



EXPLANATORY MATERIAL FOR

***Integrity of Aeronautical Information –
Aeronautical Data Origination***

DOCUMENT CONTROL

DOCUMENT CHANGE RECORD

The following table records the complete history of the successive editions of the present document.

Edition Number	Edition Date	Reason for Change	Pages Affected
0.1-0.4	10-09-07	Creation and review	All
1.0	24-09-07	Released edition	All

Status: Released	Edition No: 1.0	Date: 24 September 2007	Document No: DAP/APN/ADO/SPEC/EXP/1.0
-------------------------	------------------------	-----------------------------------	---

TABLE OF CONTENTS

DOCUMENT CONTROL	II
TABLE OF CONTENTS	III
1. INTRODUCTION	1
2. BACKGROUND	1
2.1 Data Origination Specification.....	1
2.2 Specification Development Process	2
3. COMMENT AND RESPONSE TO THE PROPOSAL.....	3
3.1 How to submit comments.....	3
3.2 Comments period.....	3
3.3 Summary of Responses to comments	3
4. CONSULTATION DOCUMENTATION INFORMATION AND ENQUIRIES	4
ANNEX A.....	5

1. INTRODUCTION

The EUROCONTROL 'ATM Strategy for the years 2000+' (ATM Strategy) has been developed to provide a strategic framework for change and to address the need for ever increasing capacity. The Navigation Strategy, developed within the framework of the ATM Strategy identifies the move to a total RNAV environment as an important means towards providing increased capacity and efficiency whilst safely meeting environmental constraints. In addition the ICAO Global CNS ATM concept describes a transition to a satellite based navigation environment. The move towards GNSS also necessitates a move to coordinate-based navigation in all phases of flight and ground movement. These changes have placed much higher demands upon aeronautical data than was required for conventional navigation. The criticality of the data quality to the safety of the operation is most clearly seen in the expected use of GNSS for landing. Whilst for an ILS landing the path is defined by the radio aid itself for GNSS landing, runway coordinates determine the landing point and approach path. It is for this reason that ICAO Annex 15 defines integrity levels for coordinate data of one error in 10^{-8} points in order to meet the safety targets for low visibility operations.

The provision of Aeronautical Information of sufficient quality, accuracy, timeliness and resolution is a recognised key enabler of the present and future ATM systems. However, a number of EUROCONTROL studies have demonstrated that Aeronautical Information does not currently meet the integrity values required to serve specific applications. One key weakness, amongst others, is in the provision of flight critical data. Studies have also demonstrated that the required data quality could only be achieved through an approach aimed at ensuring quality from its origination to its ultimate use. The AIM and Navigation domains together sought to address those parts of the process that were within their areas of responsibility. AIM have addressed the AIS requirements whilst the Navigation Domain has dealt with the data origination requirements.

One of the key issues identified is that extant ICAO and EUROCONTROL material in the area of data origination do not adequately address modern survey and calculation techniques and that there was an urgent need to provide a specification to support the capture of data quality at the point of origin. For this reason, EUROCONTROL has developed the *Integrity of Aeronautical Information - Data Origination* document as a EUROCONTROL Specification.

The draft EUROCONTROL Specification *Integrity of Aeronautical Information - Data Origination* is now being submitted for formal consultation, using the mechanisms of the EUROCONTROL Notice of Proposed Rule-Making (ENPRM) process. The formal consultation allows all States, stakeholders and interested parties to express their formal views on the document.

The consultation package is composed of 3 documents:

- 1) Explanatory Material;
- 2) Draft Specification Document;
- 3) Consultation Response Sheet.

2. BACKGROUND

2.1 Data Origination Specification

The specification *Integrity of Aeronautical Information - Data Origination* sets out the minimum requirements for the origination of navigation-related data applying to all organisations involved in the data origination process. The requirements cover the surveying of the geographical position of radio navigation aids and points whose coordinates contribute to air navigation.

Whilst being complete in itself, it forms part of a set of documents that has been produced to support the implementation of processes and systems designed to improve integrity throughout the Aeronautical Information data process.

The other documents forming part of the set are:

1. Integrity of Aeronautical Information – Principle and Guidance: provides the high level overview. It is supported by a separate Abbreviations and Definitions document and three documents which detail the three parts (functions) of the generic data process from origination to publication.
2. Integrity of Aeronautical Information - Data & Quality Management: describes effective data management and quality management processes and procedures which must support a data process to ensure that the integrity and quality objectives of such a process are achieved.
3. Integrity of Aeronautical Information - Data Publication; sets out the minimum requirements for the process involved in the provision of aeronautical data publication and can be applied to all organisations involved in the publication process for Aeronautical Information. The requirements cover the publication by traditional, paper-based, methods as well as through electronic means.

2.2 Specification Development Process

The initial document which aimed at ensuring the quality of data was the EUROCOCONTROL Survey Standard Doc 007 produced as part of the WGS 84 programme. This was published in 1996.

As the result of experience gained from various studies carried out from 2000 to 2005, it has been revealed that significant error rates occur in the translation from procedure design to airborne navigation data bases due to a number of reasons. This has resulted in the production of separate guidance on RNAV Procedure Design, RNAV Procedure Validation and RNAV Procedure Flight Inspection.

The development of GPS survey techniques has necessitated an update of Doc 007. Together with the experience of the translation of procedure design into data bases, this resulted in the identification of a need for a Data Origination specification addressing all data origination, both survey and calculation.

A first version was produced in 2003 and reviewed in a Data Origination Forum. The document was updated in 2004 following comments from stakeholders.

With the advent of the CHAIN Activity addressing the data processes of AIS it was decided to develop a joint document on data and quality management and those sections were removed from the Data Origination Document. The Document has been used and refined in 2006 as a result of experience with CHAIN. .

The Document was passed to the AIS Team for reviewed at their 25th meeting in September 2006. Following this a Stakeholder review was undertaken in December 2006 and further updates undertaken prior to its review and endorsement by the Airspace and Navigation Team (ANT) at its 43 meeting in May 2007.

In the first instance, it is intended to issue the Specification as a stand-alone EUROCONTROL Specification for use by stakeholders. However, an implementing rule on aeronautical data and information quality is currently being developed under the Single European Sky (SES) interoperability regulation and this has already identified the *Integrity of Aeronautical Information - Data Origination* document as possibly providing means of compliance to the rule. On completion of the implementing rule, it is likely that the specification, or parts of it, will be processed to become a Community Specification.

3. COMMENT AND RESPONSE TO THE PROPOSAL

3.1 How to submit comments

You are invited to provide formal comments to the draft Specifications document for Integrity of Aeronautical Information – Aeronautical Data Origination (Enclosure 2) using the Response Sheet (Enclosure 3)

3.2 Comments period

The consultation period for the *Integrity of Aeronautical Information - Data Origination* document is effective from 24 September 2007. The period within which comments can be received at EUROCONTROL extends for 2 calendar months until 23 November 2007

Only comments received at the EUROCONTROL Agency by the last day of the comments period will be eligible for review and response.

3.3 Summary of Responses to comments

All comments received in respect of the *Integrity of Aeronautical Information - Data Origination* document, within the notified comment period, will be formally reviewed and appropriate responses made and actions taken. A summary of the comments and their associated responses will be published for public access on the Navigation Domain website page.

4. CONSULTATION DOCUMENTATION INFORMATION AND ENQUIRIES

The consultation documentation is available to all interested parties. Copies of the consultation package have been sent directly to the States, organisations and bodies included at Annex A.

Additional copies of the consultation documentation can be obtained via the Navigation Domain website at:

<http://www.ecacnav.com>

Or on request (including your name, organisation representing and country) to:
prnav@eurocontrol.int , or phone: (32-2) 729 4633/4181, or by post:

*EUROCONTROL
DAP
Attn J Sultana
Head of APN
Rue de la Fusée, 96
B-1130 BRUSSEL
Belgium*

These contact details should also be used to obtain further information.

ANNEX A

LIST OF CONSULTATION

- EUROCONTROL Member States regulatory authorities (civil and military), and civil and military key ATS providers of each EUROCONTROL Member State;
- Regulatory authorities of States observers at the Provisional Council;
- International Organisations having observer status at the Provisional Council;
- Key trade and professional associations having observer status at the Provisional Council;
- Chairman or the following EUROCONTROL Bodies:
 - Civil/Military Interface Standing Committee (CMIC) – copy Head of Directorate of Civil-Military ATM Co-ordination (DCMAC);
 - Performance Review Commission (PRC) – copy Head of Performance Review Unit (PRU);
 - Safety Regulation Commission (SRC) – copy Head of Safety Regulation Unit (SRU);
 - Air Navigation Services Board (ANSB) – copy to the Secretary of the ANSB

The detailed list of addressees can be found at: <http://www.ecacnav.com>