for the provision of specific messages. It covers messages issued since the retrieval of a PIB or since subscribing to the notification service and consists of single messages informing users directly for example about a hazard.

If a 'notification service' is available, it will provide single messages received after the initial briefing (lag time). For example a NOTAM received after the initial PIB production, which fits the filtering criteria, will automatically be forwarded via the means specified by the user. The end date/time of the notification service is based upon the initial PIB query. All underlying notification criteria (type of message, type of event, filter, scope, end of notification period etc.) must be defined by the user through an appropriate user profile. It should be possible to specify the transmission means for the notification e.g. Fax, SMS, e-mail or even data link once available.
The maximum lag time should be limited to a certain (default) number of hours and be adjustable by the user.

A typical example may be the event of a Runway closure at a defined aerodrome or a SNOWTAM published for a defined aerodrome. Automatic notification also will provide NOTAMR and NOTAMC, in the case of NOTAM being selected. They are forwarded displaying also the relevant NOTAM number of the replaced/cancelled NOTAM.

Note: The ICAO term used for 'update notification service' is 'Immediate automatic notification of items of urgent operational significance'. This term suggests a limitation to NOTAM containing purpose 'N' only and would exclude other NOTAM of operational impact. Using the more general term 'Update Services' better reflects the use of the purpose letters and allows a wider, more user friendly provision of such a customised service.

7.10.2   Update PIB

More sophisticated systems should support updates to previously requested PIBs in form of an update briefing. If 'Update PIB' is selected the user will have to specify the 'Master PIB reference' for which the update shall be generated.

Creation of an Update PIB will only be possible if:

- The same briefing system has been used for production of the Master PIB.

- the Master PIB has not been retrieved longer than a certain number of hours or days in the past (e.g. 12 hours or 1 day).
  Note: The definition of hours/days will depend on storage capabilities of the Master PIB and the relevant underlying NOTAM. Considering the mass of messages published, maximum should be limited to a few days.

- the basic filter settings are unchanged (e.g. traffic, route or level bands).

- the user specifies the criteria and type of transmission inside the master PIB.

For Update briefings NOTAMR as well as NOTAMC will have to be displayed with relevant numbers of the replaced/cancelled NOTAM.

7.11   User specific Data

Modern briefing facilities are capable of providing a vast amount of information. It is essential to avoid overloading users as preparation time is limited.

This may be achieved by providing means whereby users may pre-select the type of information they receive in response to PIB query. For example, high-level wind information is not likely to be of any interest to a pilot flying VFR, whereas visibility condition information is essential.

Once set-up by a user, such settings should be maintained as part of the 'user's profile' so that this user can apply them again for any next briefing. Profiling addresses:

- Personal Information (e.g. contact details).

- Product relevant information (e.g. predefined PIB queries, sorting criteria) in the form of templates accessible at any time to the user.

- Standard message types being part of the PIB.

- Default filters applied.

- Display Format of messages and PIB structure (specific sorting of main parts e.g. AD of DEP – ENR – AD of DEST, ALTN etc.)

- Notification/Update criteria.

More detailed reference on those data may be found in chapter 5.3 of 'Integrated Briefing - Technical Concept Document' [AIM/AEP/BRIEF/0025] available at:
http://www.eurocontrol.int/aim/gallery/content/public/pdf/ib_technical.pdf

7.12   Possible Evolution of Briefing services

7.12.1   Integrated Briefing - the Concept of the 'One Stop Shop'

Integrated Briefing is a system or service fulfilling the generic Briefing process and enhancing it by integrating access to and provision of additional data elements such as AIS, ARO (FPL), MET, ATFCM or other information, as required.

> Note: By providing Integrated Briefing the process will appear to the end user to function as "single entity".

Today, the following briefing infrastructure prevails and it maybe described as 'Distributed Briefing Service':

- Facilities / services are often in different locations (offices);

- Each 'facility' has to be visited at least once;

- Time taken to visit each facility may be extensive;

- Multiple entry of flight details may lead to errors;

- Multiple (briefing) reports are complex for a user.

The ultimate future solution may be the 'Integration' of services at the system layer (portals) having the following advantages:

- Facilities / services with one application at one terminal (on-stop-shop);

- Single entry of flight details reducing the possibility of errors;

- Enabled user profiling and online services;

- Single, tailored briefing reports.
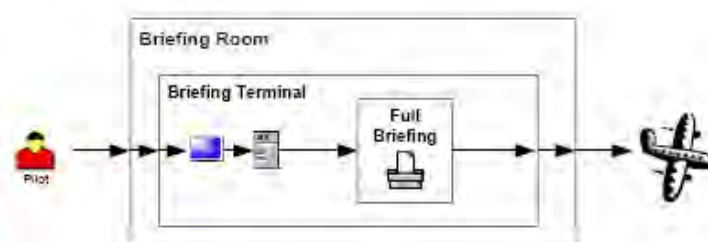
7.12.2   The following data elements should be integrated:

- AIS (NOTAM, SNOWTAM, ASHTAM, Static data elements of AIP, SUP etc.);

- ARO (flight plan and all related messages);

- MET (SIGMET, METAR, SPECI, TAF, Upper Wind and temperature, etc.);

- ATFCM (Flow messages related to the flight plan such as AIM, CRAM or flightplan updates); if update notification service or update briefing is available this would include also slot messages (SAM, SRM, FLS etc.).

- Other information such as local service notes etc.

7.12.2.1 Integrating AIS and MET messages

The different message entities are selected differently for PIB entry.

For example:

- SNOWTAM and METAR are retrieved on the basis of their existence for a specific aerodrome and are presented in the PIB section for that specified aerodrome.

- SIGMET and TAF are retrieved on the basis of their existence for a specific area or FIR and are presented in the PIB section for that specified area/FIR.

- NOTAM allow most selective retrieval, such as Area (Aerodrome and FIR), Traffic, Purpose, Scope. They also allow specific output based on message, subject or condition if required as defined by the NOTAM selection criteria.

Note: The MET data/messages required for Integrated Briefing are described in EUROCAE standards (ED151) which should be applied for system development.

7.12.2.2 Message subsections and the relevant message groups

Messages are integrated depending on the actual PIB type e.g. a METAR does not appear in the FIR section.

A user may prefer to sort subsections differently. Following default structure applies but should be customisable through user profiles.

For examples of a possible integrated PIB refer to 'Integrated Briefing – iPIB Guide' [AIM/AEP/BRIEF/0029] available on:
http://www.eurocontrol.int/aim/gallery/content/public/pdf/ib_ipib.pdf

7.12.2.2.1   MET messages:

- METAR
- SPECI
- TAF
- SIGMET
- GAMET

- AIRMET (IFR, Turbulence, Icing).

7.12.2.2.2 **AIS messages:**

- SNOWTAM
- ASHTAM
- NOTAM

7.12.2.2.3 **ATFCM information:**

- CRAM
- AIM
- ANM

7.12.2.2.4 **Other information:**

- Specific message text (domestic procedures, Local service notes etc.)
- Charts MET charts and AIP charts
- Etc.

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APPENDIX A1 – SYSTEM PARAMETERS

Data Definition

In order that procedures for NOTAM Creation (Chapter 2), NOTAM Processing (Chapter 0) and NOTAM storage can be performed, the associated database must contain the necessary data.

Static Data

The data usually designated by the term 'Static Data' is the Data known to the aviation world and documented in publications like AIP, e.g. FIR(s), Aerodromes, Navaids, Areas, Maps, Rules, Subjects to which a NOTAM may be related and other aeronautical information like AIC etc.

and,

Data required to enable NOTAM creation and processing, e.g. reference lists, standard routes, distribution files, selection criteria, association criteria etc.

Dynamic Data

The data usually designated by the term 'Dynamic Data' is the data conveyed by the means of NOTAM, SNOWTAM, ASHTAM, Checklists received or coherence messages.

The list of static data which might be used for NOTAM processing is contained in Chapter 9.5 'database content' of ICAO Doc 8126 (Ref. [2]). Elements of this list will also be used for NOTAM Creation, as well as for ASHTAM and SNOWTAM.

System Parameters

NOTAM database management is governed by a certain number of system parameters.

System Parameters for Data Storage

NOTAM are stored in the database from their publication/reception until their indicated end of validity, replacement or cancellation (including. removal from the monthly checklist).

Expired, replaced or cancelled NOTAM shall no longer appear in Pre-flight Information Bulletins, nor in the checklist.

Expired, replaced or cancelled NOTAM shall remain available from the database for a period of at least 30 days after their deletion. Note that for NOTAM Processing Units this period shall be at least 60 days.

SNOWTAM and ASHTAM shall also be stored for a period of at least 30 days from their expired validity.

System Parameters for Data Archiving

When NOTAM and other Messages are no longer valid for operational database needs (e.g. Pre-flight Information Bulletin production) storage is required to comply with legal obligations.

Long-term storage is possible on various media. The duration of the storage can vary from one Administration to another, depending upon the type of data and upon national legal requirements.

It is recommended that a NOTAM Processing Unit will store NOTAM for a period of time (one to several years) to be defined, depending upon the source of information, i.e.:

- NOTAM produced by a client-NOF and retransmitted by the NPU;

- Original NOTAM received from non-client NOF;

- Processed NOTAM version from the NOTAM Processing Unit.

Processing of 'EST' NOTAM by the Publishing NOF

NOTAM that contain 'EST' in the Item C (end of validity) require an action by the Publishing NOF for their replacement or cancellation before the 'EST' time is reached.

The NOF System shall ensure that a reminder is provided before the 'estimated' end of validity, to produce a NOTAMR or a NOTAMC. Individual parameters can be installed, depending upon the type of information, and the operational possibilities of the Unit.

The following parameters are indicative, depending on the estimated validity of the NOTAM:

- up to 1 day   : 6 hours before EST time

- more than 1 day and up to 1 month   : 1 day before EST time

- more than 1 month and up to 3 months : 3 days before EST time

Processing of 'EST' NOTAM by a NOTAM Processing Unit

See Chapter 0.

APPENDIX A2 - GLOSSARY

ACTIVE NOTAM
A NOTAM is active between the dates and times stated in Items B) and C) subject to the time schedule in Item D).

AIRAC AIP AMENDMENT
Permanent changes to operationally significant information contained in the AIP which are published in accordance with AIRAC procedures.

AIRAC AIP SUPPLEMENT
Temporary changes to operationally significant information contained in the AIP which are published by means of special pages in accordance with AIRAC procedures.

AIRSPACE RESERVATION
Term used in the NSC to define a group of Navigation Warning activities.

AIRSPACE RESTRICTION
Any changes to the limits, structure and/or availability of airspace.

AIS MESSAGE
AFTN Message composed according to the rules in Annex 10, made up of a maximum of 1800 characters and containing a single NOTAM or an ASHTAM or a SNOWTAM or an unformatted service message inherent to AIS operative requests interchanged between NOF, originators, clients and/or NPU

AUTOMATIC PROCESSING
The processing and storing of NOTAM received from Publishing NOF without any human intervention.

CANCELLED NOTAM
A NOTAM that has been cancelled by another NOTAM before the Item C) date and time has been reached.

CFMU
Central Flow Management Unit (Europe).

CHECKLIST
A NOTAM published regularly in each NOTAM series containing a list, grouped by year, of valid NOTAM numbers promulgated in that series.

CONVERSION
Transposition of a NOTAM received in the old format into a correctly formatted ICAO NOTAM.

DATA CORRECTION
Changing data elements where these are obviously wrong.

DEFAULT VALUES
A predetermined and agreed value to be inserted in fields that need to be filled but for which a specific value could not be defined.

EAD
European AIS Database.

EDITING
Changing the Item E) wording and/or layout of a NOTAM to make it clearer or to more explicitly express ideas that are implicit in that text.

END OF VALIDITY (NOTAM Item C)
The ten figure date-time group at which the NOTAM ceases to be in force and valid.

EST
Suffix added to the ten figure date-time group in Item C) for NOTAM with an estimated date and time of end of validity.

EXPIRED NOTAM
A NOTAM whose date and time of end of validity stated in Item C) has been reached.

GEOGRAPHICAL REFERENCE
Eighth field of the NOTAM Item Q) which contains one set of co-ordinates and a radius. Associates the NOTAM with the geographical co-ordinates of a centre point and a radius (to a precision of 1 nautical mile) that defines the sphere of influence to which the NOTAM refers.

MULTI-PART NOTAM
A NOTAM exceeding the AFTN message length (normally 1800 characters) and therefore requiring more than one message.

NOF
A NOTAM Office.

NOTAM CODE
A code group containing a total of five (5) letters, always starting with 'Q', to indicate the coding of information regarding the establishment, condition or change of radio aids, aerodrome and lighting facilities, dangers to aircraft in flight, or search and rescue facilities.

NOTAM CONDITION
Defined by the 4th and 5th letters of the NOTAM Code, which decode to describe the status of the NOTAM Subject (2nd and 3rd letters of the NOTAM Code) being reported on.

NOTAM IN FORCE
A NOTAM is in force once it has reached the date stated in Item B) and has neither been cancelled nor replaced nor reached its end of validity stated in Item C).

NOTAM PROCESSING UNIT (NPU)
Any Unit that is responsible for the reception, processing and further distribution of AIS Messages to its Clients.

Note that this Unit may perform these functions for its own purposes only or may act on behalf of one or more Client.

The EAD (European AIS Database) is an example of a NOTAM Processing Unit.

NOTAM SELECTION CRITERIA (NSC)
The basis for the assignment of NOTAM Codes. The association criteria defined provide a subject related association of NOTAM with the qualifiers 'Traffic', 'Purpose' and 'Scope'.

NOTAM SUBJECT
Defined by the 2nd and 3rd letters of the NOTAM Code, which decode to identify the facility, service or hazard being reported upon.

NOTAM SUB-NUMBER
In the case of Multi-part NOTAM, a 3-character group placed immediately behind the year of the number/year combination and composed of one letter and a number consisting of 2 digits.

NPU
See 'NOTAM PROCESSING UNIT'.

NPU CLIENT
Any organisation which has subscribed to the services provided by a NOTAM Processing Unit.

NSC
See 'NOTAM SELECTION CRITERIA'.

OPERATIONAL SIGNIFICANCE
Information essential for the safe and efficient conduct of a flight.

ORIGINAL NOTAM
A NOTAM as received by the NOTAM Processing Unit.

PROCESSING
The examination of NOTAM received from Publishing NOF in order to verify suitability for acceptance into an automated AIS system; undertaking conversion, translation, syntax correction, data correction, editing and/or summarising as required.

PUBLISHING NOF
The NOF (NOTAM Office) or non-governmental agency responsible for the creation of the original NOTAM.

QUALIFIER LINE (NOTAM Item Q).
This Item is divided into eight fields, each separated by a stroke, and contains the necessary qualifiers to facilitate data retrieval.

RADIUS
A three digit figure in Nautical Miles to be used in Item Q) that, together with the co-ordinates, defines a circle which encompasses the whole area of influence of the NOTAM.

REPLACED NOTAM
A NOTAM that has been replaced by another NOTAM before the Item C) date and time has been reached.

SUMMARISING
Reducing text in order to make it more readable in a Pre-flight Information Bulletin (PIB).

SUPRA-NATIONAL INFORMATION
Information concerning an activity or condition which affects the airspace/FIR of two or more States.

SYNTAX CORRECTION
Changing the published format structure of the NOTAM where these are obviously wrong.

START OF ACTIVITY

The ten figure date-time group indicating the date and the time at which the NOTAM comes in force.

START OF VALIDITY

The date and time at which the NOTAM message is published or issued.

TRANSLATION
Rendering the text of a NOTAM originated in French or Spanish, into the English language, while maintaining the original sense of the text.

TRIGGER NOTAM
A NOTAM alerting recipients and PIB users of the existence and subject content of AIP Amendments and Supplements.

VALID NOTAM
A NOTAM which has been published and has not yet reached the end of its validity and has neither been cancelled nor replaced.

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CHAPTER 4

USE OF THE INTERNET FOR INFORMATION TRANSFER

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