

**INTERNATIONAL CIVIL AVIATION ORGANIZATION
WESTERN AND CENTRAL AFRICAN OFFICE**



**REPORT OF THE FIFTH MEETING OF THE APIRG
AIS/MAP TASK FORCE (AIS/MAP/TF/5)**

(Dakar, 11 – 12 May 2009)

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PART I – HISTORY OF THE MEETING

1. Place/Duration

1.1 The Fifth meeting of the AIS/MAP Task Force was convened at the ICAO WACAF Office, Dakar from 11 to 12 May 2009.

2. Objective of the meeting

2.1 The main objective of this meeting is to provide guidance to States, in accordance with the requirements of the AFI Air Navigation Plan, for the implementation of APIRG/16 Conclusions 16/41, 16/42, 16/43, and 16/44 respectively, taking into account special AFI RAN/8 Meeting Recommendations 6/11 and 6/25 which call for the implementation of WGS-84, e-TOD and the elimination of AIS-MAP deficiencies. The aim is also to provide efficiency and cost-effectiveness in the development of a standardized integrated and automated AFI AIS system in order to provide harmonized quality products and services to users.

3. Secretariat

3.1 The meeting was opened by Mr. Benoit Akou Okossi, Regional Officer Meteorology on behalf of the ICAO Regional Director who welcomed all participants to the ICAO Western and Central African Office, Dakar for attending the Fifth AFI AISMAP Task Force Meeting being organized under the aegis of ICAO pursuant to various relevant APIRG Conclusions.

3.2 He drew attention to the fact that the collection and distribution of aeronautical information for use in all types of aircraft operations is the responsibility of the AIS of each State, as specified in Annex 15 to the Convention on International Civil Aviation, and that in this regard each State is not only responsible for the creation but also updating of its own AIP through AIP Amendments, AIP Supplements and NOTAMs to notify other States and users.

3.3 He pointed out the evolutionary nature of AIS-AIM Transition based on regional needs and as recognized in the Road Map document for the global transition from AIS to AIM. The transition would be supported by the Global Air Navigation Plan, regional plans and State implementation plans, which would also describe the progressive intermediate steps. The plans of all States and regions need to be aligned to ensure, to the greatest extent possible, that solutions are internationally harmonized and integrated and do not unnecessarily impose multiple equipment carriage requirements in the air components of the ATM system, or multiple systems on the ground.

3.4 He stated that Annex 4, Annex 15 and associated guidance material will also require amendment to support new digital requirements and an appropriate presentation of aeronautical information to the end user. This would include electronic AIPs (eAIP) and electronic charts. The development of these requirements would take into account that though the transition from a product-centric (current AIS) to a data centric (AIM) service is essential, it is foreseen that AIM will still have to cater for the provision of traditional AIS products during the transition phase. Nevertheless, the quality, consistency, availability and timeliness of data must meet stringent new digital requirements, substantially exceeding those currently considered acceptable.

3.5 Subsequently, Ms. Phirwa Baradi, Manager AIS, CAA of South Africa was unanimously elected to act as the interim Chairperson and Rapporteur of the meeting in the absence of Mr. Sahbani Hassen of Tunisia.

3.6 Mr. George Baldeh, Regional Officer, AIS/MAP WACAF was Secretary of the meeting.

4. Attendance

4.1 The meeting was attended by twenty-two (22) participants from nine (9) Contracting States and three (3) International organizations (ASECNA, IATA and Roberts FIR). A list of participants is at **Appendix A** to this report.

5. Working Languages

5.1 The meeting was conducted in the English language only.

6. Agenda

6.1 The following Agenda was adopted:

Agenda Item 1 : Review of the Status of Implementation of the Conclusions of the Fourth Meeting of the AIS/MAP Task Force.

Agenda Item 2 : Status of implementation of the ICAO requirements in the AIS/MAP field in the AFI Region (deficiencies).

Agenda Item 3 : Implementation of e-TOD and the draft development of a policy for the management of national e-TOD programmes by States in the AFI Region.

Agenda Item 4 : Implementation of WGS-84 and the establishment of draft WGS-84 implementation goals in coordination with the national PBN implementation plan.

Agenda Item 5 : Review of the Report of the Third Meeting of the AFI Region Study Group on the Establishment of a Centralized AFI Region AIS Data base (AFI-CAD/Study Group/3)

Agenda Item 6 : Review of the Draft Roadmap for the transition from AIS to AIM and its implications in the AFI Region.

Agenda Item 7 : Review of the Report of the First meeting of the Aeronautical Information Services-Aeronautical Information Management Study Group (AIS-AIMSG/1) and its implications in the AFI Region.

Agenda Item 8 : Any other business

PART II – REPORT ON THE AGENDA ITEMS

Agenda Item 1: Review of the status of Implementation of the Conclusions of the Fourth Meeting of the AIS/MAP Task Force

1.1 Under this Agenda Item, the meeting reviewed the Status of implementation of Conclusions of the Fourth Meeting of the AIS/MAP Task Force. It was noted that the ATS/AIS/SAR Sub-Group during its ninth meeting held in Dakar, Senegal from 25-27 April 2007, adopted and endorsed draft Conclusions 9/9 to 9/14 emanating from the Fourth AIS/MAP Task Force meeting and considered that Conclusions 9/11, 9/12 and 9/14 would be of interest to APIRG.

1.2 The meeting noted that the APIRG/16th Meeting, held in Rubavu, 19-23 November 2007, adopted five of the Conclusions emanating from the AIS/MAP TF/4 Report, (*See APIRG/16 Conc. 16/40,16/41,16/42,16/43, and 16/44*). Consequently, the AIS/MAP Task Force and the ATS/AIS/SAR Sub-Group have been tasked to follow-up on the implementation process and inform APIRG on the progress and problems being encountered.

1.3 The meeting then reviewed and updated the follow-up action on previous APIRG/15 Conclusions related to AIS/MAP (Conc. 15/33,15/34,15/35, 15/36,15/37,15/38, 15/39, 15/40, 15/41,15/42,15/43 and 15/44) and agreed on the validity of these Conclusions for continuous action.

Draft Conclusion 5/1

The meeting agreed that APIRG/15 Conclusions related to AIS/MAP (Conc. 15/33,15/34,15/35, 15/36,15/37,15/38, 15/39, 15/40, 15/41,15/42,15/43 and 15/44) are still valid for continuous follow-up action by States.

Agenda Item 2: Status of Implementation of ICAO Requirements in the AIS/MAP Field in AFI Region (Deficiencies)**Pre-flight and post-flight information services**

2.1 The meeting considering the requirements for the provision of pre-flight and post-flight information services at aerodromes/heliports normally used for international air operations, noted that with the current facilities offered, many pilots have started to make use of the commercial facilities available, which supply a product that demands an integrated and tailored briefing package, but that many users see only the information issued by the State Authority as being the official and correct data.

2.2 However, given that in the future it is envisaged that pre-flight briefing will be extended to the provision of pre-flight briefings directly to the flight deck of aircraft, this would enable the pilot to be provided with briefing information throughout the gate-to-gate operation of a flight. It would then be a natural progression to further extend this facility to include in-flight updates of aeronautical and meteorological information on the flight deck.

2.3 It was noted that Annex 15 para. 8.3 requires States to ensure that arrangements are made at aerodromes/heliports to receive post-flight information which has the purpose of ensuring that inadequacies in of facilities essential to the safety of flight operations, and the presence of birds on or around the airport constituting a potential hazard to aircraft operations, observed by a pilot during the flight, are reported without delay to the authority responsible for those facilities.

2.4 In this regard, the meeting noted that after landing, a pilot wishing to confirm in writing any observations reported on the ATS frequencies or wishing to make an initial report, may do so at the aerodrome/heliport AIS unit, where a post-flight report form should be available, as per the specimen post-flight report form is available in the AIS Manual (Doc. 8126, Sixth Edition, Figure 8-9)

2.5 The meeting agreed on the following Draft Conclusion .**Draft Conclusion 5/2**

That AFI States should provide by September 2009, an updated list of the status of implementation of the ICAO Requirements in the AIS/MAP field on Tables AIS-1 to AIS-8 in Part VIII of the FASID Table which will subsequently form the amendment proposal to the AFI FASID.

Agenda Item 3: Implementation of e-TOD and the development of a draft policy for the management of a national e-TOD program by States in the AFI Region.

3.1 The meeting noted that Annex 15 requires States to provide terrain and obstacle data at different precisions for different areas as necessary to accommodate current and planned new air navigation systems or functions and that four coverage areas have been defined for which specific levels of precision are required, with Area 1 requiring the least precision and Area 4 requiring the most, as follows:

- *Area 1 shall cover the entire territory of a State, including aerodromes.*
- *Area 2 shall be the terminal control area as published in AIPs, limited to a 45KM radius from the aerodrome reference point. If the terminal control area is not established, Area 2 shall be the area within the 45KM radius from the aerodrome reference point.*
- *Area 3 shall cover the area which is within 50 meters from the edges of defined aerodrome or heliport surface movement areas.*
- *Area 4 shall be restricted only to those runways where precision approach Category 2 or 3 has been established. Area 4 terrain data shall be provided in order to enable operators to assess the effect of terrain on decision height determination by use of radio altimeters.*

3.2 Recognizing that the implementation of e-TOD requirements is a challenging process that must be accomplished with high level commitment, careful planning, sharing of resources and a structured tracking of regional progress, the meeting adopted a proposed list of short- and medium-term tasks, at **Appendix B**, with a view to facilitate implementation. These tasks are based on experience gained at the AFI Regional Seminar on Electronic Terrain and Obstacle Data held in Casablanca, Morocco, from 1 to 3 April 2008. Appendix C to this report provides the structure for an AFI ANP FASID table which is proposed to be used to provide detail of regional e-TOD requirements and to serve as a tool for tracking implementation

3.3 The meeting noted that a structured approach to implementation is required in order to realize the important safety and efficiency benefits to be derived from the uniform implementation of WGS-84 and e-TOD provisions. On this basis, the meeting adopted the following Draft Conclusion to guide the work of APIRG.

Draft Conclusion 5/3 —Implementation of WGS-84 and electronic terrain and obstacle data

That:

- a) *the AFI Planning and Implementation Regional Group (APIRG) adopts the AIM Performance Objective “Implementation of WGS-84 and electronic terrain and obstacle data” as contained in the Performance Framework Form in Appendix B to this Report as its strategy for implementation,*
- b) *the proposed FASID Table at Attachment C to this report be adopted for inclusion as a requirement in the AFI FASID Document 7474 Vol.II,*
- c) *the adopted draft Conclusions in Appendix D emanating from the findings of the AFI Region e-TOD Seminar held in Casablanca, Morocco, from 1-3 April 2008 be reviewed*

for endorsement by APIRG,

- d) the adopted draft AFI Region e-TOD Implementation strategy under Appendix-E be reviewed for adoption by APIRG, and*
- e) the adopted terms of reference of the AFI Region e-TOD Working Group under Appendix-F be reviewed for adoption by APIRG.*

Agenda Item 4 : Implementation of WGS-84 and the establishment of draft WGS-84 implementation goals in coordination with the national PBN implementation plan.

4.1 The meeting noted that the Special AFI RAN/8 Meeting recalled that APIRG and AFI States had been working towards WGS-84 implementation for many years and that a large part of the work had been completed by most States. However, considerable work still remains.

4.2 Additionally, given that the WGS-84 reference system requires regular updating, the special AFI RAN/8 meeting recognized that implementation is now most urgent, as availability of geographical coordinates in the commonly agreed WGS-84 reference system is a prerequisite for States to obtain the benefits of PBN, and also an important step in preparing for the transition of AIS to AIM for which the provision of digital geographic data of appropriate quality will be essential.

4.3 In order to allow for a comprehensive analysis of the status of implementation of WGS-84 throughout the AFI Region, it is important that appropriate background information be provided to substantiate any discrepancy in the current implementation status.

4.4 As an update on the subject, the Secretariat prepared a regional status report in Appendix **G** and **H** for consideration and review by the APIRG/17 Meeting,.

4.5 The meeting then agreed on the following draft Conclusion:

Draft Conclusion 5/4

That States submit their responses to the Regional WGS-84 Implementation survey by 30 November 2009

Agenda Item 5: Review of the Report of the Third Meeting of the AFI Region Study Group on the Establishment of a Centralized AFI Region AIS Data base (AFI-CAD/Study Group/3)

5.1 In considering the report of the Third meeting the AFI Region Study Group on the Establishment of a Centralized AFI Region AIS Data base, the meeting noted the adoption of the framework and guidance material for the AFI-CAD by the APIRG 16th meeting (APIRG/16 Conc.16/41 refers). The main objective of this technical meeting was to provide the required forum for the AFI-CAD study Group members to work and provide guidance to the ICAO designated specialist/financial analyst-experts tasked with the development of the AFI-CAD business/financial model and the URS. The Study Group in collaboration with the designated ICAO Expert are now expected to submit the results of the project to the APIRG/17 Meeting for consideration and endorsement.

5.2 Finally, the meeting reviewed and endorsed the Report of the Third Meeting of the AFI Region Study Group on the Establishment of a Centralized AFI Region AIS Data base (AFI-CAD/Study Group/3 and adopted the following draft Conclusion in this regard.

Draft Conclusion 5/5

That APIRG would review and endorse the Report of the Third Meeting of the AFI Region Study Group on the Establishment of a Centralized AFI Region AIS Data base (AFI-CAD/3).

Agenda Item 6 : Review of the Draft Roadmap for the transition from AIS to AIM and its implications in the AFI Region

6.1 The evolutionary nature of AIS-AIM transition based on regional needs was recognized in the Road Map document for the Global Transition from AIS to AIM. The transition would be supported by the Global Air Navigation Plan, regional plans and State implementation plans, which would also describe the progressive intermediate steps. The plans of all States and regions need to be aligned to ensure, to the greatest extent possible, that solutions are internationally harmonized and integrated and do not unnecessarily impose multiple equipment carriage requirements in the air components of the ATM system, or multiple systems on the ground.

6.2 The meeting also noted that Annex 4, Annex 15 and associated guidance material will also require amendment to support new digital requirements and an appropriate presentation of aeronautical information to the end user. This would include electronic AIPs (eAIP) and electronic charts. The development of these requirements would take into account that though the transition from a product-centric (current AIS) to a data centric (AIM) service is essential, it is foreseen that AIM will still have to cater for the provision of traditional AIS products during the transition phase. Nevertheless, the quality, consistency, availability and timeliness of data must meet stringent new digital requirements, substantially exceeding those currently considered acceptable.

6.3 The meeting finally reviewed and endorsed the Roadmap for the transition from AIS to AIM at Appendix –F and drafted the following Conclusion:

Draft Conclusion 5/6
That APIRG:

- a) adopts the Roadmap as Guidance material to plan, manage and facilitate the global transition from AIS to AIM.*
- b) by using the Roadmap, assist States in planning the scope and prioritizing projects and actions for the transition to AIM.*

Agenda Item 7 : Review of the Report of the First meeting of the Aeronautical Information Services-Aeronautical Information Management Study Group (AIS-AIMSG/1) and its implications in the AFI Region.

7.1 The meeting noted the proposal to amend the provisions in Annex 15 related to the QMS stems from Decision 49/1 of the forty-ninth meeting of the European Air Navigation Planning Group (EANPG/49) held in Paris from 27 to 29 November 2007 and was further developed by the Secretariat with the assistance of the AIS-AIMSG. It was noted that the proposal:

- a) clarifies the scope of the QMS to encompass all organizations involved in the data processing chain, from the point of origin/survey, through to the AIS and distribution of the data to the intended user;
- b) introduces a requirement for only one cyclic redundancy check (CRC) algorithm (instead of three) for all integrity classifications in the interests of harmonization;
- c) upgrades the provision of automated pre-flight information systems to a Standard;
- d) requires that States give due consideration to human factors issues associated with the integrity of information and take steps to mitigate any risks identified;
- e) requires the use of metadata to support the existing traceability requirements;
- f) clarifies the applicability of “major changes” with regard to information to be notified by AIRAC; and
- g) introduces editorial amendments aimed at improving consistency in the wording of the Standards and Recommended Practices (SARPs).

7.2 During its review of the proposed amendment, the meeting noted the following elements concerning Electronic AIPs .

- a) That the proposal to amend Annex 15 includes a recommendation to allow for the provision of an electronic aeronautical information publication (eAIP). It is considered that clear provisions and guidance are necessary to prevent proliferation of eAIP formats and that a standard look would simplify access by users. Accordingly, the proposal specifies that when the eAIP is provided, the eAIP product remain equivalent and synchronized with the paper AIP product.
- b) That the contact information in the AIP for designated authorities and responsible services has also been updated to remove telex numbers and include e-mail and website addresses.

- c) That the proposal supports the new digital environment where end users will increasingly visualize AIS information on computer screens with improved consistency, integrity, timeliness and usability. Producers of the eAIP will also benefit from efficiencies in production and distribution.

7.3 During its review of the implementation issues, the meeting noted the following:

- a) Implementation difficulties and cost implications concerning the proposals related to the QMS and use of automation enabling digital data exchange may be substantial, especially for States with little or no automation capabilities. However, it was noted that the proposal allows for automation enabling digital data exchange to be introduced in a progressive manner. In the long term, automation and the associated QMS should lead to efficiencies.
- b) The meeting noted that the implementation of the eAIP is expected to reduce production and distribution costs compared to the paper product. However, the meeting noted that the proposal would have cost implications for States that currently produce eAIPs which are not harmonized with Annex 15, Appendix 1.
- c) The meeting noted that the proposed changes to the NOTAM Format could imply moderate costs associated with software changes.
- d) The meeting also noted that the proposal related to e-TOD is expected to generally reduce implementation difficulties and costs mainly through the amendment of requirements for proposed Area 2.

8. Draft Conclusions/Decisions

8.1 The Task Force recorded its action in the form of Conclusions/Decisions

Number	Title
Draft Conclusion 5/1 :	<p>Draft Conclusion 5/1 – APIRG /15 Conclusions on AIS/MAP</p> <p><i>The meeting agreed that APIRG/15 Conclusions related to AIS/MAP (Conc. 15/33,15/34,15/35, 15/36,15/37,15/38, 15/39, 15/40, 15/41,15/42,15/43 and 15/44) are still valid for continuous follow-up action by States.</i></p>
Draft Conclusion 5/2 :	<p>Draft Conclusion 5/2- Updated list of AIS/MAP FASID Tables AIS-1 to AIS-8</p> <p><i>That AFI States should provide by September 2009, an updated list of the status of implementation of the ICAO Requirements in the AIS/MAP field on Table AIS-1 to Table AIS-8 in Part VIII of the FASID Table which will subsequently form the amendment proposal to the AFI FASID.</i></p>
Draft Conclusion 5/3 :	<p>Draft Conclusion 5/3 —Implementation of WGS-84 and electronic terrain and obstacle data</p> <p><i>That:</i></p> <ul style="list-style-type: none"> <i>a) the AFI Planning and Implementation Regional Group (APIRG) adopt the AIM Performance Objective “Implementation of WGS-84 and electronic terrain and obstacle data” as contained in the Performance Framework Form in the Appendix- A to this Report as its strategy for implementation.</i> <i>b) the proposed FASID Table at Attachment B be adopted for inclusion as a requirement in the AFI FASID Document 7474 Vol.II.</i> <i>c) that the adopted draft Conclusions in Appendix C emanating from the findings of the AFI Region e-TOD Seminar held in Casablanca, Morocco, from 1-3 April 2008 be reviewed for endorsement by APIRG.</i> <i>d) that the adopted draft AFI Region e-TOD Implementation strategy under Appendix-D be reviewed for adoption by APIRG .</i> <i>e) that the adopted terms of reference of the AFI Region e-TOD Working Group under Appendix-E be reviewed for adoption by APIRG.</i>
Draft Conclusion 5/4 :	<p>Draft Conclusion 5/4: Submission of WGS-84 Implementation Survey Questionnaires</p> <p><i>That States submit their responses to the Regional WGS-84 Implementation survey by 30 November 2009</i></p>
Draft Conclusion 5/5 :	<p>Draft Conclusion 5/5- Adoption of the Third AFI-CAD Meeting</p> <p><i>That APIRG would review and endorse the Report of the Third</i></p>

	<i>Meeting of the AFI Region Study Group on the Establishment of a Centralized AFI Region AIS Data base (AFI-CAD/Study Group/3.</i>
Draft Conclusion 5/6 :	<p>Draft Conclusion 5/6: Adoption of the AIS to AIM Transition Roadmap</p> <p><i>That:</i></p> <ul style="list-style-type: none"> <i>a) APIRG adopts the Roadmap as Guidance material to plan, manage and facilitate the global transition from AIS to AIM.</i> <i>b) by using the Roadmap, assist States in planning the scope and prioritizing projects and actions for the transition to AIM.</i>
Draft Conclusion 5/7 :	<p>Draft Conclusion 5/7: e-TOD implementation awareness campaigns</p> <p><i>Taking into consideration the adopted dates of applicability of E-TOD provisions introduced by AMDT 33 to Annex 15 and the resources required for the implementation of these new provisions, the States' AIS should take the lead and carry out awareness campaigns at national level to promote a better understanding of the planning and implementation issues related to E-TOD.</i></p>
Draft Conclusion 5/8 :	<p>Draft Conclusion 5/8: Development and management of a national e-TOD programme</p> <p><i>That States, in accordance with sound management principles and procedures, should:</i></p> <ul style="list-style-type: none"> <i>a) develop a framework and a detailed planning including priorities and timelines, for the implementation of a national E-TOD programme;</i> <i>b) adopt/follow a collaborative approach, involving all concerned parties, in the implementation of E-TOD provisions; and</i> <i>c) make an inventory of and evaluate the quality of existing terrain and obstacle data sources, and in the case of data collection, consider carefully the required level of details of collected terrain and obstacle data with particular emphasis on obstacle data and associated cost.</i>
Draft Conclusion 5/9 :	<p>Draft Conclusion 5/9: Coordination and exchange of experience for the implementation of e-tod requirements</p> <p><i>That Implementation of E-TOD provisions should be considered a global matter concerning all ICAO Regions, which thereby necessitates coordination and exchange of experience between States, ICAO and other national/international organizations and industry partners involved.</i></p>
Draft Conclusion 5/10 :	<p>Draft Conclusion 5/10: Coordination between states and data providers/ integrators for the provision of e-tod</p> <p><i>That Collaboration between States and data providers/integrators should be considered.</i></p>
Draft Conclusion	Draft Conclusion 5/11: Responsibility for the provision of e-Tod



<p>5/11 :</p>	<p><i>That States, while maintaining the responsibility for data quality and availability, should consider the extent to which provision of electronic terrain and obstacle data could be delegated to national geodetic Institutes/Agencies, based on Service Level Agreement (SLA) reflecting such delegation.</i></p>
<p>Draft Conclusion 5/12 :</p>	<p>Draft Conclusion 5/12: ANP requirements related to e-TOD</p> <p><i>That ICAO should develop an amendment to the basic Air Navigation Plans (ANP) for all ICAO Regions to include new E-TOD requirements and introduce a new table in the Facilities and Services Implementation Documents (FASIDs) in which detailed planning of E-TOD implementation by States together with an indication of the implementation timelines, are reflected.</i></p>
<p>Draft Conclusion 5/13 :</p>	<p>Draft Conclusion 5/13: Establishment of AFI region e-tod working group</p> <p><i>That with a view to, inter-alia, analysing the E-TOD requirements, developing a common understanding of these requirements and steering the planning and implementation process within the region, an AFI Region E-TOD Working Group be established as the way forward for the timely implementation of E-TOD through the proposed AFI Region E-TOD Implementation Strategy at Appendix D with the Terms of Reference at Appendix E.</i></p>

APPENDIX-A

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Fifth meeting of the AFI Region AIS/MAP Task Force
(Dakar, 11 - 12th May 2009)

List of Participants / Liste des participants				
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APPENDIX B

AIM PERFORMANCE OBJECTIVES

NATIONAL PERFORMANCE OBJECTIVE				
IMPLEMENTATION OF WGS-84 AND ELECTRONIC TERRAIN AND OBSTACLE DATA				
Benefits				
Environment	<ul style="list-style-type: none"> • none 			
Efficiency	<ul style="list-style-type: none"> • required by Performance Based Navigation • support approach and departure procedure design and implementation • improve aircraft operating limitations analysis • support aeronautical chart production and on-board databases 			
Safety	<ul style="list-style-type: none"> • improve situational awareness • support determination of emergency contingency procedures • support technologies such as ground proximity and minimum safe altitude warning systems 			
<i>Strategy</i> Short term (2010) <i>Medium term (2011 - 2015)</i>				
ATM OC COMPONENTS	TASKS	TIMEFRAME START-END	RESPONSIBILITY	STATUS
ATM CM	<p><i>Electronic terrain and obstacle data (eTOD)</i></p> <ul style="list-style-type: none"> • Share experience and resources in the implementation of eTOD through the establishment of an eTOD working group. 	2008-2011	APIRG States	
	<ul style="list-style-type: none"> • Report requirements and monitor implementation status of eTOD using a new AIS Table of the AFI FASID (Ref. Appendix B). • Develop a high level policy for the management of a national eTOD Programme. 	2009-ongoing	APIRG States	
		2008-2009	States	
ATM AUO	<p><i>WGS-84</i></p> <ul style="list-style-type: none"> • Report requirements and monitor implementation status of WGS-84 using the AIS-5 Table of the AFI FASID. 	Ongoing	APIRG States	
Link to GPIs	GPI-9: Situational awareness GPI-11: RNP and RNAV SIDs and STARs GPI-18: Aeronautical Information GPI-20: WGS-84 GPI-21: Navigation Systems			

APPENDIX C

PROPOSED FASID TABLE AIS-X — eTOD REQUIREMENTS

*EXPLANATION OF THE TABLE**Column*

- 1 Name of the State, territory or aerodrome for which electronic terrain and obstacle data (eTOD) are required with the designation of the aerodrome use:
- RS — international scheduled air transport, regular use
RNS — international non-scheduled air transport, regular use
RG — international general aviation, regular use
AS — international scheduled air transport, alternate use
- 2 Runway designation numbers
- 3 Type of each of the runways to be provided. The types of runways, as defined in Annex 14, Volume 1, Chapter I, are:
- NINST — non-instrument runway;
NPA — non-precision approach runway
PA1 — precision approach runway, Category I;
PA2 — precision approach runway, Category II;
PA3 — precision approach runway, Category III.
- 4 Requirement for the provision of terrain data for Area 1, shown by an ‘‘X’’ against the State or territory to be covered.
- 5 Requirement for the provision of terrain data for Area 2 (TMA), shown by an ‘‘X’’ against the aerodrome to be covered.
- 6 Requirement for the provision of terrain data for Area 2 (45 Km radius from the ARP), shown by an ‘‘X’’ against the aerodrome to be covered.
- 7 Requirement for the provision of Terrain data for Area 3, shown by an ‘‘X’’ against the aerodrome to be covered.
- 8 Requirement for the provision of Terrain data for Area 4, shown by an ‘‘X’’ against the runway threshold to be covered.
- 9 Requirement for the provision of Obstacle data for Area 1, shown by an ‘‘X’’ against the State or territory to be covered.
- 10 Requirement for the provision of Obstacle data for Area 2 (TMA), shown by an ‘‘X’’ against the aerodrome to be covered.
- 11 Requirement for the provision of Obstacle data for Area 2 (45 Km radius from the ARP), shown by an ‘‘X’’ against the aerodrome to be covered.
- 12 Requirement for the provision of Obstacle data for Area 3, shown by an ‘‘X’’ against the aerodrome to be covered.
- 13 Remarks (timetable for implementation)

Note.— For columns 4 to 12 use the following symbols:

X — Required but not implemented
 XI — Required and implemented

STATE, TERRITORY OR AERODROME FOR WHICH eTOD IS REQUIRED			TERRAIN DATA REQUIRED					OBSTACLE DATA REQUIRED			REMARKS	
CITY/AERODROME	RWY No	RWY TYPE	Area 1	Area 2		Area 3	Area 4	Area 1	Area 2			Area 3
				TMA	45 Km				TMA	45 Km		
1	2	3	4	5	6	7	8	9	10	11	12	13
STATE X			X					X				
(ABCD) City Y/AD Z				X		X			X		X	
RS	11 29	NPA PA1										

— END —

APPENDIX-D**Draft Conclusion 5/7: E-TOD IMPLEMENTATION AWARENESS CAMPAIGNS**

Taking into consideration the adopted dates of applicability of E-TOD provisions introduced by AMDT 33 to Annex 15 and the resources required for the implementation of these new provisions, the States' AIS should take the lead and carry out awareness campaigns at national level to promote a better understanding of the planning and implementation issues related to E-TOD.

Draft Conclusion 5/8: DEVELOPMENT AND MANAGEMENT OF A NATIONAL E-TOD PROGRAMME

That: States, in accordance with sound management principles and procedures, should:

- a) develop a framework and a detailed planning including priorities and timelines, for the implementation of a national E-TOD programme;
- b) adopt/follow a collaborative approach, involving all concerned parties, in the implementation of E-TOD provisions; and
- c) make an inventory of and evaluate the quality of existing terrain and obstacle data sources, and in the case of data collection, consider carefully the required level of details of collected terrain and obstacle data with particular emphasis on obstacle data and associated cost.

Draft Conclusion 5/9: COORDINATION AND EXCHANGE OF EXPERIENCE FOR THE IMPLEMENTATION OF E-TOD REQUIREMENTS

That: Implementation of E-TOD provisions should be considered a global matter concerning all ICAO Regions, which thereby necessitates coordination and exchange of experience between States, ICAO and other national/international organizations and industry partners involved.

Draft Conclusion 5/10: COORDINATION BETWEEN STATES AND DATA PROVIDERS/INTEGRATORS FOR THE PROVISION OF E-TOD

That: Collaboration between States and data providers/integrators should be considered.

Draft Conclusion 5/11: RESPONSIBILITY FOR THE PROVISION OF E-TOD

That: States, while maintaining the responsibility for data quality and availability, should consider the extent to which provision of electronic terrain and obstacle data could be delegated to national geodetic Institutes/Agencies, based on Service Level Agreement (SLA) reflecting such delegation.

Draft Conclusion 5/12: ANP REQUIREMENTS RELATED TO E-TOD

That: ICAO should develop an amendment to the basic Air Navigation Plans (ANP) for all ICAO Regions to include new E-TOD requirements and introduce a new table in the Facilities and Services Implementation Documents (FASIDs) in which detailed planning of E-TOD implementation by States together with an indication of the implementation timelines, are reflected.

Draft Conclusion 5/13: ESTABLISHMENT OF AFI REGION E-TOD WORKING GROUP

That with a view to, inter-alia, analysing the E-TOD requirements, developing a common understanding of these requirements and steering the planning and implementation process within the region, an AFI Region E-TOD Working Group be established as the way forward for the timely implementation of E-TOD through the proposed AFI Region E-TOD Implementation Strategy at Appendix A with the Terms of Reference at Appendix B.

APPENDIX-E**DRAFT AFI REGION E-TOD IMPLEMENTATION STRATEGY**

Considering:

- a) the new provisions introduced by Amendment 33 to Annex 15 related to E-TOD; and
- b) the guidance material contained in Doc 9881 (Guidelines for electronic Terrain, Obstacle and Aerodrome Mapping Information); and

Recognizing that:

- i. significant safety benefits to international civil aviation will be provided by in-flight and ground-based applications that rely on quality electronic Terrain and Obstacle Data; and
- ii. the implementation of E-TOD requirements is a challenging, costly, and cumbersome task of cross-domain nature;

The Seminar proposed an AFI Region implementation strategy based on the following adopted criteria as detailed below:

1. E-TOD implementation should be in compliance with ICAO provisions contained in Annex 15 and Doc 9881;
2. E-TOD implementation should be based on national plans/roadmaps;
3. E-TOD implementation should be managed by each State as a national E-TOD programme supported by necessary resources, a high level framework and a detailed national plan including priorities and timelines for the implementation of the programme;
4. States should adopt/follow a collaborative approach involving all concerned parties in the implementation of E-TOD provisions and establish a multi-disciplinary team defining clearly the responsibilities and roles of the different Administrations within and outside the Civil Aviation Administration in the implementation process (AIS, Aerodromes, Military, National Geographic and Topographic Administrations/Agencies, etc);
5. E-TOD requirements should be analyzed and a common understanding for the Implementation of these requirements developed;
6. States should make an inventory of and evaluate the quality of existing terrain and obstacle data sources and in the case of data collection, consider carefully the required level of details of collected terrain and obstacle data with particular emphasis on obstacle data and associated cost;
7. States should carry out theoretical studies of candidate techniques for data acquisition (photogrammetry, LIDAR, IFSAR, etc) based on a Cost-Benefit Analysis and supported by case study for a representative aerodrome;

8. in the development of their E-TOD programme, States should take into consideration the requirements for update/maintenance of data, especially the obstacle data;
 9. States, while maintaining the responsibility for data quality and availability, should consider the extent to which the provision of electronic terrain and obstacle data could be delegated to national geodetic Institutes/Agencies, based on Service Level Agreement reflecting such delegation. Collaboration between States and data providers/integrators should also be considered;
 10. ICAO and States should undertake awareness and training programmes to promote and expedite E-TOD implementation;
 11. implementation of E-TOD provisions should be considered a global matter, which necessitates coordination and exchange of experience between States, ICAO and other national/international organizations and industry partners involved;
 12. to the extent possible, States should work co-operatively especially with regard to the cross-border issue, for the sake of harmonization and more efficient implementation of E-TOD; and
 13. States encountering difficulties in the implementation of E-TOD may seek assistance (individually or collectively) from ICAO, through a TCB project, and/or from other States.
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APPENDIX -F**AFI REGION ELECTRONIC TERRAIN AND OBSTACLE DATA WORKING GROUP
(E-TOD WG)****A) TERMS OF REFERENCE**

With a view to harmonize, coordinate and support E-TOD implementation activities on a regional basis, the AFI Region E-TOD Working Group shall:

- 1) analyze E-TOD requirements and develop a common understanding of these requirements (clarify the needs in terms of data format, temporality, cross-border harmonization and develop associated guidelines as required);
- 2) recommend the way forward for timely implementation of E-TOD;
- 3) adopt and maintain an AFI Region E-TOD implementation strategy;
- 4) guide the development and support the roll-out of an awareness campaign for E-TOD implementation within AFI States;
- 5) carry out a theoretical study of candidates techniques for electronic Terrain and Obstacle Data acquisition including a cost benefit analysis;
- 6) develop an AFI Region business case for E-TOD implementation;
- 7) carry out a study case for a representative aerodrome from the AFI Region;
- 8) assist States in the development of mandate/policy pertaining to the implementation of E-TOD requirements;
- 9) develop an action plan for the implementation of E-TOD requirements in the AFI Region;
- 10) monitor the cost-effectiveness and timely implementation of E-TOD requirements in the AFI Region;
- 11) monitor and review latest developments pertaining to E-TOD; and
- 12) develop its work programme within the scope of its Terms of Reference.

B) COMPOSITION

The AFI Region E-TOD Working Group will be composed of Experts nominated by the AFI Region States and ANSP that participated in the AFI Region E-TOD Seminar with the State of Morocco being the Rapporteur. Other representatives from industry and user organizations having a vested interest in the aeronautical services and E-TOD in particular, could participate in the work of this Working Group

C) WORKING ARRANGEMENTS

The AFI Region E-TOD Working Group shall report to the AIS/MAP Task Force established under the AFI Planning Implementation Regional Group (APIRG).

The work of the AFI E-TOD Working Group shall be carried out mainly through exchange of correspondence (email, facsimile, Tel, etc) between its Members. The Working Group shall meet as required and at least once in every year prior to an APRIG Meeting. The convening of the Working Group meetings should be initiated by the established AIS/MAP Task Force Secretariat based on the need to address AIS/MAP deficiencies in the AFI Region.

APPENDIX-G

**STATUS OF IMPLEMENTATION OF WGS-84 IN THE AFI REGION
AS OF 24 FEBRUARY 2009**

**ETAT DE MISE EN OEUVRE DU WGS-84 DANS LA REGION AFI
AU 24 FÉVRIER 2009**

STATE ETAT	Implemented in FULL <i>Mise en oeuvre complète</i>	Implemented in PART <i>Mise en oeuvre partielle</i>	Under way (Completion 2009) <i>En cours (Finition 2009)</i>	Planned date to Start <i>Date prévue de démarrage</i>	No known plan (or no reply) <i>Pas de renseignements</i>
Algeria		!			
Angola		!			
Benin	!				
Botswana		!			
Burkina Faso	!				
Burundi	!				
Cameroon	!				
Cape Verde	!				
Central African Republic	!				
Chad	!				
Comoros	!				
Congo Brazzaville	!				
Côte d'Ivoire	!				
Congo DR of		!			
Djibouti		!			
Egypt	!				
Equatorial Guinea	!				
Eritrea		!			
Ethiopia		!			
Gabon	!				
Gambia	!				
Ghana		!			
Guinea Conakry		!			
Guinea-Bissau		!			
Kenya		!			
Liberia		!			
Libyan Arab Jamahiriya		!			
Madagascar	!				
Malawi		!			
Mali	!				
Mauritania	!				
Mauritius		!			
Morocco	!				
Mozambique		!			
Namibia		!			
Niger	!				
Nigeria		!			
Sao Tome & Principe	!				
Senegal	!				
Seychelles		!			
Sierra Leone		!			

STATE ETAT	Implemented in FULL <i>Mise en oeuvre complète</i>	Implemented in PART <i>Mise en oeuvre partielle</i>	Under way (Completion 2009) <i>En cours (Finition 2009)</i>	Planned date to Start <i>Date prévue de démarrage</i>	No known plan (or no reply) <i>Pas de renseignements</i>
Somalia					!
South Africa	!				
Sudan		!			
Swaziland		!			
Togo	!				
Tunisia	!				
Uganda		!			
United Republic of Tanzania		!			
Zambia		!			
Zimbabwe		!			

APPENDIX-H

AIS/MAP PERFORMANCE OBJECTIVES

ELIMINATION OF IDENTIFIED AIS/MAP DEFICIENCIES				
(implementation of WGS-84 coordinates, publication of aeronautical charts and timely publication and updating of AIS/MAP documents, i.e. NOTAMs, AIPs, AICs, etc.)				
Benefits				
Efficiency	<ul style="list-style-type: none"> improved collaborative decision-making through sharing aeronautical data information 			
Safety	<ul style="list-style-type: none"> enhance safety by timely exchange air safety data, i.e. electronically and wider distribution of such data 			
<i>Strategy</i> <i>Short term (2010)</i> <i>Medium term (2011 - 2015)</i>				
ATM OC COMPONENTS	TASKS	TIMEFRANCE START-END	RESPONSIBILITY	STATUS
AIS/MAP	<ul style="list-style-type: none"> publication of relevant aeronautical charts. 	2008 - 2009		
	<ul style="list-style-type: none"> publication of WGS-84 coordinates for en-route waypoints and use for GNSS coordinates for terminal approaches and departure procedures 	2008 - 2009		
	<ul style="list-style-type: none"> publication of AIPs, NOTAMs and AICs using standards formats. 			
	<ul style="list-style-type: none"> States concerned to develop action plan to eliminate the deficiencies 	2008 - 2009		
Linkage to GPIs	GPI/18: Aeronautical information; GPI/20: WGS-84			