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WORKING PAPER

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ASSEMBLY — 37TH SESSION

TECHNICAL COMMISSION

Agenda Item 39: Transition from Aeronautical Information Services (AIS) to Aeronautical Information Management (AIM)

TRANSITION FROM AIS TO AIM

(Presented by Belgium, on behalf of the European Union and its Member States[1], by the other States Members of the European Civil Aviation Conference[2], and by Eurocontrol)

EXECUTIVE SUMMARY

This paper outlines the progress made towards the strategic evolution of Aeronautical Information Management (AIM) and the elaboration and implementation of the ICAO Roadmap for change. In that direction focused actions are proposed.

Action: The Assembly is invited to:

a) Develop a better AIM/MET interface on a global basis;
b) Facilitate the global adoption of the Digital NOTAM;
c) Determine if the ADQ material should be formally submitted to ICAO for consideration for global application and whether the scope of Annex 15 should be progressively extended to the entire chain of Aeronautical Information;
d) Consider the early publication of Doc 7910 & Doc 8585 in electronic, digital form; and
e) Support the early publication of the aims, objectives and key areas of content for the MET/AIM Divisional meeting to allow time for research, discussion and consultation to ensure the applicability and quality of content.

Strategic Objectives:	This working paper relates to Strategic Objectives: A (Enhance global civil aviation safety) as it results in more systematic approach for ICAO provisions related to all providers of Aeronautical Information; and D (Efficiency) since it proposes to use modern technologies for dissemination of Aeronautical Information.
Financial implications:	Neutral, since a specific Study Group for AIS/AIM is already established.
References:	Annex 15, *Aeronautical Information Services* Doc 9906, *Quality Assurance Manual for Flight Procedure Design*

[1] Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom. All these 27 States are also Members of the ECAC.

[2] Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Iceland, Moldova, Monaco, Norway, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey and Ukraine.

1. INTRODUCTION

1.1 The ICAO global ATM Operational Concept, endorsed by the Eleventh Air Navigation Conference (2003) noted the role and significance of aeronautical information in support of the future Air Traffic Management (ATM) system. This was endorsed by the 36th General Assembly in 2007. In its paper A36-WP/51 TE/10 to the Assembly, Europe[3] noted that ATM is dependent on the provision of timely, relevant, accurate, and quality assured information that allows the ATM community to make informed decisions, on the basis of Collaborative Decision Making (CDM) rather than in isolation. It recommended that in order to progress the ICAO Global Concept, the traditional product-centred provision of aeronautical information had to be replaced by a data-centred and systems-oriented solution. Since the 36th session of the General Assembly, ICAO has established the AIS-AIM Study Group to develop a strategic roadmap for change and supporting material to facilitate implementation. Furthermore the safety relevance of organisations providing digital navigation data for use in avionics has continued to increase. In a number of ICAO Contracting States these service providers are subject to an acceptance process.

2. ROLE OF ICAO

2.1 AIM

2.1.1 The ICAO Secretariat is committed to leading the transition to AIM. Its role is to ensure global harmonisation, through the requisite Standards and Recommended Practices (SARPs) and other ICAO provisions to be developed and made available in a timely fashion to support AIM. The AIS-AIM Study Group (AIS-AIMSG) was constituted in 2008 and has met twice since then.

2.1.2 Europe greatly welcomed the establishment of the AIS-AIMSG and strongly supports and contributes to the work of the SG within the context of the ICAO strategic roadmap for change. Many European States are actively engaged in preparing for implementation. The SG has substantially met the majority of recommendations of the Global AIM Congress (Madrid, 2006). The exception is the seventh recommendation related to the implementation of the World Geodetic System 1984 (WGS-84) and Quality Management Systems (QMS), which are under the responsibility of Contracting States. The recommendations are reproduced in A36-WP/51 TE/10. In addition, the General Assembly may wish to note that in the European Union (EU) [4] and in the USA[5] the scope of safety oversight is being extended to the providers of navigation data for avionics. In the EU the process has now a solid legal basis[6]. The technical specifications for this work are standardised through industry bodies (e.g. Eurocae).

2.2 Aeronautical Meteorology (MET)

2.2.1 Recognising the essential importance of MET to the safety, regularity and economy of flight[7] and noting the close connection between AIM and MET within Air Navigation Services, Europe welcomes and strongly supports the close relationship that is to be established between the AIS-AIMSG

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[3] Albania, Armenia, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Turkey, Ukraine and United Kingdom.

[4] EASA conditions for issuing letter of Acceptance to providers of navigation data: http://www.easa.europa.eu/ws_prod/r/doc/rule_Op_01_05_Nav_database_supp_doc.pdf

[5] FAA Advisory Circular 20-153

[6] Regulation EC 1108/2009 (so called "EASA Basic Regulation").

[7] The Eurocontrol (independent) Performance review Commission has estimated the annual cost of disruption to the European ATM system caused by adverse weather to be approximately €900 million.

and the Aerodrome Meteorological Observation and Forecast Study Group (AMOFSG). Besides active participation in the AMOFSG and recognising the gulf of understanding that exists between MET and ATM, Europe is contributing significantly to the advancement of MET in the region and globally through the sponsorship of very popular, productive and facilitated biannual Workshops dedicated to the advancement of understanding of needs and capabilities of each community and to the development of a robust relationship which is clearly needed. The gulf of understanding between MET and ATM is not unique to Europe and it is recommended that the General Assembly request ICAO to develop provisions for a better interface between the MET and ATM domains on a global basis.

2.2.2 In addition to the Workshops, Eurocontrol and the Federal Aviation Administration jointly facilitate biannual Technical Interchange Meetings (TIM). In addition to these organisations, the MET Service Provider and the Research And Development communities, and ICAO and the World Meteorological Organisation (WMO) are represented. The objective of these "informal" meetings is to advance transatlantic common understanding on MET issues and developments and to identify ways and means of assisting the two World organisations in their work. During its last meeting in April 2010, the TIM, in the interests of inclusion, agreed to extend participation to a limited number of States to reflect global opinion and expertise.

3. KEY ACTIVITIES

3.1 Digital NOTAM

3.1.1 One of the major operational constraints of today is that aeronautical information is usually provided on paper (i.e. the Aeronautical Information Publication (AIP), flight guides and charts) or in sealed database for use within, for instance, an aircraft flight management system (FMS). There are only two means available to amend such "static" information: publication of printed change information requiring page replacements or hand-written amendments which are prone to error; or telegram style Notices to Airmen (NOTAM).

3.1.2 The publication of the Aeronautical Information Exchange Model (AIXM) version 5 provides a platform on which to develop digital change messages for the update of electronic databases. The Digital NOTAM project will augment the venerable NOTAM and in time replace it. The implementation of the Digital NOTAM will provide the means to create truly temporal electronic databases and form the foundation for the creation and maintenance of the universal operational airspace situation picture available on the ground and in the air. The project which is being closely coordinated between Eurocontrol and the FAA is scheduled for progressive implementation from 2011 and has been designed to provide compatibility by outputting both digital and textual change messages, the latter in the classical NOTAM format. Progress is most encouraging. Two trials have been held[8]. Participants were very enthusiastic. Feedback from them has been included in AIXM V5. A further trial using the SNOWTAM in digital format was conducted over the winter, again with broad based involvement. The results, under evaluation, will be used to further shape the product. As mentioned earlier, it is the intention of Europe and the FAA to progressively implement the Digital NOTAM starting with ground-ground use. The General Assembly is requested to recommend to ICAO to facilitate the global adoption of the digital NOTAM.

3.2 Aeronautical information data quality

3.2.1 The quality of aeronautical information is of significant concern for the safety, regularity and efficiency of air navigation. Recognising this, the European Commission delivered a mandate to Eurocontrol in 2005 to investigate the Regulatory implications of the data chain and to examine the

[8] 26 States (5 non-ECAC), some military AIS, and 24 commercial organisations participated.

requirements for an implementing rule[9] to ensure the integrity of the processing of data from the point of origination through to publication in an appropriate media form. The text of the ADQ Implementing Rule was agreed and approved on the 26th January 2010, and entered into force on the 16th February 2010. The first provisions of the regulation are applicable in July 2013[10]. The regulation though based on existing Annex 15 requirements extends the scope significantly to encompass the needs of modern ATM. In consequence, regulatory and supporting material may well have global applicability. It is recommended that ICAO give due consideration to the extension of the provisions of Annex 15 to embrace the end-to-end data chain and to the review of this material as a basis for further evolution of Quality Management Guidance Material for member States and as an input to the proposed MET/AIM Divisional meeting in 2014. A further consideration is that ICAO currently publishes essential operational data such as *Location Indicators* (Doc 7910) and *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services* (Doc 8585) only in paper form. This requires the manual construction/amendment of these documents and the manual transposition of data into end-user applications with consequent risk of error. Whilst recognising that ICAO derives valuable income from the retail of such documents, it is recommended that the General Assembly request ICAO to give consideration to expedite the means to make such information available in structured, digital form in accordance with the AIS-AIM Roadmap.

4. EUROPEAN CONCERNS

4.1 Despite the welcome progress now being made in the AIS/AIM domain, Europe has considerable concern over the limited resources available within the Air Navigation Bureau (ANB) to service progress. In voicing these concerns, Europe is also aware of the strain on resources that will be imposed by preparation for the proposed MET/AIM Divisional meeting. The understanding, interpretation and ingestion of the deliverables from SESAR and NextGen including the need to transition to information management and the facilitation on a global basis of SWIM will be most challenging. Europe wishes to play its full part in assisting ICAO to make progress recognising the particular significance and importance of the proposed Divisional meeting. Within this context, Europe would greatly welcome the early publication of the aims, objectives and key areas of content for this important meeting to allow time for research, discussion and consultation to ensure the applicability and quality of content.

5. CONCLUSION KEY ACTIVITIES

5.1 Progress is being made towards the evolution and implementation of sufficient, capable and adequate aeronautical information system, suitable to meet the needs of the present and future Air Navigation Services and welcomes the leading role of ICAO in this respect. Europe recognises the challenges faced by ICAO not least in terms of resources and is willing to continue to play its full part in helping ICAO to facilitate change.

– END –

[9] Implementing Rule – a European regulatory instrument.

[10] Note: The European Community Regulations cover data origination, design of instrument procedures and promulgation of AIS/AIM, but not the provision of digital data for navigation to e.g. on-board FMS.
The EU legislator, building upon the process of "Letter of Acceptance" already established by the FAA in the USA and by the EU Regional Safety Oversight Organisation (i.e. EASA), has determined that EASA rules shall also cover this last segment of the chain of aeronautical information. It is expected that these rules will not specify unnecessary technical details which can be standardised through industry standard-making organisation, but will on the contrary focus on service provisions and on safety oversight of related providers.