NAMIBIAN CIVIL AVIATION AUTHORITY

Advisory Pamphlet (AP)

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GUIDANCE ON ORGANISATION OF AN AUTOMATED AERONAUTICAL INFORMATION SYSTEM

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GUIDANCE ON ORGANISATION OF AN AUTOMATED AERONAUTICAL INFORMATION SYSTEM

1. PURPOSE

This Advisory Pamphlet (AP) provide guidance and information on the development and introduction of automated processes within the AIS infrastructures. The guidance is intended to assist AIS providers when implementing an automated AIS system to meet the requirements of the regulations.

2. BACKGROUND

(a) The NAM-CAR Part 175 requires an AIS provider to ensure that automation is introduced with the objective of improving the timeliness, quality, efficiency and cost effectiveness of aeronautical information services.

(b) The NAM-CARs Part 175 also requires an AIS provider to develop the required databases and establish data exchange services and ensure that aeronautical data and aeronautical information are provided with consistence and in the prescribed format.

(c) The NAM-CARs Parts 175 further requires that an AIS provider must, when introducing automation, ensure that data quality requirements, aeronautical information models used, and aeronautical data exchange models are in accordance with the prescribed standards.

(d) Below are the extracts from the Civil Aviation Regulations to which this Advisory Pamphlet apply.

3. EXTRACTS FROM NAM-CARS, PART 175 – AERONAUTICAL INFORMATION SERVICES

175.05.5 Use of automation

An AIS provider must apply automation in order to ensure the quality, efficiency and cost-effectiveness of aeronautical information services in accordance with the standards set out in Document NAM-CATS-AIS.

GUIDANCE ON ORGANISATION OF AN AUTOMATED AERONAUTICAL INFORMATION SYSTEM

1. GENERAL

1.1 This guidance focuses on all levels of automation and outlines the advantages and flexibility to be derived from an automated AIS system. The degree or level of automation to be implemented within the AIS will depend on desired output of the service concerned (Aeronautical Information Publication (AIP), NOTAM, Aeronautical Information Circulars (AIC), etc.).

1.2 Where automated pre-flight information system is used to make aeronautical information/data available to flight operations personnel, including flight crew members, for self-briefing, flight planning and flight information service purposes, the information/data must comply with the provisions of Advisory Pamphlet ANSSO-AIS-AP175/4 regarding the type of aeronautical information/data to be made available for preflight planning purposes and the availability of pre-flight information bulletins (PIB).

1.3 The following guidance does not propose the purchase of any particular brand of computer or software for developing an automated AIS system. The selection of such equipment and associated applications is therefore left to the discretion of the AIS provider in consultation with hardware and/or software manufacturers and bearing in mind the requirements of each AIS. The capacity of the equipment selected may be sufficient to cater for the immediate needs and future growth of the provider service. The automation requirements of an AIS could be integrated into an existing central mainframe computer already providing such services as meteorology (MET) and air traffic services (ATS).

2. BASIC PRINCIPLES

2.1 The principal objective of developing an automated AIS system is to improve, through automation, the overall speed, efficiency, accuracy and cost-effectiveness of the AIS. Essentially, an automated AIS system should be capable of providing a more flexible pre-flight information service by tailoring its automation processes to cater to a wider spectrum of users. As such, the tailoring/selection functions required for this service should be performed by the automated AIS system with a minimum of manual intervention so that duplication of work can be reduced if not eliminated entirely. For

reasons of cost-effectiveness, such a service must strike a balance between the degree of sophistication of the system required and the amount of information to be accepted in the various categories of bulletins. It is necessary therefore to:

a) select a simple, flexible and efficient system for storage and retrieval of information; and
b) develop methods of providing a greater selectivity of information in accordance with user requirements.

2.2 An AIS automated system should be designed with the intent of avoiding incompatibilities, divergences and unnecessary duplication of effort and should ensure standardization of procedures, products and services to end-users. It is therefore desirable that the AIS system be automated taking into account compatibility with AIS systems of other States.

2.3 In order to ensure progressive implementation of automated AIS systems and taking account of actual technical possibilities (e.g. the capacity and the capabilities of the systems currently automated, the communication facilities that are or will be available in the near future, and the existence of AIS that are manual or semi-automated) the following basic principles should be considered:

a) The automated AIS system centre should be able to closely cooperate with other AIS centres in adopting the various elements that will make up an integrated automated AIS system, taking into account their current and planned degree of development;
b) AIS should initially automate NOTAM service within their own AIS, taking into account user requirements;
c) The automated AIS systems should cooperate with other non-automated AIS systems to carry out agreed functions to improve the efficiency and the quality of processing of aeronautical information and distribution both within an agreed area of the system and externally;
d) Optimum use should be made of available communication and public networks as well as new communication technology for the distribution, exchange and retrieval of aeronautical information, particularly NOTAM;
e) The selection of the various means for the retrieval of data at a national level should be largely dependent on the availability and cost of the various services, communication links available and user requirements;

f) The NOTAM Format, containing the necessary qualifiers to facilitate the sorting and retrieval of NOTAM information in accordance with user requirements, should be used exclusively;

g) A system interrogation capability which takes account of the different categories of system users should be in place;

h) Common, user-friendly query procedures for the interrogation of AIS or NOTAM databases should be used. These procedures should be in accordance with the different levels of user requirements;

i) A quality system and procedures must be established which will ensure that the available aeronautical information is of appropriate quality (accuracy, resolution, integrity) and timeliness;

j) Where it is decided that the AIS system will not be automated, arrangements should be made with other States or other non-governmental organizations for the provision of automated services on the basis of bilateral or multilateral agreements in the interest of improved efficiency. The arrangements must take into account the nontransferable State responsibility for the aeronautical information published as well as other technical and administrative aspects associated with such agreements.

2.4 The development of an automated AIS system must take into account the provisions in NAMCAR Part 175 for the use of the World Geodetic System — 1984 (WGS-84), the adopted common geodetic reference system, when aeronautical geographical coordinates are provided.

3. USERS' OPERATIONAL REQUIREMENTS IN AN AUTOMATED AIS SYSTEM

3.1 The overall system should provide a service that is capable of satisfying users' operational requirements, which include:

a) availability of the latest PIB of the specific type needed (e.g. route or area);

b) provision of information on specific items for given areas required by flight planning services, ATS, AIS or other users;

c) availability of NOTAM entered into the system after a specific date-time group, to facilitate briefing; and

d) provision of immediate notification capability for items of urgent operational significance.

3.2 Automated pre-flight information systems for the supply of aeronautical information/data for self-briefing, flight planning and flight information service should:

a) provide for continuous and timely updating of the system database and monitoring of the validity and quality of the aeronautical information stored;
b) permit access to the system by flight operations personnel, including flight crew members, aeronautical personnel concerned and other aeronautical users, through a suitable means of telecommunications;
c) ensure provision, in paper copy form, of the aeronautical information/data accessed, as required;
d) use access and interrogation procedures based on abbreviated plain language and ICAO location indicators, as appropriate, or based on a menu driven interface or other appropriate mechanism as agreed between the civil aviation authority and operator(s) concerned; and
e) provide for rapid responses to user requests for information.

3.3 On the basis of the foregoing, an automated AIS system should be able to provide end-users, such as pilots, ATS and military, with PIB geared to meet their specific requirements.

4. TYPES OF INFORMATION TO BE PROVIDED

4.1 The system should provide NOTAM covering the area of service, the area of responsibility and the area of coverage. The system should additionally provide the following PIB and lists:

a) route type bulletin containing NOTAM relevant to the aerodrome/heliport of departure, the planned route based on FIR crossed, the aerodrome/heliport of destination, and alternate aerodromes/heliports;
b) area type bulletin containing NOTAM relevant to FIR or State;
c) aerodrome type bulletin containing NOTAM concerning any aerodrome/heliport or group of aerodromes/heliports;
d) immediate notification items;
e) checklists of NOTAM by State, FIR and aerodrome/heliport; and
f) list of NOTAM for a specific period or NOTAM entered into the system after a specific date-time group.

4.2 The updating of PIB should be covered by the items listed in 4.1 d), e) and f) above, or by request for a new PIB. The system features described in Section 7 of this AP should permit PIB to be tailored to the needs of users and should provide flexible options for information content ranging from full system data coverage to data of urgent operational significance. PIB should be provided in a standard format.

4.3 The provision of more flexible and referred data retrievals can be satisfied by the application of a geographical reference system which may be required for the expansion of the overall system in order to meet future requirements. These requirements may derive from the introduction of RNAV operations, the expansion of automation within the ATS and the users' systems.

4.4 Sufficient flexibility and tailoring of information for the first set-up of automation in AIS is achieved by the use of the geographical reference qualifier. This qualifier consists of latitude and longitude to one minute resolution and referenced to the World Geodetic System — 1984 (WGS-84) geodetic datum and a three-digit distance figure giving radius of influence.

5. DATABASE CONTENTS

5.1 The types of data which can be made available in an automated AIS system centre database are divided into three categories as follows:

a) *Static data*: Data common to civil aviation and documented in AIP or other related documents. Such data include FIR, aerodromes, navaids, areas, maps, rules, and NOTAM related to these subjects.

b) *Basic data*: Data required by an AIS system to enable NOTAM processing, i.e. reference lists, standard routes, distribution files, the NOTAM Selection Criteria, association criteria as well some static data.

c) *Dynamic data*: National and foreign (worldwide NOTAM, NOTAMC, NOTAMS, NOTAMV, SNOWTAM, ASHTAM, all checklists received, all system messages exchanged, and other aeronautical information such as AIC).

5.2 The common set of static data and basic data is given in 5.4. Data marked with an (***) are considered to be a "minimum set of data" required for the verifications, cross-checks and other data requirements related to NOTAM processing.

5.3 It should be noted that the list of data should not be limited to data required for NOTAM processing and could be amended in light of future developments. An example of such development may be flight plan processing using the same equipment as for AIS within the framework of multi-access terminals development where different processing procedures could be based on common static data.

5.4 Common AIS static and basic database contents for NOTAM processing

a) NOTAM originator

(i) ICAO abbreviation of NOTAM originator (***)
(ii) State (ICAO abbreviation and name)
(iii) Reference table: State/originator
(iv) Responsible source (***)
(v) Series and numbers used (***)

b) FIR data

(i) ICAO location indicator (***), name in plain language (***)
(ii) Geographical description (polygon of LAT/LONG positions)
(iii) Artificial description (based on centralized LAT/LONG position and radius for a circle comprising the FIR)
(iv) Reference table: FIR/NOTAM originator

c) Aerodrome data

(i) ICAO location indicator (***)
(ii) Four letter indicator, chosen if no ICAO locator exists (***)
(iii) Aerodrome name (plain language) (***)
(iv) IATA three-letter code
(v) Correspondence table (Name, ICAO, IATA)
(vi) Correspondence table (ICAO locator — FIR)
(vii) Position (LAT/LONG, radius of operational influence) (***)
(viii) Runways (designation and ILS category)
(ix) SIDs and STARs (designator and description)
(x) “International aerodrome/heliport” indicator

d) Navaid data

(i) Type of navaid (***)
(ii) Identification (***), name in plain language (***)
(iii) Frequency(ies) (***)
(iv) Position (LAT/LONG, radius of operational influence) (***)
(v) Correspondence table (identification — FIR)
(vi) Collocation with other navaids

(vii) —ILS (frequency, category and runway)

e) Route data

(i) Airways (designator)

(ii) ATS route segments (2 waypoints with LAT/LONG position — airway)

(iii) ATS route segment association with FIR

f) Areas

(i) Identifier of airspace restrictions such as danger or restricted area

(ii) Area name (plain language)

(iii) Activity times, height limits

(iv) Geographical description (polygon of LAT/LONG positions)

(v) Artificial description (based on centralized LAT/LONG position and radius for a circle comprising the area)

(vi) Association of area to FIR(s)

g) Selection criteria

(i) Qualifiers: TRAFFIC, PURPOSE, SCOPE, and subject by NOTAM Code, as well as NOTAM Code-related English text.

5.5 NOTAM Selection Criteria

5.5.1 The NOTAM Code contained in the PANS-ABC (Doc 8400) is the most comprehensive description of information requiring NOTAM promulgation. It is therefore used for the following:

a) the storage and retrieval of information;

b) to determine whether a particular item is of operational significance;

c) the relevance of particular items for various types of flight operations; and

d) the selection of those items of operational significance that require immediate notification.

5.5.2 The NOTAM Code constitutes the basis for the determination of the qualifiers TRAFFIC, PURPOSE and SCOPE. The relationship between these qualifiers and the NOTAM Code is given in the NOTAM Selection Criteria tables in Chapter 6, Appendix B. These tables constitute a rationalized version of the NOTAM Code. They also provide the English language text to be used in Item E) of the NOTAM Format.

6. HARMONIZATION OF AIS AND MET INFORMATION

6.1 AIS and MET play an important role in pre-flight planning of operations. To satisfy the needs of the user, the AIS and MET delivery systems should be collocated. This could be achieved through collocation of two separate terminals, i.e. one for AIS and one for MET. However, there is an increased demand for the provision of combined AIS and MET information in a harmonized manner.

6.2 Therefore, in an automated environment users should be able to access both AIS and MET information on request, from a common interface, based on the flight plan (including time, route or area and height).

6.3 Annex 15 specifies that automated pre-flight information systems providing for a harmonized, common point of access by operations personnel, to aeronautical information and meteorological information, should be established by an agreement between the civil aviation authority concerned and the relevant meteorological authority.

6.4 To achieve this, it is important to produce concise and precise pre-flight information through a common user interface to both AIS and MET databases, tailored to meet the needs of the user (operators, flight crew members, individual pilots and other aeronautical personnel concerned).

6.5 The civil aviation authority concerned must remain responsible for the quality and timeliness of aeronautical information/data provided by means of such a system.

6.6 It should be noted that the meteorological authority concerned remains responsible for the quality of meteorological information provided by means of a harmonized automated pre-flight information system.

6.7 The following major aspects must be considered:

a) the two information sources; and
b) retrieval and processing of information from those sources.

6.8 The data from the information sources must be easily accessible in databases and be available in digital and standardized form to allow automatic processing, storage and retrieval.

6.9 An integration layer may have to be developed to access the AIS and MET information from a common interface for harmonized access to both AIS and MET information. The benefits of the integration layer to the user are:

a) improved data consistency;
b) transparent data access;
c) extended functionality; and
d) flexibility.

6.10 Technically, the benefits of harmonization would be:

a) faster and simpler information retrieval;
b) improvement of quality control; and
c) savings, by eliminating the duplication of effort in handling of information.

6.11 Harmonized access to AIS and MET pre-flight services should be restricted to aeronautical users only, to avoid unauthorized use of this information.

6.12 Harmonization of AIS and MET data for preflight information purposes is being developed by several States and should be encouraged, as it would represent a significant improvement in service level as requested by the users

7. CONCEPT FOR AN INTEGRATED AUTOMATED AIS SYSTEM

7.1 System Configuration

7.1.1 An integrated automated AIS system should be based on the current AIS facilities of participating States with the following structure:

a) national automated AIS systems of States that provide a national service;
b) multinational automated AIS systems of States providing, on the basis of bilateral and multilateral agreements, service to other State(s) in addition to national service; and
c) AIS of States that are not or not fully automated (i.e. manual or semi-automated).

7.1.2 The system should provide for automatic exchange of NOTAM between AIS centres providing national service and between these centres and AIS centres providing service based on bilateral and/or multilateral agreements.

7.1.3 *National automated AIS system*

7.1.3.1 The primary role of a national AIS system is to provide aeronautical information to users within the State, either in accordance with predetermined arrangements or by computer interrogation. The system collects appropriate aeronautical information from national sources, processes the information, produces it in the form of a NOTAM, stores it in the national AIS database and makes it available:

a) within the State;
b) within the region, including an integrated system in accordance with bilateral or multilateral agreements; and
c) worldwide, in accordance with predetermined arrangements.

7.1.3.2 In addition, the required aeronautical information from other States should be received in the NOTAM Format for direct input into the national system database or for further processing, if required, so that specific requirements for international/foreign aeronautical information for preflight briefing can also be carried out by the system.

7.1.4 *Multinational automated AIS system*

7.1.4.1 In the multinational AIS system, one or more national automated AIS systems will, in addition to national service, provide service to users in other participating States (with automated or non-automated AIS systems) in accordance with pre-arranged agreements.

7.1.5 *Non-automated AIS*

7.1.5.1 Where there is no automated AIS system, the AIS system may, through a bilateral agreement be linked with a national automated AIS system, via an intelligent or non-intelligent remote terminal.

7.2 Area to be covered

7.2.1 The system should have the capacity of holding and processing aeronautical information covering the entire world to fulfil the operational requirements for pre-flight information service for flights from point of origin to final destination.

7.3 System service

7.3.1 The overall system, when fully developed, should provide a service that is capable of meeting both the users' operational requirements and the types of information detailed in Sections 3 and 4, of this AP respectively. The capabilities of the system could also be utilized to obtain information for the preparation of AIP material, for aeronautical charting purposes and for the production of route manuals by chart producing agencies. The basic functions of the system, as described below, relate to the handling of information promulgated by States. It should, however, be borne in mind that the availability of an integrated automated AIS system would affect the working methods used in participating States for the exchange and distribution of aeronautical information.

7.4 System functions

7.4.1 Within an automated AIS system there are a number of functions which should be performed. They are:

a) Production function

1) National NOTAM production
2) National NOTAM reception
3) National NOTAM correction/repetition (in case of corruption in transit)
4) National NOTAM translation (language and code)
5) NOTAM qualifier insertion
6) Addition of geographical reference
7) Filtering for particular correspondents
8) Transfer to the distribution function
9) National NOTAM database input
10) Foreign NOTAM reception
11) Foreign NOTAM first level verification (syntax)
12) Foreign NOTAM second level verification (validation of content)
13) Foreign NOTAM correction/repetition
14) Foreign NOTAM translation (language and code)
15) Foreign NOTAM qualifier insertion, when needed
16) Addition of geographical reference
17) Foreign NOTAM database input
18) Filtering for particular correspondents
19) Transfer to the distribution function

b) Distribution function

1) National administrative users
2) International administrative users
3) National operational users
4) International operational users

c) Retrieval function

1) National administrative users
2) International administrative users
3) National operational users
4) International operational users

7.4.2 This is a minimum requirement for a national automated AIS system, which States can expand as needed.

7.4.3 For a multinational automated AIS system, additional functions will depend on the agreement with the associated AIS system(s). This could include:

a) the functions of reception, verification and distribution of NOTAM initiated by the associated
b) AIS and reception, verification and distribution of foreign NOTAM to associated AIS;
c) the international NOTAM office (NOF) of the multinational automated AIS system to act as the
d) NOF of the associated AIS;
e) storage of all aeronautical information of the associated State/AIS in the database of the multinational automated AIS system;
f) provision of pre-flight data/briefing (via computer terminals) at aerodromes in the associated State;
g) production of the AIP for the associated AIS.

Reception

7.4.4 The aeronautical fixed service (AFS) and other adequate and available communication networks should be used for distribution of the information concerned. The reception and initial distribution of NOTAM messages should be performed by an AFS message-switching centre. As necessary, certain checks should be carried out prior to subsequent processing. These initial checks should be seen in the context of the verification function.

Verification

7.4.5 A certain number of checks need to be carried out in different forms in the majority of systems, whether they are automated or not. To maximize the number of NOTAM that can be accepted directly by the system, the verification function at first and second levels should be performed in accordance with a common format. The first and second levels of the verification function are differentiated by the complexity of the checking processing functions which are:

a) *First level*: syntax verification; and
b) *Second level*: verification of content.

Correction/repetition

7.4.6 One of the aims of an automated AIS system is to minimize the number of requests for repetition of NOTAM messages. In this connection, the checking operations mentioned above can, depending upon their scope, allow certain corrections to be made. It is necessary, however, to define precisely, at the system level itself, the nature of the corrections that could be made. In the event of an error that cannot be corrected, a request for repetition of the incorrect NOTAM should be made.

Translation

7.4.7 Translation may be needed for the creation of NOTAM, and should be taken into account as a function of local needs (e.g. use of national languages).

Qualifier insertion

7.4.8 The common set of qualifiers, as outlined in Appendix A to this AP, must be used to ensure compatibility in any data exchange. It permits the production of common output products (e.g. PIB) that are adequately filtered and reduced to an acceptable amount of data of operational significance. It also permits the development of common, user-friendly, AIS query procedures. The qualifiers identify, for example, the area of concern, the type of operation the NOTAM information relates to and, additionally, where and how the information must be stored in an AIS database.

7.4.9 Qualifier insertion is an important function seen from the viewpoint of the distribution of NOTAM. The insertion of qualifiers can be carried out as part of the production function. Recourse to basic data is necessary, and a list of the types of static and basic data that might have to be available are found in Section 5 of this AP.

Production

7.4.10 NOTAM, in the NOTAM Format, should constitute the basic data exchange source in the system. NOTAM should be prepared only once, at the entry into the system.

7.4.11 Any AIS in the process of being automated should generally make provisions for recourse to computer assistance for the drafting of NOTAM to be issued by the NOF concerned. NOTAM so produced should be capable of being used directly by the various national AIS systems concerned. It is essential that NOTAM issued by an automated centre be directly acceptable both by the other centres and by other users of the system and provide for automatic exchange of NOTAM between automated AIS systems (national and multinational).

Database input

7.4.12 The functions for database input should be related to the NOTAM Format. Essentially, the databases should be capable of being interrogated by users on a national and international basis.

7.5 System query procedures

7.5.1 The system should provide a common set of query procedures. Since the objective is to provide common procedures for AIS users, wherever they proceed for an AIS

briefing and whatever AIS system is interrogated, it is appropriate to use the term “common AIS query procedures”. These query procedures should guide the user through transparent and common formulation of an interrogation, which would then be translated by each system into an appropriate query in the query language associated with the database management system in use

7.5.2 For any automated pre-flight information service to be effective, it is essential that the query procedures established be user-friendly, i.e. they must allow an operator, trained or untrained, to obtain the desired information without the assistance of AIS personnel. This is the self-briefing concept for which menu-type query procedures are the most appropriate. Menu-type query procedures also permit easy access to output products other than PIB. It should also be possible for qualified staff to obtain output products quickly.

7.5.3 The query procedures should make the best use of the database management system applied, in order to give rapid responses to simple and short requests.

7.5.4 The query procedures should be flexible and cater for progressive developments, such as changes in the definitions of user outputs or to the common set of qualifiers. The terminal used for AIS briefings should also have a future multi-access capability, giving the user the possibility to interrogate MET databases as well as to input flight plans. These procedures should take into account the concept that there should be one, common method for multi-access processing.

7.5.5 The query procedures should preferably be in English and should be identical at each AIS centre. A version using the local language can also be made available in any AIS system, as appropriate.

7.6 Database access

7.6.1 Basically, three modes of interrogation should exist in an integrated system, i.e. via:

a) intelligent terminals (computer terminals, PCs, etc.) on which the above-mentioned common AIS query procedures apply;
b) teletype terminals (e.g. AFS, telex); and
c) video text terminals.

7.6.2 The procedures should allow for at least the following:

a) access to the automated AIS system centre, which should normally be the database the terminal is
b) connected to;
c) access to other AIS databases within the system via available communication networks;
d) access to meteorological databases (subject to agreement between the State authorities concerned); and
e) ultimately, input of flight plans.

7.6.3 ***Access to an automated AIS system via intelligent terminals***

7.6.3.1 There should be two modes of access to the database:

a) via the common query procedures employed in the self-briefing mode, where user-friendly, step-by step guidance is given to the user (e.g. menu-type query). Examples of these procedures are shown in Appendix B to this chapter; and

b) to specific data directly by AIS briefing officers. Possible screen formats for direct formulation of bulletin products and for the retrieval of individual NOTAM are also shown in Appendix B to this AP.

7.6.3.2 For each type of requested output, the query procedures should lead the user to the formulation of the shortest possible query. The application of the NOTAM qualifiers TRAFFIC, PURPOSE and SCOPE, appropriate to each case, should be implicit in the query.

7.6.4 ***Access to other AIS databases within the system (teletype terminals)***

7.6.4.1 For various reasons, such as repeat messages or subscribed service data not stored in the national system, there may be a requirement to obtain data from databases situated in other States. In this case, the interrogation should be made via available communication networks, e.g. AFS, PSTN (telephone) or PSDN (Transpac, DSC, etc.). It is essential for the operation of the integrated system that, for this type of interrogation, agreed message formats be used. Such formats should be adequately supported by interrogation procedures available to AIS briefing officers but might exceptionally, however, be entered directly through a suitable network terminal, such

as a teletype in the case of AFS. Examples of these messages are shown in Appendix C to this AP.

7.6.5 ***Access to an automated AIS system via videotext terminals***

7.6.5.1 Pre-flight information may be provided via video text terminals (Minitel, BTX, etc) which in the self-briefing mode, also require user-friendly procedures. Screen standards being different to those of computer terminals, it is not possible to directly apply the common query procedures developed for intelligent terminals. For the benefit of the users, however, commonality should be achieved for this mode of interrogation, and query procedures should be, as much as possible, similar to the common query procedures.

7.6.6 ***Use of multi-access terminals***

7.6.6.1 AIS terminals should ultimately be able to provide AIS and operational meteorological information for pre-flight briefings. This does not of course, mean that AIS and MET data need to be in the same database. As a further enhancement, such terminals could also be programmed to contain a form for filing flight plans which would be completed on the visual display unit by the user and filed with the appropriate ATS directly from the terminal.

7.7 System reliability and redundancy

7.7.1 The system configuration should assure adequate reliability and redundancy.

7.8 Fallback procedures

7.8.1 When service based on bilateral and/or multilateral coordination and cooperation is provided, fallback procedures should be established.

7.9 Response time

7.9.1 With the features provided by the system, the use of modern computer techniques and means of communication, short term response times should be assured.

7.10 Communications

7.10.1 The AFS should satisfy the communication requirement at an international level. Optimum use should be made of available communication networks for the distribution, exchange and retrieval of aeronautical information, particularly NOTAM.

7.11 Access to consultation with AIS

7.11.1 Self-briefing facilities of automated pre-flight information systems must provide for easy access by flight operations personnel, including flight crew members and other aeronautical personnel concerned, to consultation, as necessary, with the AIS by telephone or other suitable communications means.

7.12 Human-machine interface

7.12.1 The human-machine interface of self-briefing facilities of automated pre-flight information system must ensure easy access in a guided manner to all relevant information/data.

8. PLANNING FOR AND IMPLEMENTATION OF AN INTEGRATED AUTOMATED AIS SYSTEM

8.1 The planning and implementation of an integrated automated AIS system should be guided and adjusted by considerations related to efficiency, cost-effectiveness and experience.

8.2 Relevant bilateral or multilateral agreements should aim at minimizing costs by leading to work and equipment savings beneficial to all participants.

8.3 The Regional air navigation planning and implementation group (APIRG) should:

a) Coordinate the general development of the system and the activities required;
b) develop an appropriate form of system management
c) monitor the overall situation for the purpose of detecting in advance divergence in advance divergences in developments that could lead to later incompatibilities.

8.4 The planning and implementation of the system should also be closely monitored to permit speedy reaction to problems encountered and to shortcomings identified.

9. AFS ADDRESSING

9.1 Identification of the correspondents of a multinational automated AIS system

9.1.1 The correspondents of a multinational automated AIS system can be identified as:

a) other multinational automated AIS systems;
b) the NOF serving the State(s) and territories in its area of responsibility;
c) the national systems (including NOF of non-automated AIS) for which it provides the service on the basis of bilateral or multilateral agreements;
d) all concerned services in its own State;
e) users in its own State;
f) users in other associated States (subject to bilateral/multilateral agreements).

9.2 Rules for AFS addressing

9.2.1 Predetermined AFS distribution lists should be available at each multinational automated AIS system containing the addresses or collective addresses of all States with which it intends to exchange NOTAM. It should also have the distribution lists of associated States containing the required addresses to which they wish to send NOTAM (i.e. States not on a pre-determined distribution list).

9.2.2 Based on the origination of the NOTAM, which is derived from the location indicator of the FIR qualifier field in Item Q) of the arriving NOTAM or identified in the AFS message preamble, the collective addresses required for distribution are entered (manually or automatically) in the preamble of the AFS message to be issued.

9.2.3 In some cases, the following procedures may be applicable:

a) Distribution of NOTAM produced by a multinational automated AIS system

A multinational automated AIS system should use the distribution list prepared for promulgation of its own NOTAM. The list should normally contain the addresses (or collective addresses) of:

(i) the relevant State(s) (NOF) in its area of responsibility;
(ii) the relevant State(s) (NOF) and users in the associated States;

(iii) other multinational automated AIS systems which will each use their own list of addresses for further distribution.

b) Distribution of NOTAM received from other national automated AIS system centres

The multinational automated AIS system identifies the originator abbreviation in the preamble of the arriving NOTAM or by the FIR qualifier in Item Q) and selects and applies the relevant distribution list accordingly. The list should contain the addresses (or collective addresses) of:

(i) the States (NOF) in its area of responsibility;

(ii) the AIS systems and users in the associated States;

(iii) other multinational automated AIS system centres which will each use their own list of addresses for further distribution.

APPENDIX A USE OF AUTOMATION IN THE COMPILATION, PROCESSING AND DISTRIBUTION OF NOTAM

1. GENERAL

The NOTAM Format has been developed to facilitate its use in a manual or automated environment. As such, it ensures compatibility between all AIS and NOTAM offices exchanging information on a worldwide basis. Bearing in mind that many States have already automated their AIS and others are in the process of doing so, the importance of a compatible and comprehensive automated global system cannot be over-emphasized.

2. BASIC NOTAM ELEMENTS AND CHARACTERISTICS

The NOTAM is one of the basic elements that allows an integrated automated AIS system to be developed progressively while at the same time assuring that overall compatibility can be achieved with the manual AIS environment. Its format allows direct utilization for data processing as well as for presentation to users. It contains, in particular, the necessary qualifiers to facilitate data retrieval by common query procedures and for sorting of information in accordance with user requirements. The development of the NOTAM has resulted from the requirements for a number of characteristics to be met by the NOTAM message in order to permit the introduction of automation in AIS. These characteristics are related to retrieval, presentation to users, format and storage.

3. RETRIEVAL AND PRESENTATION TO USERS

The retrieval of NOTAM information must be geared to the requirements of the users. To achieve this, a common set of qualifiers has been developed for use in the NOTAM Format (Item Q)). Some of these qualifiers are already contained in the NOTAM while others need to be added as appropriate. One special feature of the NOTAM is its utility as a source for pre-flight information bulletins (PIB). Generally, the data contained in a NOTAM are easily transferable to the PIB format.

4. FORMAT

4.1 There is no need to store NOTAM in several formats in order to satisfy the different requirements of users. The data can be stored in such a way that “editing” programmes will produce output in various forms as requested by the user.

4.2 NOTAM can appear in various forms, for example, as an AFS message, on an input terminal or in a database. Omitting the communication text, a NOTAM has the following AFS format:

(A1282/03 NOTAMN
Q) LFFF/QILAS/I/NBO/A/000/050/
Q) 4840N00220E010
A) LFPO B) 0304041000 C) 0304111200
D) DAILY 1000 TO 1200
E) RWY 25R LLZ U/S REF. AIP LFPO AD 2.19)

5. STORAGE

5.1 Storage of NOTAM must take place in a database.

However, the NOTAM Format facilitates manual sorting and storage. One important aspect of the NOTAM Format is that each data item of the message can be stored individually in a different column of a database table. This method considerably simplifies further automatic data processing as it provides for:

a) automatic database entry after automatic extraction of items from the original NOTAM;
b) access to individual data items for the purpose of NOTAM retrieval;
c) access to individual data items for different output formats; and
d) easy identification of data items for automatic transmission on the AFS.

5.2 Examples of the storage of NOTAM data in a structured database are shown in Figures 1 to 5. Also shown are different output formats that can be produced from the database contents. As a result of the ability to structure the NOTAM contents, storage of several formats is not necessary. The merits of the NOTAM can best be appreciated in conjunction with the various steps in NOTAM production and processing inside and outside of an integrated automated AIS system.

6 COMMON SET OF QUALIFIERS

6.1 The qualifiers listed below represent the “common set of qualifiers”. Because these qualifiers have been derived from the NOTAM information itself, their use facilitates sorting and retrieval of NOTAM. States’ AIS may provide additional criteria for more refined data retrieval by its own users.

Name of Qualifier	Source (derived from NOTAM)
Time	Date of entry into database
Series/number/year	NOTAM number (e.g. A1282/03)
Type	NOTAM (N, C or R)
State	Item A) (e.g. LF--)
FIR	Item A) (e.g. LFFF)
AD	Item A) (e.g. LFPO)
VALFROM	Item B) (e.g. 0304041000)
VALTO	Item C) (e.g. 0304111200)
Schedule	Item D) (where applicable)
Lower	Item F)
Upper	Item G)
NOTAM Code	Item E) (significations/uniform abbreviated phraseology of the ICAO NOTAM Code complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language)
TRAFFIC	NOTAM Code (I, V, IV)
PURPOSE	NOTAM Code (N, B, O, M)
SCOPE	NOTAM Code (A, E, W)
Coordinates, radius	Lat, long, radius

6.2 As already indicated, a certain number of qualifiers are contained in NOTAM and their extraction is relatively easy. But, adherence to rules and sequencing to be applied at the production of NOTAM are essential for the automatic extraction process. These rules are:

a) Items B) and C) must always show a date-time group (exception a PERM may appear in Item C));
b) Item D) is always a time period when applicable;
c) Item E) must contain a single subject.

6.3 The qualifiers not directly derived from the NOTAM (TRAFFIC, PURPOSE, SCOPE) must be added in order that the message contain all necessary elements for subsequent data processing.

7 DISTRIBUTION

7.1 Essentially, the distribution of NOTAM originating from within an automated AIS system is identical to that for NOTAM processed manually. The guidance provided in Chapter 6 is therefore applicable to all NOTAM. To the extent possible, NOTAM should be transmitted via the AFS, although other international telecommunication networks can be used where required. With direct AFS links and the use of predetermined distribution lists, the exchange between NOF and other interested users of NOTAM prepared by automated means should require little human intervention. From this, it can be seen that the main objective of such automation is to improve the distribution process thereby enhancing overall efficiency in terms of speed, accuracy and cost-effectiveness.

7.2 The function of a multinational automated AIS system responsible for NOTAM distribution is based on the following principles:

a) All associated national AIS systems are to initiate their NOTAM and “trigger” NOTAM relative to AIP Amendments and AIP Supplements.
b) These NOTAM are to be sent only to the associated multinational automated AIS system which proceeds to automatic verification procedures and subsequent distribution in accordance with the relevant agreements.
c) Distribution should be automatic and not cause any delay.
d) NOTAM coming from non-associated AIS systems should be received exclusively by the multinational automated AIS system.
e) For any AIP Supplements containing information that should be included in PIB, the multinational automated AIS system concerned must produce and distribute a “trigger” NOTAM.
f) NOTAM received that are not of particular interest to its own State should nevertheless be stored in its database. Thus, each multinational automated AIS system would have worldwide NOTAM and “trigger” NOTAM relative to AIP Amendments and AIP Supplements available in its database for preparation of PIB.
g) Any NOTAM processed is to be sent as a new message, the multinational automated AIS system concerned being the originator.

h) All NOTAM are to be sent via AFS taking into account the AFS distribution procedures currently in use.

i) Each associated national system is to be responsible for the provision of NOTAM to users in its own territory.

1) NOTAM

A1282/03 NOTAMN

Q) LFFF/QILAS/I/NBO/A/000/050/4840N00220E010

A) LFPO B) 0304041000 C) 0304111200

D) DAILY 1000 TO 1200

E) RWY 25R LLZ UNSERVICEABLE

2) TRANSITION INTO STORAGE (EXAMPLE OF DATABASE TABLE)

Date	Series	Number	Type	FIR	AD	NOTAM Code	Traffic	Purpose	Scope	Lower	Upper	From	To	Schedule	Text	Coordinates Radius
030401	A	1282/03	N	LFFF	LFPO	QILAS	I	NBO	A	000	050	0304041000	0304111200	DAILY 1000 TO 1200	RWY 25R LLZ Unserviceable	4840N 00220E 010

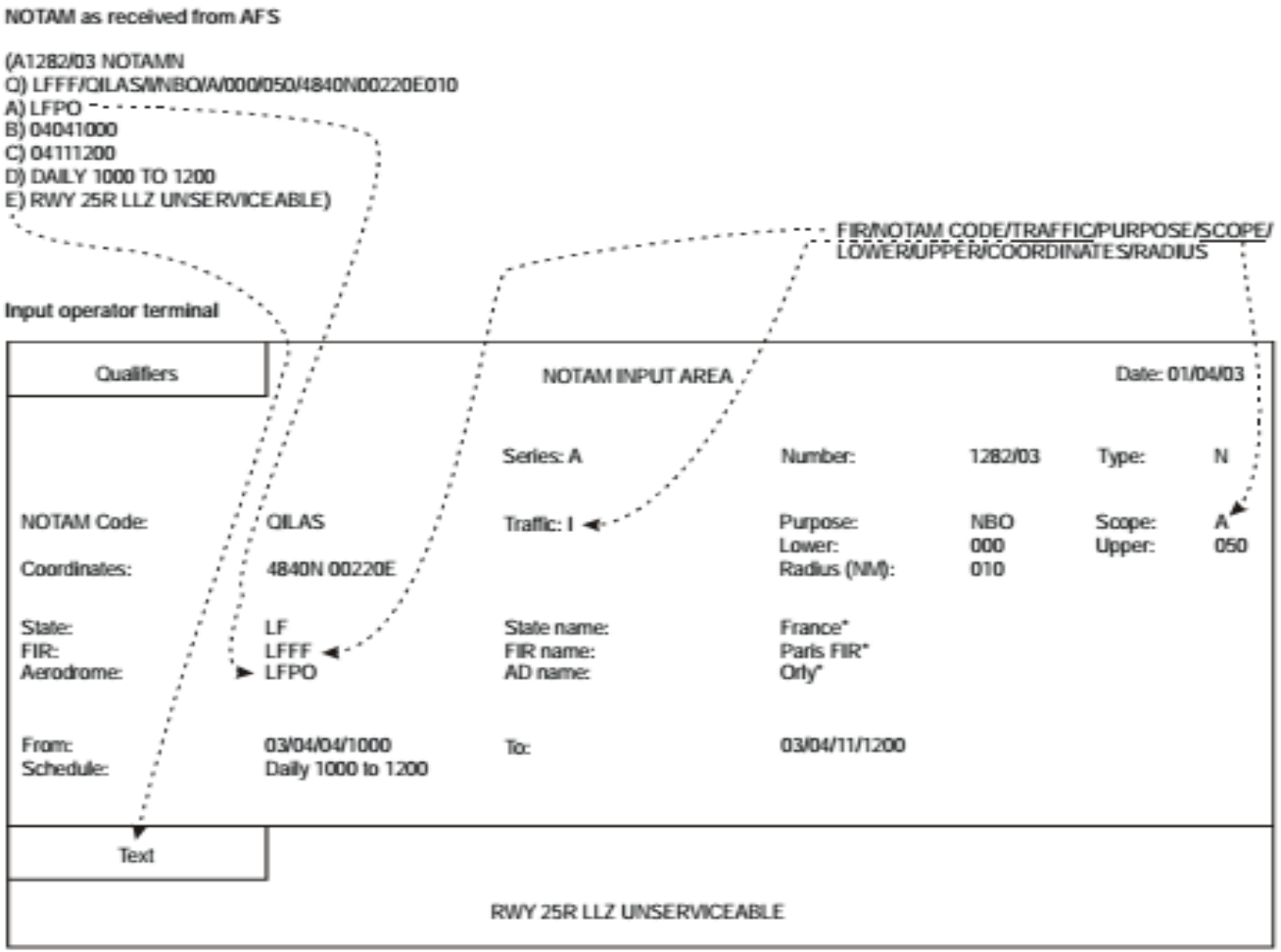
3) EXTRACT FOR PRE-FLIGHT BULLETIN ENTRY

LFPO

DAILY 1000 TO 1200 A1282/03

RWY 25R LLZ UNSERVICEAB

Figure 1 NOTAM – Storage and treatment



*Name may be automatically derived from static database if available

Figure 2 Example of NOTAM reception — Transition from AFS format into input operator's display

Input operator terminal

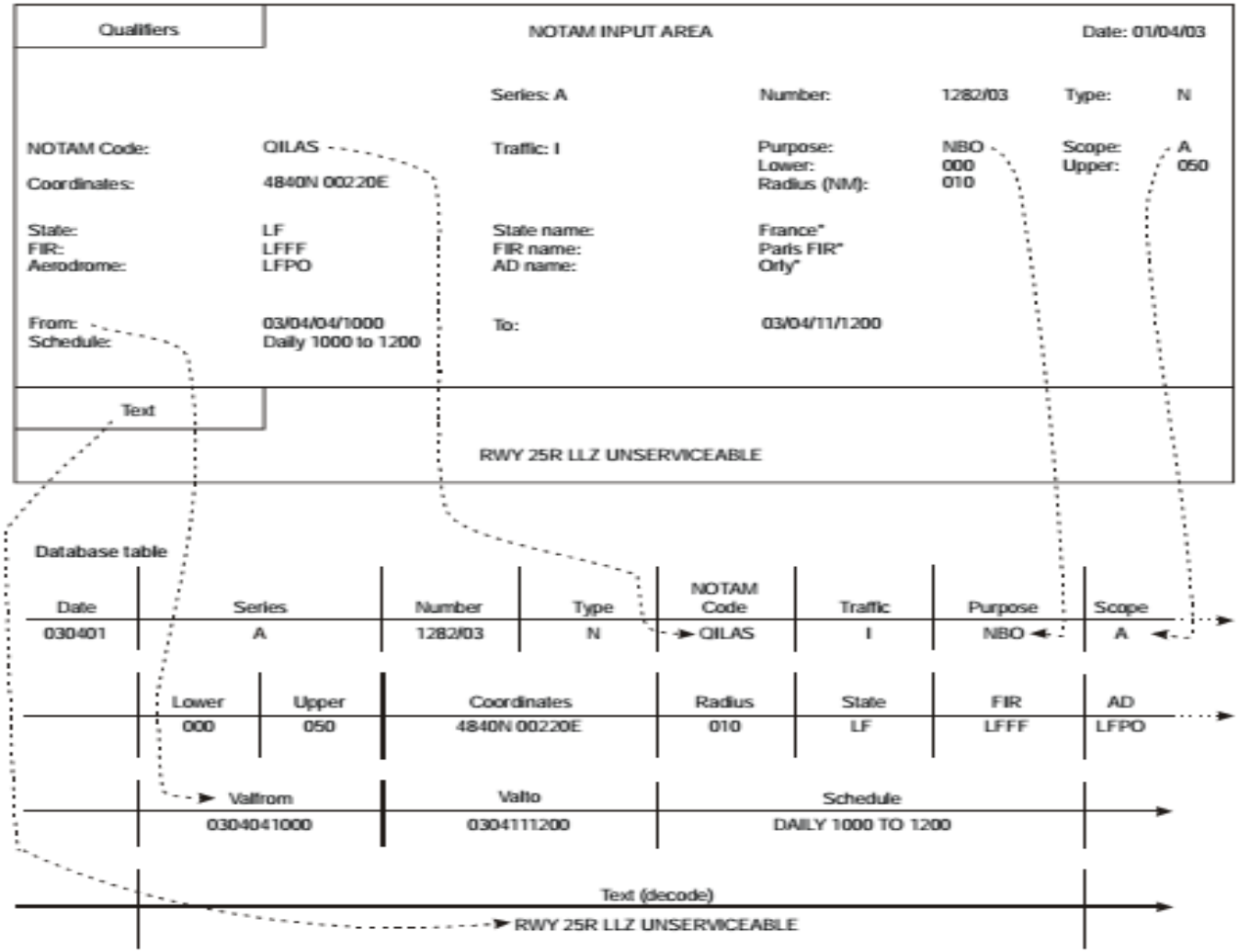


Figure 3 Example of NOTAM production — Transition from AFS format input operator's display into database

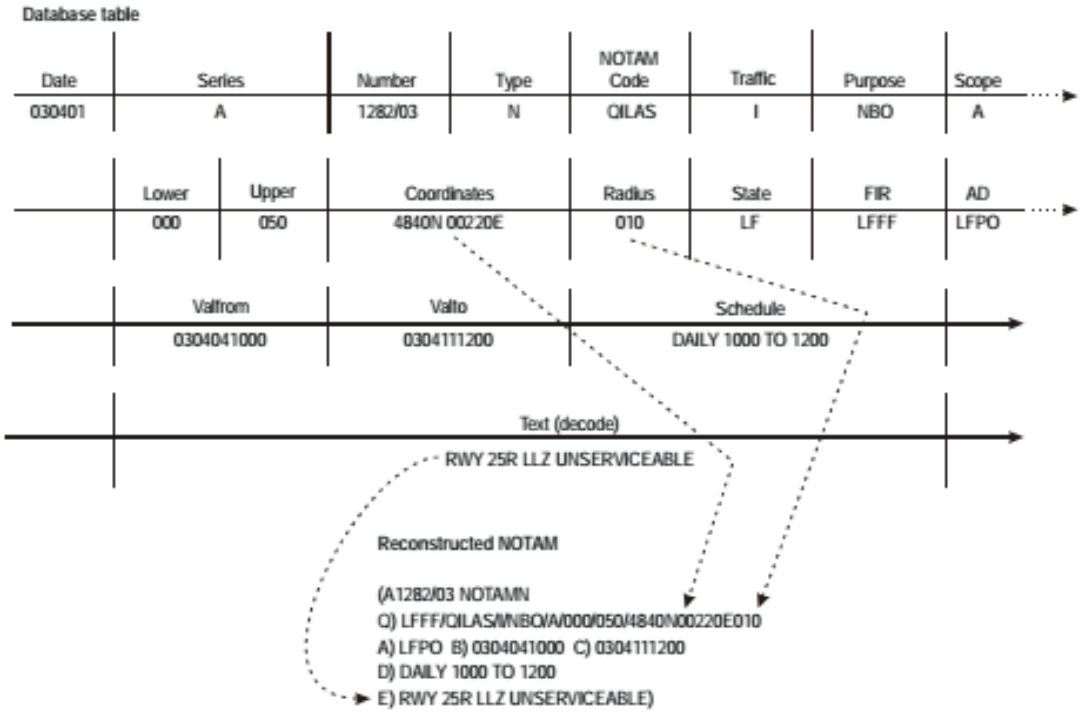
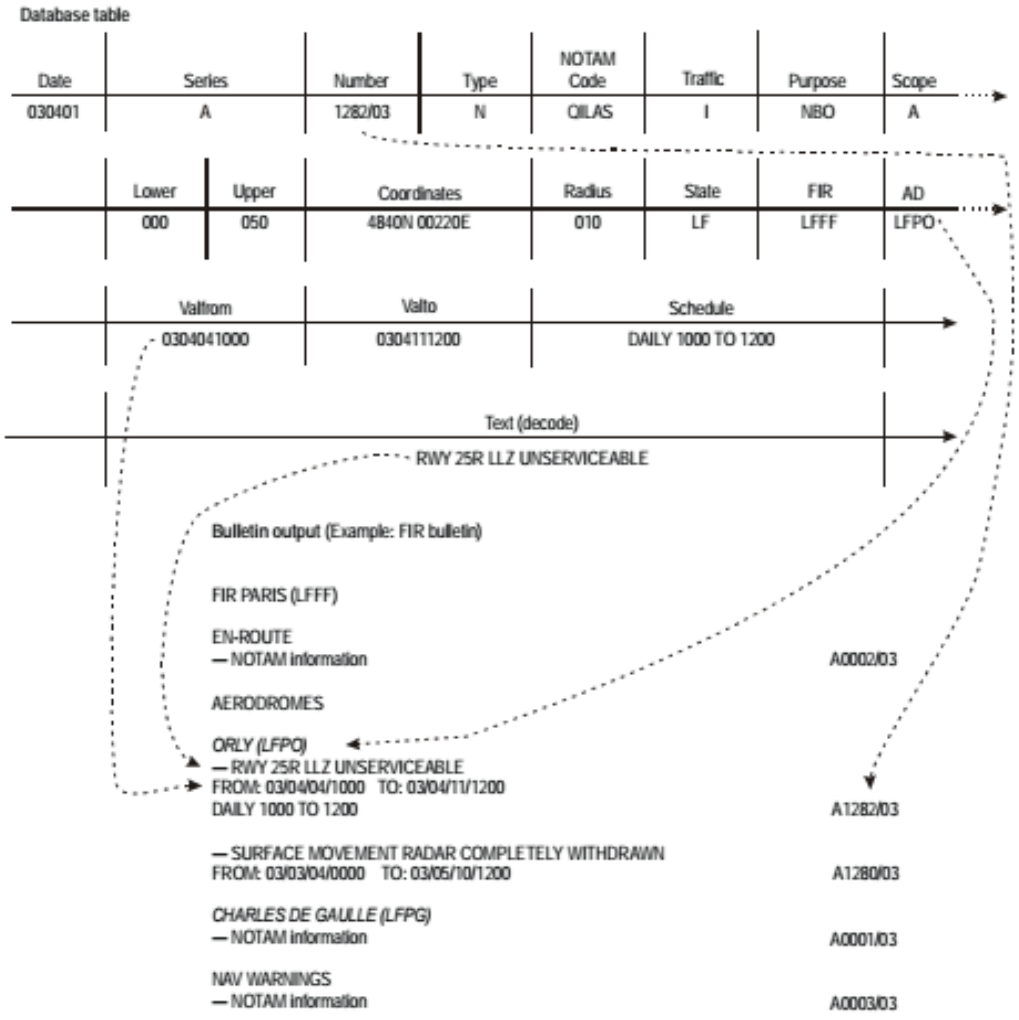


Figure 4 Example of AFS NOTAM Format reconstruction from database contents



Note – Title are generated by the edit programme

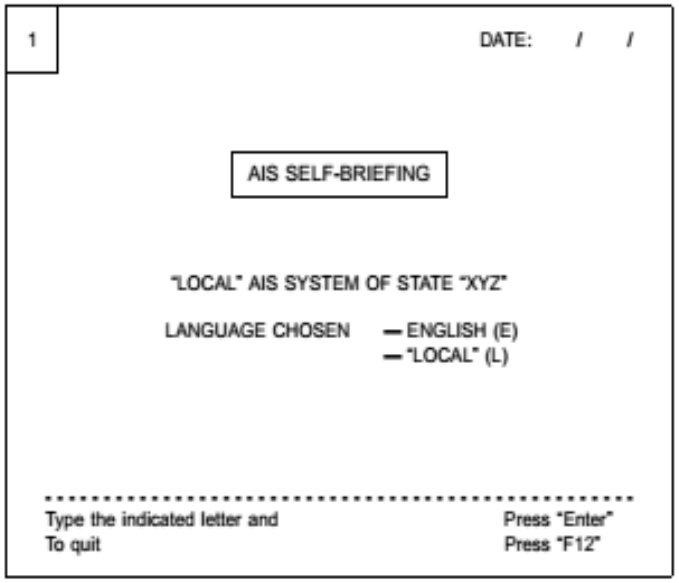
Figure 5 Example of bulletin production from database

APPENDIX B COMMON AIS QUERY PROCEDURES FOR SELF-BRIEFING BY END-USERS

1. The examples herein contain suggested common AIS query procedures for use in a self-briefing environment. Implementation of these procedures would enable end-users (pilots and flight operations personnel) to directly obtain required information from any aerodrome/heliport AIS unit participating in an integrated regional automated AIS system.

2. Because of local hardware/software requirements, the commonality is limited to the sequence and the contents of the frames presented. The keying used for interacting with the system may change depending on the hardware or software configuration. It is important, however, that all inputs be kept as simple as possible, preferably single key inputs, while ensuring that appropriate help menus are always available

RESTPICTURE



Sample choice: E (English) ⟶ Panel 2

Sample choice on Panel 1: E

SELF-BRIEFING MENU (IN ENGLISH)

2

SELF-BRIEFING MENU

THE "LOCAL" SYSTEM PROVIDES THE FOLLOWING CHOICES:

1. FLIGHT PLAN INPUT	(F)
2. MET INFORMATION	(M)
3. PRE-FLIGHT INFORMATION — VFR	(V)
4. PRE-FLIGHT INFORMATION — IFR	(I)
5. PRE-FLIGHT INFORMATION — IFR/VFR	(B)
6. AIP CONSULTATION	(A)

Type the indicated letter and	Press "Enter"
To return to previous page	Press "F3"
To quit	Press "F12"

Sample choice: Pre-flight information — IFR (I) ⟶ Panel 3

Sample choice on Panel 2: I

BULLETIN TYPE IFR

3

PRE-FLIGHT INFORMATION — IFR

THE FOLLOWING BULLETINS ARE AVAILABLE:

*COMMON OUTPUT FOR THE ENTIRE REGIONAL SYSTEM

1. AERODROME BULLETIN	(A)
2. AREA BULLETIN	(F)
3. ROUTE BULLETIN	(R)

SPECIAL OUTPUT FROM "LOCAL" SYSTEM

4. NARROW ROUTE BULLETIN	(N)
5. SPECIAL AREA BULLETIN	(S)

Type the indicated letter and	Press "Enter"
To return to previous page	Press "F3"
To quit	Press "F12"

* This is the suggested common user output for an integrated regional AIS system

Sample choice: Aerodrome bulletin (A) ⟶ Panel 4

Sample choice: Area bulletin (F) ⟶ Panel 5

Sample choice: Route bulletin (R) ⟶ Panel 7

Sample choice on Panel 3: A

AERODROME BULLETIN — IFR

4

AERODROME BULLETIN — IFR

BULLETIN VALIDITY:
— ONE DAY (SPECIFY DATE (YYMMDD)):
— PERIOD
FROM (YYMMDDHH): TO (YYMMDDHH):

YOU MAY SPECIFY UP TO 12 AERODROMES (FOUR-LETTER CODE)

	AD	AD	AD	AD
1	4	7	10	
2	5	8	11	
3	6	9	12	

IF YOU DO NOT KNOW THE ICAO FOUR-LETTER CODE, FUNCTION KEY "F2" WILL PROVIDE THE LIST OF AERODROMES WITH PLAIN LANGUAGE NAMES

Fill fields in sequence:
To print bulletin — Press "Enter"
For "Help" (list of aerodromes) — Press "F2"
To return to previous page — Press "F3"
To quit — Press "F12"

Sample choice on Panel 3: F

AREA BULLETIN — IFR

5

PRE-FLIGHT INFORMATION — IFR

(STANDARD VERSION CONTAINS EN-ROUTE AND AD INFORMATION)

BULLETIN VALIDITY:
— ONE DAY (SPECIFY DATE (YYMMDD)):
— PERIOD
FROM (YYMMDDHH): TO (YYMMDDHH):

BULLETIN FOR STATE (ICAO TWO-LETTER CODE):
OR BULLETIN FOR FIR(S) (ICAO FOUR-LETTER CODE):

FIR1	FIR2	FIR3	FIR4	FIR5	FIR6

— DESIRED FLIGHT LEVEL LIMITS (FOR NOTAM RETRIEVAL)
LOWER FL: UPPER FL (OPTIONAL):

Fill desired fields (FIR) in sequence:
To print standard bulletin — Press "Enter"
To obtain non-standard bulletin contents — Press "F4"
To return to previous page — Press "F3"
To quit — Press "F12"

Sample choice: Non-standard bulletin contents ("F4") ⟶ Panel 6

Sample choice on Panel 5: "F4"

NON-STANDARD BULLETIN CONTENTS (AREA)

```
6   NON-STANDARD BULLETIN CONTENTS (AREA)

ALL BULLETINS INCLUDE ITEMS OF IMMEDIATE NOTIFICATION

A) ITEMS OF OPERATIONAL SIGNIFICANCE ONLY
   — ALL INFORMATION:                                   (O)
   — ONLY EN-ROUTE:                                     (OE)
   — ONLY AERODROME:                                    (OA)

B) GENERAL PURPOSE BULLETIN
   — ONLY EN-ROUTE:                                     (BE)
   — ONLY AERODROME:                                    (BA)

OPTION FOR GENERAL PURPOSE BULLETIN — INCLUSION OF
— ALL MISCELLANEOUS INFORMATION:                        (M)
— SPECIFIC NOTAM, SUBJECT DEFINED
    BY 2/3 NOTAM CODE LETTER:
   AIRSPACE RESERV.:  (RA)   FIRING:           (WM)
   AIR DISPLAY:       (WA)   FORMATION FLT:    (WV)
   PARACHUTE JUMPING: (WP)   OTHERS:

Type indicated letter(s) for option, fill
   desired 2/3 NOTAM code letters:
To print bulletin                          Press "Enter"
For "Help" (other NOTAM codes)             Press "F2"
To return to previous page                 Press "F3"
To quit                                    Press "F12"
```

Sample choice on Panel 3: R

ROUTE BULLETIN — IFR

```
7   ROUTE BULLETIN — IFR

THE ROUTE BULLETIN OBTAINED IN THIS BIREFING MODE
CORRESPONDS TO THE BULLETIN TYPE DEFINED AS COMMON
FOR THE REGIONAL SYSTEM, I.E. BY DESCRIPTION OF:
— AERODROMES OF DEPARTURE AND ARRIVAL, ALTERNATES
— SEQUENCE OF FIRS TO BE OVERFLOWN

YOU CAN OBTAIN ROUTE BULLETINS IN FOUR DIFFERENT WAYS:
   1. MANUAL ROUTE DESCRIPTION                  (M)
   2. ROUTE PROPOSAL BY CITY PAIR               (C)
   3. ROUTE PROPOSAL ACCORDING TO DESTINATION   (D)
   4. ROUTE PROPOSAL BY FLIGHT NUMBER           (F)

Type the indicated letter and              Press "Enter"
To return to previous page                 Press "F3"
To quit                                    Press "F12"
```

Sample choice: M (Manual route description) → Panel 8

Sample choice: C (Route proposal by city pair) → Panel 10

Sample choice: D (Route proposal according to destination) → Panel 11

Sample choice: F (Route proposal by flight number) → Panel 12

Sample choice on Panel 7: M

ROUTE BULLETIN (MANUAL ROUTE DESCRIPTION)

8

ROUTE BULLETIN (MANUAL ROUTE DESCRIPTION)

BULLETIN VALIDITY:
— ONE DAY (SPECIFY DATE (YYMMDD)):
— PERIOD
FROM (YYMMDDHH): TO (YYMMDDHH):

AERODROMES (ICAO FOUR-LETTER CODE)
DEPARTURE: ARRIVAL:
— ALTERNATE(S): : : : :
— SEQUENCE OF FIR (ICAO): : : : :

DESIRED FLIGHT LEVEL LIMITS FOR NOTAM RETRIEVAL (OPTION)

	ALL FIR		FIRST	OTHER	LAST
— UPPER LEVEL (FL):	OR	:	:	:	
— LOWER LEVEL (EX. 090):	OR	:	:	:	

Fill desired fields (FIR) in sequence:
To print standard bulletin — Press "Enter"
To obtain non-standard bulletin contents — Press "F4"
For "Help" (FIRS, aerodromes) — Press "F2"
To return to previous page — Press "F3"
To quit — Press "F12"

Sample choice: Non-standard bulletin contents ("F4") ⟶ Panel 9

Sample choice on Panel 8: "F4"

NON-STANDARD BULLETIN CONTENTS (ROUTE)

9

NON-STANDARD BULLETIN CONTENTS (ROUTE)

ALL BULLETINS INCLUDE ITEMS OF IMMEDIATE NOTIFICATION

A) ITEMS OF OPERATIONAL SIGNIFICANCE ONLY
— ALL INFORMATION: (O)
— ONLY EN-ROUTE: (OE)

B) GENERAL PURPOSE BULLETIN
— ALL INFORMATION (EN-ROUTE AND AD) (B)

OPTION FOR GENERAL PURPOSE BULLETIN — INCLUSION OF
— ALL MISCELLANEOUS INFORMATION: (M)
— SPECIFIC NOTAM, SUBJECT DEFINED BY 2/3 NOTAM CODE LETTER:

AIRSPACE RESERV.:	(RA)	FIRING:	(WM)
AIR DISPLAY:	(WA)	FORMATION FLT:	(WV)
PARACHUTE JUMPING:	(WP)	OTHERS:	

Type indicated letter(s) for option, fill desired 2/3 NOTAM code letters:
To print bulletin — Press "Enter"
For "Help" (other NOTAM codes) — Press "F2"
To return to previous page — Press "F3"
To quit — Press "F12"

Sample choice on Panel 7: C

ROUTE BULLETIN (ROUTE PROPOSAL BY CITY PAIR)

10 **ROUTE BULLETIN (BY CITY PAIR)**

BULLETIN VALIDITY:
— ONE DAY (SPECIFY DATE (YYMMDD)):
— PERIOD
FROM (YYMMDDHH): TO (YYMMDDHH):

DEFINE CITY PAIR (ICAO FOUR-LETTER CODE)
— AERODROME OF DEPARTURE : ADDEP
(GENERATED BY SYSTEM, CHANGE IF REQUIRED)
— DESTINATION :
(AERODROME OF ARRIVAL)

Fill aerodrome(s), then (Predetermined route descriptions will be presented for selection (Panel 13). If no route is known to the system, "Manual Route Description" (Panel 8) is displayed.)	Press "Enter"
For "Help" (list of aerodromes)	Press "F2"
To return to previous page	Press "F3"
To quit	Press "F12"

Sample choice: Display of predetermined routes ("Enter") ⟶ Panel 13

Sample choice on Panel 7: D

ROUTE BULLETIN (ROUTE PROPOSAL ACCORDING TO DESTINATION)

11 **ROUTE BULLETIN (ACCORDING TO DESTINATION)**

BULLETIN VALIDITY:
— ONE DAY (SPECIFY DATE (YYMMDD)):
— PERIOD
FROM (YYMMDDHH): TO (YYMMDDHH):

DEFINE DESTINATION (ICAO FOUR-LETTER CODE)
— DESTINATION :
(AERODROME OF ARRIVAL)
— AERODROME OF DEPARTURE : ADDEP
(GENERATED BY SYSTEM)

Fill aerodrome(s), then (Predetermined route descriptions will be presented for selection (Panel 13). If no route is known to the system, "Manual Route Description" (Panel 8) is displayed.)	Press "Enter"
For "Help" (list of aerodromes)	Press "F2"
To return to previous page	Press "F3"
To quit	Press "F12"

Sample choice on Panel 7: F

ROUTE BULLETIN (ROUTE PROPOSAL BY FLIGHT NUMBER)

12

ROUTE BULLETIN (BY FLIGHT NUMBER)

BULLETIN VALIDITY:
— ONE DAY (SPECIFY DATE (YYMMDD)):
— PERIOD
FROM (YYMMDDHH): TO (YYMMDDHH):
FLIGHT NUMBER:

Give "Flight Number" and (Predetermined route descriptions will be presented for selection (Panel 14). If no route is known to the system, "Manual Route Description" (Panel 8) is displayed.)	Press "Enter"
For "Help" (list of flight numbers)	Press "F2"
To return to previous page	Press "F3"
To quit	Press "F12"

Sample choice: Display of predetermined routes ("Enter") ⟶ Panel 14

Sample choice on Panel 10: Display of predetermined routes ("Enter")

SELECTION OF PREDETERMINED ROUTES (CITY PAIR)

13

SELECTION OF PREDETERMINED ROUTE (SEQUENCES OF FIRS)

FOR CITY PAIR	ICAO	NAME (IF KNOWN TO SYSTEM)
*DEPARTURE	LFAD	CHAMPS VERT-LA-JOIE
*ARRIVAL	EDAD	FLUGPLATZ LANDEFELD

ROUTES PROPOSED:

*1)	LFXX	EDXX	EDYY	:	:	:	:
*2)	LFXX	LFSS	EDYY	:	:	:	:
3)	:	:	:	:	:	:	:
4)	:	:	:	:	:	:	:

*ALTERNATES PROPOSED:	EDAA	EDAB	EDAC	:
ALTERNATES ADDED:	:	:	:	:

FLIGHT LEVEL LIMITS (OPTION)	ALL FIR		FIRST	OTHER	LAST
— UPPER LEVEL (FL):	:	OR	:	:	:
— LOWER LEVEL (EX. 090):	:	OR	:	:	:

To print standard bulletin	Press "Enter"
To obtain non-standard bulletin contents	Press "F4"
For "Help" (aerodromes)	Press "F2"
To return to previous page	Press "F3"
To quit	Press "F12"

*Fields filled by system.

Sample choice: Non-standard bulletin contents ("F4") ⟶ Panel 9

Sample choice on Panel 12: Display of Predetermined Routes ("Enter")

SELECTION OF PREDETERMINED ROUTES (FLIGHT NUMBER)

14

SELECTION OF PREDETERMINED ROUTE (SEQUENCES OF FIRS)

FOR FLIGHT NUMBER *** AF1234 *** ETD: 14H30

	ICAO	NAME (IF KNOWN TO SYSTEM)
*DEPARTURE	LFPG	PARIS CHARLES DE GAULLE
*ARRIVAL	EDDF	FRANKFURT MAIN

ROUTES PROPOSED:YOUR SELECTION * * (EX. * 2 *)

*1)	LFFF	EDBB	EDFF	:	:	:	:
*2)	LFFF	EDFF	:	:	:	:	:
3)	:	:	:	:	:	:	:
4)	:	:	:	:	:	:	:

*ALTERNATES PROPOSED:	EDAA	EDAB	EDAC	:
ALTERNATES ADDED:	:	:	:	:

FLIGHT LEVEL LIMITS (OPTION)	ALL FIR	FIRST	OTHER	LAST
— UPPER LEVEL (FL): :	OR :	:	:	
— LOWER LEVEL (EX. 090): :	OR :	:	:	

To print standard bulletin	Press "Enter"
To obtain non-standard bulletin contents	Press "F4"
For "Help" (aerodromes)	Press "F2"
To return to previous page	Press "F3"
To quit	Press "F12"

*Fields filled by system.

Sample choice: Non-standard bulletin contents ("F4") ⟶ Panel 9

STANDARD NOTAM RETRIEVAL FORMAT

AIS Briefing Service – Intermediate users

Example for area or AD information (one or several locations)

Output type: Summary (Summary bulletin) Traffic: I (I, V, IV)			NOTAM RETRIEVAL Validity: (YY/MM/DD/HHMM) Date: 03/05/12/0800 From: / / / To: / / /			
Location (State, FIR, AD)			Selection by:			
NR	Type	Name (ICAO)	Purpose (N, B, O, M)	Scope (A, E, W)	Above FL	Below FL
1	FIR	GOOO	B	–	000	250
2	FIR	GVSC	O	E	100	250
3						
4						
5						
6						

Example for route bulletin (DEP AD, ARR AD, FIR)

Output type: Summary (Summary bulletin) Traffic: I (I, V, IV)			NOTAM RETRIEVAL Validity: (YY/MM/DD/HHMM) Date: 03/05/12/0800 From: / / / To: / / /			
Location (State, FIR, AD)			Selection by:			
NR	Type	Name (ICAO)	Purpose (N, B, O, M)	Scope (A, E, W)	Above FL	Below FL
1	AD	WSSS	O	A		
2	AD	WIII	O	A		
3	FIR	WSJC	O	E	120	250
4	FIR	WIIZ	O	E	120	310
5						
6						

STANDARD NOTAM RETRIEVAL FORMAT FOR INDIVIDUAL NOTAM

Retrieval of one or several NOTAM

	INDIVIDUAL NOTAM RETRIEVAL			Date: (YYMMDDHHMM)
	State (Doc 7910) (HE)	NOF of origin (HECAYNYX)	Series (A, B, ...)	Number/Year/(1234/03)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Fill, in sequence, desired NOTAM, then press "Execute" key. To retrieve more than 10 NOTAM, repeat query.				

APPENDIX C COMMON QUERY MESSAGES FOR THE INTERROGATION OF OTHER AIS DATABASES

1. The following query formats should be developed for the interrogation of database systems participating in an integrated regional automated AIS system. They are intended to complement the procedures described in this AP and could be used where self-briefing facilities are not directly available.

2. The command structure is simplified to allow a single-line inquiry format to be used which is not dependent upon the access terminal characteristics or the communication access method (AFS, public service telecommunication networks, public data transmission networks, etc.).

Inquiry format

3. An inquiry should comprise three sections separated by a stroke (/). The format should be:
<INQUIRY TYPE> / <FILTER> / <ARGUMENTS>

4. Different filters may be applied to different inquiry types. In some cases filters may be invalid for a particular inquiry type or, where no filter values are included in the inquiry, default values will be assumed. Table 1 below depicts the range of inquiry types and the default/invalid filter values. In all cases the inquiry format delimiters (/) must be included whether or not filter values are provided in the inquiry. (See examples of inquiry formats.)

Common set of inquiries

5. The common set of inquiries is for interrogation of AIS databases using different access methods.

Inquiry type

6. A three-alpha-character sequence is to be used to identify the type of inquiry being made:

Route	Briefing	SPR
FIR area	Briefing	FAB
Aerodrome/Heliport	Briefing	AER
Original NOTAM	Briefing	ONB
NOTAM checklist	Briefing	NCB

Filters

7. The following serve as filter switches:

Traffic	IFR (I), VFR (V), BOTH (G)*	
Purpose	Immediate notification	(N)
	Operationally significant	(O)
	Bulletin item	(B)
	Miscellaneous	(M)
Scope	En-route information	(E)
	NAV warning information	(W)
	Aerodrome information	(A)
	Combined information	(C)*

**These filter switches do not exist in the NOTAM qualifier definition but are valid in this inquiry format.*

Arguments

8. Each argument must be separated by a comma.

FIR

AAAA = four-letter location indicator

Aerodrome

BBBB = four-letter location indicator

NOTAM identifier

LLLL, AnnnnYY = four-letter location indicator followed by a series letter, the number and the year.

TABLE 1 INQUIRY TYPES AND DEFAULT FILTERS

Inquiry type	*Traffic*	*Purpose*	*Scope*
Route bulletin	SPR	G	O #
Area bulletin	FAB	G	O C
Aerodrome bulletin	AER	G	O #
Original NOTAM	ONB	#	# #
NOTAM checklist	NCB	#	# #
Note.— # indicates no filter required for this entry.			
Examples of inquiry formats			
Area type briefing	FAB/VNW/AAAA$_1$,..,AAAAn		
Route type briefing	SPR/ /ADEP,DEST,FIR$_1$,..FIR$_2$		
Aerodrome type briefing	AER/VB/BBBB$_1$,..,BBBBn		
NOTAM request	ONB/ /LLLL,AnnnnYY		
Note.— n *is always less than 10 (0 to 9 inclusive).*			