

AFI e-TOD WG/2- REPORT

INTERNATIONAL CIVIL AVIATION ORGANIZATION

**REPORT OF THE SECOND MEETING OF THE AFI REGION
ELECTRONIC TERRAIN AND OBSTACLE DATA
WORKING GROUP (AFI e-TOD WG/2)**

(Dakar, Senegal, 19 July 2011)

The views expressed in this Report should be taken as those of the e-TOD Working Group and not of the Organization. This Report will, however, be submitted to the APIRG and any formal action taken will be published in due course as a Supplement to the Report.

Prepared by the Secretary of the e-TOD Working Group

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontier or boundaries.

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1. PLACE AND DURATION

- 1.1 The Second Meeting of the AFI Region Electronic Terrain and Obstacle Data Working Group (e-TOD WG/2) was held on 19 July 2011 at the new ICAO Office Building in Dakar (Yoff), Senegal.

2. OPENING

2.1 The ICAO Regional Director Mr. Mam Sait Jallow opened the meeting on behalf of the President of ICAO the Secretary General of ICAO and the ICAO Regional Directors Nairobi, Cairo and Paris, for the Second meeting of the AFI Region e-TOD Working Group being organized by the Regional Offices in Dakar and Nairobi under the aegis of ICAO pursuant to Conclusions 17/92 of the Seventeenth APIRG Meeting (APIRG/17) held in Ouagadougou, Burkina Faso from 2-6 August 2010.

2.2 He announced that safety of civil aviation, which is considered as a continuous challenge, should be given the utmost importance and priority. In this regard, the implementation of e-TOD would improve safety. He highlighted the direct link of e-TOD with the Controlled Flight into Terrain (CFIT), emphasizing that the implementation of e-TOD requires knowledgeable and skilled personnel and that this could be achieved only with appropriate training. He encouraged the coordination and cooperation between AFI States, underlined the role of the ICAO WACAF Regional Office in this respect and ensured the continuous support to the ICAO WACAF Regional Office to APIRG activities.

3. ATTENDANCE

3.1 The meeting was attended by a total of 20 participants, from 9 ICAO Contracting States and 1 International Aviation Agency. The list of participants is at **Attachment 1-A** to the Report.

4. OFFICERS AND SECRETARIAT

4.1 Mr. George A.Y. Baldeh, RO/AIM, was the Secretary of the meeting.

5. LANGUAGE

5.1 The discussions were conducted in English. Documentation was issued in English.

6. AGENDA

6.1 The following Agenda was adopted:

- Agenda Item 1:** Adoption of the Provisional Agenda
- Agenda Item 2:** Follow up on APIRG/17 Conclusions/ Decisions related to e-TOD
- Agenda Item 3:** Review and analysis of e-TOD requirements.
- Agenda Item 4:** ANP/FASID Requirements related to e-TOD.
- Agenda Item 5:** AFI Region e-TOD implementation Strategy/Action Plan.
- Agenda Item 6:** Future work program
- Agenda Item 7:** Any other business

7. CONCLUSIONS AND DECISIONS - DEFINITION

7.1 The APIRG records its actions in the form of Conclusions and Decisions with the following significance:

- a) Conclusions deal with matters, that according to the Group's terms of reference, merit directly the attention of States, or on which further action will be initiated by the Secretary in accordance with established procedures; and
- b) Decisions relate solely to matters dealing with the internal working arrangements of the Group and its Sub-Group ;

8. LIST OF CONCLUSIONS AND DECISIONS

8.1 DRAFT CONCLUSIONS:

Draft Conclusion 2/1 : All the APIRG /17 Conclusions pertaining to e-TOD

Draft Conclusion 2-2: Proposal for amendment to the AFI Basic ANP (Doc 7474) related to e-TOD

Draft Conclusion 2-3: SIP for AFI Region e- TOD implementation Seminar/Workshop

That,

- a) For the sake of an efficient and harmonized implementation of e-TOD, ICAO assist AFI States at the National Level and, to the extent possible co-operatively, organize a Regional SIP Seminar/Workshop to raise awareness campaigns and training programs to promote and expedite the process of e-TOD implementation

- b) AFI States to participate actively in this Workshop

Draft Conclusion 2-4: Provision of updates to the proposed AFI Region e-TOD implementation timelines under Appendix 5A of Agenda Item 5

That,

AFI States review the proposed AFI Region e-TOD implementation timelines under Appendix 5A of Agenda Item 5 and send their updates/comments to the ICAO WACAF and ESAF Regional Offices before 31 October 2011.

Draft Decision 2-5 : Future Work Program

That in the Future, the remaining e-TOD tasks which have not yet been completed will be included in the Work program of the AFI AIM Task Force.

PART II : REPORT ON AGENDA ITEMS

Report on Agenda Item 1: Adoption of the Provisional Agenda

- 1.1 The meeting reviewed and adopted the provisional agenda as reflected in Paragraph 6 of the history of the meeting.
- 1.2 The meeting agreed unanimously that Mr. N'Diaga Basse, Dakar AERODROME Services Manager acts as Chairperson of the Working Group.

Report on Agenda Item 2: Follow up on APIRG/17 Conclusions/ Decisions related to e-TOD

- 2.1 The meeting reviewed and noted the relevant Conclusions and Decisions of the APIRG/17 Meeting related to e-TOD Implementation and agreed on the adopted follow-up actions to be taken by concerned parties including the deliverables and target dates of implementation pursuant to State letter ref. T2/7-0476 of 16 June 2011 as per Appendix-A to Agenda Item2.
- 2.2 The Meeting then agreed on the following Draft Conclusion

Draft Conclusion 2/1: That, all the APIRG /17 Conclusions pertaining to e-TOD implementation would be retained with an extension of the deadline date for States to provide follow-up action in pursuance to ICAO WACAF State Letter T2/7-0476, not later than 31 October 2011.

APPENDIX-2A

REVISED AND CONSOLIDATED APIRG/17 CONCLUSIONS AND DECISIONS IN THE AIM FIELD

Conclusions/Decisions No. Strategic Objectives	Title of Conclusions/Decisions	Text of Conclusions/Decisions	Follow-up action by the Secretariat	To be initiated by	Deliverable/Intended Outcome	Target Dates for follow up action by the Secretariat	Status of follow up action by the Secretariat
<p>CONCLUSION 17/86:</p> <p><u>TO BE MAINTAINED AND CONSOLIDATED WITH CON.17/97</u></p>	<p>TRANSITION FROM AIS TO AIM</p>	<p>That, recognizing the limitations of the current AIS, which does not meet the new global ATM system requirements envisioned by the ATM operational concept, and taking into consideration the ICAO roadmap for the transition from AIS to AIM:</p> <p>a) States that have not yet done so, are urged to develop national plans to implement the transition from AIS to AIM and send them to the ICAO ESAF and WACAF Regional Offices before 31 December 2010; and</p> <p>b) AFI AIM implementation task force monitor the progress of transition from AIS to AIM in the AFI Region and support regional and national planning efforts.</p>		<p>WACAF</p>	<p>Collaborate with States in the development of performance goals for the transition from AIS to AIM in the AFI Region and identify achievable milestones.</p>	<p>7 July 2011 31 October 2011</p>	<p>On-going</p>

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		<p>c) That, States adopt the roadmap as guidance material to plan, manage and facilitate the global transition from AIS to AIM within the AFI Region including planning of the scope and prioritizing projects and actions for the transition to AIM.</p>					
<p>CONCLUSION 17/88:</p> <p>Integrate in AFI e-TOD Implementation Strategy</p>	<p>e-TOD CHECKLIST</p>	<p>That, States be encouraged to use the e-TOD checklist at Appendix 3.6C to this report in order to assist them in the process of planning and implementation of the e-TOD provisions.</p>	<p>State letter T2/7-0476 of 16 June 2011</p> <p>State Letter to T17/6.13 of 26 June 2011 to AFI AIM /TF members</p>	<p>WACAF</p>	<p>Planning and implementation of the e-TOD provisions</p>	<p>7 July 2011 31 October 2011</p>	<p>On-going</p>

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<p>CONCLUSION 17/89</p> <p>Integrate in AFI e-TOD Implementation Strategy</p>	<p>ADOPTION OF THE e-TOD IMPLEMENTATION PLAN TEMPLATE AS A REGIONAL MODEL</p>	<p>That states be encouraged to use the:</p> <p>a) e-TOD implementation plan template at Appendix 3.6D to this report as regional model in order to assist them in the process of planning and implementation of the e-TOD provisions.</p> <p>b) national e-TOD implementation plan at Appendix 3.6E to this report as a sample when developing their national e-TOD plans</p>	<p>State letter T2/7-0476 of 16 June 2011</p> <p>State Letter to T17/6.13 of 26 June 2011 to AFI AIM /TF members</p>	<p>ESAF for ESAF States</p> <p>WACAF for WACAF States</p>	<p>Development of national e-TOD implementation plan</p>	<p>7 July 2011 31 October 2011</p>	<p>On-going</p>
<p>CONCLUSION 17/90:</p> <p>Integrate in AFI e-TOD Implementation</p>	<p>IMPLEMENTATION OF WGS-84 AND ELECTRONIC TERRAIN AND OBSTACLE DATA</p>	<p>That:</p> <p>a) States adopt the revised AIM performance objective “Implementation of WGS-84 and Electronic Terrain and Obstacle Data” as contained in the Performance Framework Form in the Appendix 3.6F to this report, as a strategy for implementation;</p> <p>b) The proposed FASID table at</p>	<p>State letter T2/7-0476 of 16 June 2011</p> <p>State Letter to T17/6.13 of 26 June 2011 to AFI AIM /TF members</p>	<p>ESAF for ESAF States</p> <p>WACAF for WACAF States</p>	<p>Implementation of WGS-84 and Electronic Terrain and Obstacle Data as contained in the Performance Framework Form in the Appendix 3.6F to</p>	<p>7 July 2011 31 October 2011</p>	<p>On-going</p>

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Conclusions/Decisions No. Strategic Objectives	Title of Conclusions/Decisions	Text of Conclusions/Decisions	Follow-up action by the Secretariat	To be initiated by	Deliverable/Intended Outcome	Target Dates for follow up action by the Secretariat	Status of follow up action by the Secretariat
Strategy		<p>Appendix F be adopted for inclusion as a requirement in the AFI FASID (Document 7474, Vol. II);</p> <p>c) The AFI Region e-TOD implementation strategy under Appendix 3.6G to this report be adopted for implementation; and</p> <p>d) The revised Terms of Reference of the AFI Region e-TOD working group are at Appendix 3.6H to this report be adopted.</p>			APIRG/17 Report		
<p>CONCLUSION 17/91:</p> <p>Integrate in AFI e-TOD</p>	e-TOD IMPLEMENTATION AWARENESS CAMPAIGNS	That, 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 and training programmes.	<p>State letter T2/7-0476 of 16 June 2011</p> <p>State Letter to T17/6.13 of 26 June 2011 to AFI AIM /TF members</p>	<p>ESAF for ESAF States</p> <p>WACAF for WACAF States</p>	awareness campaigns at national level to promote a better understanding of the planning and implementation	<p>7 July 2011</p> <p>31 October 2011</p>	On-going

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Implementation Strategy					n issues related to e-TOD		
CONCLUSION 17/92: <u>TO BE MAINTAINED</u>	DEVELOPMENT AND MANAGEMENT OF A NATIONAL e-TOD PROGRAMME	<p>That, States, in accordance with sound management principles and procedures, should:</p> <p>a) Develop a framework and a detailed planning including priorities and timelines, for the implementation of a national e-TOD programme;</p> <p>b) Adopt/follow a collaborative approach, involving all concerned parties, in the implementation of e-TOD provisions; and</p> <p>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.</p>	<p>State letter T2/7-0476 of 16 June 2011</p> <p>State Letter to T17/6.13 of 26 June 2011 to AFI AIM/TF members</p>	<p>ESAF for ESAF States</p> <p>WACAF for WACAF States</p>	<p>Collaborative approach, in the implementation of e-TOD provisions</p>	<p>7 July 2011 31 October 2011</p>	<p>On-going</p>

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<p>CONCLUSION 17/93:</p> <p>Integrate in AFI e-TOD Implementation Strategy</p>	<p>COORDINATION BETWEEN STATES AND DATA PROVIDERS/INTEGRATORS FOR THE PROVISION OF e-TOD AND EXCHANGE OF EXPERIENCE FOR THE IMPLEMENTATION OF e-TOD REQUIREMENTS</p>	<p>That:</p> <p>a) Collaboration between States and data providers/integrators should be considered in the process of e-TOD provision; and</p> <p>b) 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.</p>	<p>State letter T2/7-0476 of 16 June 2011</p> <p>State Letter to T17/6.13 of 26 June 2011 to AFI AIM /TF members</p>	<p>ESAF for ESAF States</p> <p>WACAF for WACAF States</p>	<p>Coordination and exchange of experience between States, ICAO and other national/international organizations and industry partners</p>	<p>7 July 2011 31 October 2011</p>	<p>On-going</p>

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Conclusions/Decisions No. Strategic Objectives	Title of Conclusions/Decisions	Text of Conclusions/Decisions	Follow-up action by the Secretariat	To be initiated by	Deliverable/Intended Outcome	Target Dates for follow up action by the Secretariat	Status of follow up action by the Secretariat
<p>CONCLUSION 17/94:</p> <p>Integrate in AFI e-TOD Implementation Strategy</p>	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.	<p>State letter T2/7-0476 of 16 June 2011</p> <p>State Letter to T17/6.13 of 26 June 2011 to AFI AIM /TF members</p>	<p>ESAF for ESAF States</p> <p>WACAF for WACAF States</p>	Consideration of 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)	<p>7 July 2011</p> <p>31 October 2011</p>	On-going
<p>CONCLUSION 17/95:</p> <p>Integrate in AFI e-TOD Implement</p>	PROVISION OF FINANCIAL RESOURCES AND ASSISTANCE FOR THE IMPLEMENTATION OF e- TOD	<p>That:</p> <p>a) 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</p>	<p>State letter T2/7-0476 of 16 June 2011</p> <p>State Letter to T17/6.13 of 26 June 2011 to AFI AIM /TF members</p>	<p>ESAF for ESAF States</p> <p>WACAF for WACAF States</p>	Establishment of a national e-TOD program supported by necessary resources, and a high	<p>7 July 2011</p> <p>31 October 2011</p>	On-going

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ation Strategy		programme; and b) States encountering difficulties in the implementation of e-TOD may seek assistance (individually or collectively) from ICAO and/or other States.			level framework		
CONCLUSION 17/97: Consolidate as part of Conc. 17/86	ADOPTION OF THE AIS TO AIM TRANSITION ROADMAP	That, States adopt the roadmap as guidance material to plan, manage and facilitate the global transition from AIS to AIM within the AFI Region including planning of the scope and prioritizing projects and actions for the transition to AIM.	State letter T2/7-0476 of 16 June 2011 State Letter to T17/6.13 of 26 June 2011 to AFI AIM /TF members	ESAF for ESAF States WACAF for WACAF States	Adoption of the roadmap as guidance material to plan, manage and facilitate the global transition from AIS to AIM within the AFI Region	7 July 2011 31 October 2011	On-going

Report on Agenda Item 3: Review and analysis of e-TOD requirements.

3.1 The meeting noted the proposals made are considered to provide a simple approach to removing the ambiguity that exists in the currently defined requirements of ICAO that have been adopted for inclusion in Eurocontrol's release of ED-98() / DO-276().

3.2 The meeting noted the inclusion of the propositions for amendment included in Annex A in the proposed amendment 37 to ICAO Annex 15. The meeting endorsed the proposals for amendment included in Annex A to DP/4 and supported the inclusion of the propositions for amendment included in Annex A in the proposed amendment 37 to ICAO Annex 15 (Appendix-3 A refers).

Appendix-3A to Agenda Item-3

CHAPTER 10. ELECTRONIC TERRAIN AND OBSTACLE DATA

Note.— Electronic terrain and obstacle data is intended to be used in the following air navigation applications:

- a) ground proximity warning system with forward looking terrain avoidance function and minimum safe altitude warning (MSAW) system;*
- b) determination of contingency procedures for use in the event of an emergency during a missed approach or take-off;*
- c) aircraft operating limitations analysis;*
- d) instrument procedure design (including circling procedure);*
- e) determination of en-route “drift-down” procedure and en-route emergency landing location;*
- f) advanced surface movement guidance and control system (A-SMGCS); and*
- g) aeronautical chart production and on-board databases.*

The data may also be used in other applications such as flight simulator and synthetic vision systems, and may assist in determining the height restriction or removal of obstacles that pose a hazard to air navigation.

10.1 Coverage areas and requirements for data provision

10.1.1 The coverage areas for sets of electronic terrain and obstacle data shall be specified as:

- Area 1: the entire territory of a State;
- Area 2: within the vicinity of an aerodrome, sub-divided as follows;
 - Area 2a: a rectangular area around a runway ~~that comprises~~ extending to 250 m either side of the runway ~~strip~~ extended centre line and extending before the threshold and beyond the end of the runway or stopway for a distance of ~~at least~~ 250m. Area 2a shall be extended so as to fully include ~~plus~~ any clearway(s) that exists.

Note.— See Annex 14, Volume I, Chapter 3 for dimensions for runway strip.

- Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 150 km and a splay of 15% to each side;

Note.— Where, for example as a result of terrain, flight operations are required to turn and do not operate along the extended centre line of the runway, Area 2b may be aligned such that it follows the planned flight paths.

- Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a; and
- Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest;
- Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area.
- Area 4: The area extending 900 m prior to the runway threshold and 60 m each side

of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.

Note.— See Appendix 8 for descriptions and graphical illustrations of the coverage areas.

10.1.2 Recommendation. — *Where the terrain at a distance greater than 900 m (3 000 ft) from the runway threshold is mountainous or otherwise significant, the length of Area 4 should be extended to a distance not exceeding 2 000 m (6 500 ft) from the runway threshold.*

10.1.3 Electronic terrain data shall be provided for Area 1. The obstacle data shall be provided for obstacles in Area 1 higher than 100 m above ground.

10.1.4 From 12 November 2015, at aerodromes regularly used by international civil aviation, electronic obstacle data shall be provided for all obstacles within Area 2 that are assessed as being a hazard to air navigation.

10.1.5 From 12 November 2015, at aerodromes regularly used by international civil aviation electronic ~~terrain and~~ obstacle data shall be provided **in accordance with Appendix 8, Figure A8-2**, for:

- a) Area 2a, for those obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 8;
- b) penetrations of the take-off flight path area obstacle identification surfaces; and
- c) penetrations of the aerodrome obstacle limitation surfaces.

Note.— Take-off flight path area obstacle identification surfaces are specified in Annex 4, 3.8.2 Aerodrome obstacle limitation surfaces are specified in Annex 14, Volume 1, Chapter 4.

10.1.6 From 12 November 2015, at aerodromes regularly used by international civil aviation, electronic terrain data shall be provided **in accordance with Appendix 8, Figure A8-1** for:

- a) Area 2a;
- b) The take-off flight path area; and
- c) An area bounded by the lateral extents of the aerodrome obstacle limitation surfaces.

10.1.67 Recommendation.— At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data should be provided for Areas 2b, 2c and 2d for obstacles and terrain that penetrate the relevant ~~obstacle~~ data collection surface specified in Appendix 8, except that data need not be collected for obstacles less than a height of 3m above ground in Area 2b and less than a height of 15m above ground in Area 2c.

10.1.78 Recommendation.— *At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data should be provided for Area 3 for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 8, Figure A8-3.*

10.1.89 At aerodromes regularly used by international civil aviation, electronic terrain

and obstacle data shall be provided for Area 4, in accordance with Figure A8-4, for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 8, for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters.

Note.— ~~Area 4 terrain data and Area 2 obstacle data are normally sufficient to support the production of the Precision Approach Terrain Chart — ICAO. When more detailed obstacle data is required for Area 4, this may be provided in accordance with the Area 4 obstacle data requirements specified in Appendix 8, Table A8-2. Guidance on appropriate obstacles to be provided through aeronautical information for this chart is given in the Aeronautical Chart Manual (Doc 8697).~~

10.1.9~~10~~ **Recommendation.**— *Where additional electronic obstacle or terrain data is collected to meet other aeronautical requirements, the obstacle and terrain data sets should be expanded to include these additional data.*

10.1.1~~10~~ **Recommendation.**— *Arrangements should be made for the coordination of providing Area 2 electronic terrain and obstacle data for adjacent aerodromes where their respective coverage Areas overlap to assure that the data for the same obstacle or terrain is correct.*

10.1.1~~2~~ **Recommendation.**— *At those aerodromes located near territorial boundaries, arrangements should be made among States concerned to share Area 2 electronic terrain and obstacle data.*

10.2 Terrain data set — content, numerical specification and structure

10.2.1 A terrain data set shall contain digital sets of data representing terrain surface in the form of continuous elevation values at all intersections (points) of a defined grid, referenced to common datum. A terrain grid shall be angular or linear and shall be of regular or irregular shape.

Note.— *In regions of higher latitudes, latitude grid spacing may be adjusted to maintain a constant linear density of measurement points.*

10.2.2 Sets of electronic terrain data shall include spatial (position and elevation), thematic and temporal aspects for the surface of the Earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, permanent ice and snow, and excluding obstacles. In practical terms, depending on the acquisition method used, this shall represent the continuous surface that exists at the bare Earth, the top of the canopy or something in-between, also known as “first reflective surface”.

10.2.3 In terrain data sets, only one feature type, i.e. terrain, shall be provided. Feature attributes describing terrain shall be those listed in Table A8-3. The terrain feature attributes listed in Table A8-3 represent the minimum set of terrain attributes, and those annotated as mandatory shall be recorded in the terrain data set.

10.2.4 Electronic terrain data for each area shall conform to the applicable numerical requirements in Appendix 8, Table A8-1.

10.3 Obstacle data set — content, numerical specification and structure

10.3.1. Obstacle data shall comprise the digital representation of the vertical and horizontal extent of the obstacle. Obstacles shall not be included in terrain data sets. Obstacle data elements are features that shall be represented in the data sets by points, lines or polygons.

10.3.2 In an obstacle data set, all defined obstacle feature types shall be provided and each of them shall be described according to the list of mandatory attributes provided in Appendix 8, Table A8-4.

Note.— By definition, obstacles can be fixed (permanent or temporary) or mobile. Specific attributes associated with mobile (feature operations) and temporary types of obstacles are annotated in Appendix 8, Table A8-4, as optional attributes. If these types of obstacles are to be provided in the data set, appropriate attributes describing such obstacles are also required.

10.3.3 Electronic obstacle data for each area shall conform to the applicable numerical requirements in Appendix 8, Table A8-2.

10.4 Terrain and obstacle data product specifications

10.4.1 To allow and support the interchange and use of sets of electronic terrain and obstacle data among different data providers and data users, the ISO 19100 series of standards for geographic information shall be used as a general data modelling framework.

10.4.2 A comprehensive statement of available electronic terrain and obstacle data sets shall be provided in the form of terrain data product specifications as well as obstacle data product specifications on which basis air navigation users will be able to evaluate the products and determine whether they fulfil the requirements for their intended use (application).

Note.— ISO Standard 19131 specifies the requirements and outline of data product specifications for geographic information.

10.4.3 Each terrain data product specification shall include an overview, a specification scope, data product identification, data content and structure, reference system, data quality, data capture, data maintenance, data portrayal, data product delivery, additional information, and metadata.

10.4.4 The overview of terrain data product specification or obstacle data product specification shall provide an informal description of the product and shall contain general information about the data product. Specification of terrain data may not be homogenous across the whole data product but may vary for different parts of the data sets. For each such subset of data, a specification scope shall be identified. Identification information concerning both terrain and obstacle data products shall include the title of the product; a brief narrative summary of the content, purpose, and spatial resolution if appropriate (a general statement about the density of spatial data); the geographic area covered by the data product; and supplemental information.

10.4.5 Content information of feature-based terrain data sets or of feature-based obstacle data sets shall each be described in terms of an application schema and a feature catalogue. Application schema shall provide a formal description of the data structure and content of data sets while the feature catalogue shall provide the semantics of all feature types together with their attributes and attribute value domains, association types between feature types and feature operations, inheritance relations and constraints. Coverage is considered a subtype of a feature and can be derived from a collection of features that have common attributes. Both terrain and obstacle data product specifications shall identify clearly the coverage and/or imagery they include and shall provide a narrative description of each of them.

Note 1. — ISO Standard 19109 contains rules for application schema while ISO Standard 19110 describes feature cataloguing methodology for geographic information.

Note 2.— ISO Standard 19123 contains schema for coverage geometry and functions.

10.4.6 Both terrain data product specifications and obstacle data product specifications shall include information that identifies the reference system used in the data product. This

shall include the spatial reference system and temporal reference system. Additionally, both data product specifications shall identify the data quality requirements for each data product. This shall include a statement on acceptable conformance quality levels and corresponding data quality measures. This statement shall cover all the data quality elements and data quality sub-elements, even if only to state that a specific data quality element or sub-element is not applicable.

Note.— ISO Standard 19113 contains quality principles for geographic information while ISO Standard 19114 covers quality evaluation procedures.

10.4.7 Terrain data product specifications shall include a data capture statement which shall be a general description of the sources and of processes applied for the capture of terrain data. The principles and criteria applied in the maintenance of terrain data sets and obstacle data sets shall also be provided with the data specifications, including the frequency with which data products are updated. Of particular importance shall be the maintenance information of obstacle data sets and an indication of the principles, methods and criteria applied for obstacle data maintenance.

10.4.8 Terrain data product specifications shall contain information on how data held with data sets is presented, i.e. as a graphic output, as a plot or as an image. The product specifications for both terrain and obstacles shall also contain data product delivery information which shall include delivery formats and delivery medium information.

Note.— ISO Standard 19117 contains a definition of the schema describing the portrayal of geographic information including the methodology for describing symbols and mapping of the schema to an application schema.

10.4.9 The core terrain and obstacle metadata elements shall be included in the data product specifications. Any additional metadata items required to be supplied shall be stated in each product specification together with the format and encoding of the metadata.

Note.— ISO Standard 19115 specifies requirements for geographic information metadata.

10.4.10 The obstacle data product specification, supported by geographical coordinates for each aerodrome included within the dataset, shall describe the following areas:

- Areas 2a, 2b, 2c, 2d;
- the take-off flight path area; and
- the obstacle limitation surfaces.

APPENDIX 8. TERRAIN AND OBSTACLE DATA REQUIREMENTS

6

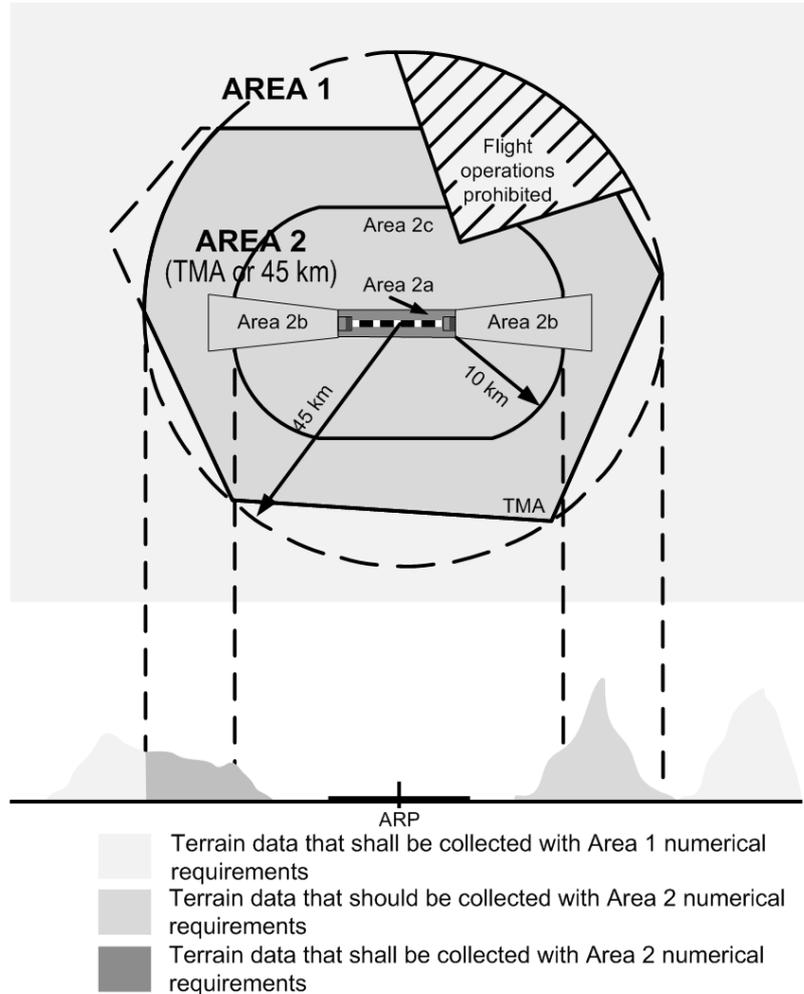


Figure A8-1. Terrain data collection surfaces — Area 1 and Area 2

7

1. Within the area covered extending to the by a 10 km radius from the ARP, terrain data shall comply with the Area 2 numerical requirements.
2. In the area between 10 km and the enclosed by the TMA boundary or 45-km radius from the ARP (whichever is smaller), data on terrain data that penetrates the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 2 numerical requirements
3. In the area between 10 km and the TMA boundary or 45 km radius (whichever is smaller), data on terrain that does not penetrate the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 1 numerical requirements.
4. In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, terrain data shall comply with the Area 1 numerical requirements.

Note.— Terrain data numerical requirements for Areas 1 and 2 are specified in Table A8-1

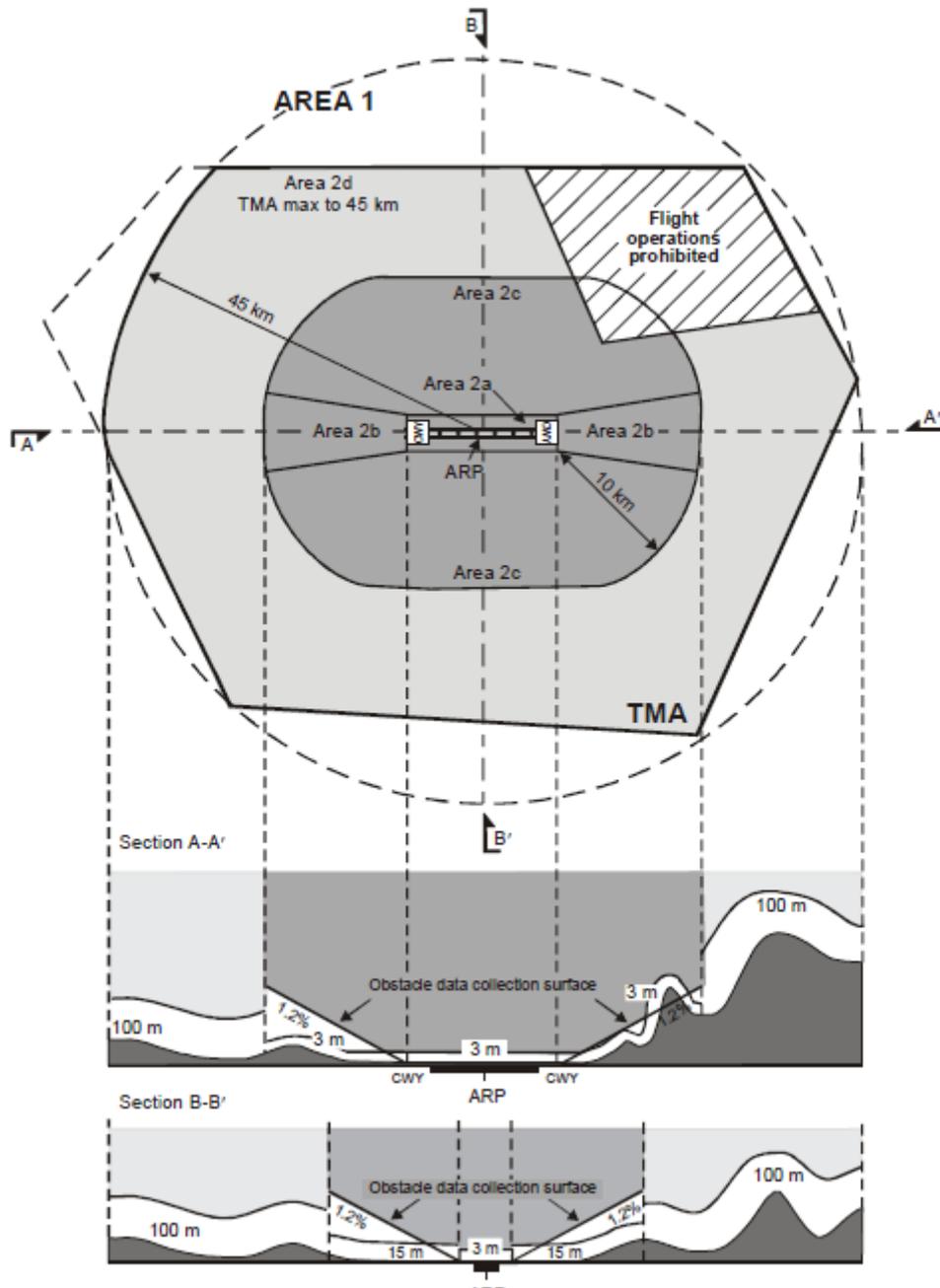


Figure A8-2. Obstacle data collection surfaces — Area 1 and Area 2

1. Obstacle data shall be collected and recorded in accordance with the Area 2 numerical requirements specified in Table A8-2:

8

a) Area 2a: a rectangular area around a runway ~~that comprises~~ extending to 250 m either side of the runway ~~strip~~ centre line and extending before the threshold and beyond the end of the runway or stopway for a distance of 250m. Area 2a shall be extended so as to fully include ~~plus~~ any clearway(s) that exists. The Area 2a obstacle collection surface shall have height of 3 m above the nearest runway elevation measured along the runway centre line, and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end;

9

b) Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 105 km and a splay of 15% to each side. The Area 2b obstacle collection surface has a 1.2% slope extending from the ends of Area 2a at the elevation of the runway end in the direction of departure, with a length of 105 km and a splay of 15% to each side. Obstacles less than 3 m in height above ground need not be collected;

c) Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a. The Area 2c obstacle collection surface has a 1.2% slope extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a. The initial elevation of Area 2c shall be the elevation of the point of Area 2a at which it commences. Obstacles less than 15 m in height above ground need not be collected; and

d) Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest. The Area 2d obstacle collection surface has a height of 100 m above ground.

2) In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, obstacle data shall be collected and recorded in accordance with the Area 1 requirements.

3) Data on every obstacle within Area 1 whose height above the ground is 100 m or higher shall be collected and recorded in the database in accordance with the Area 1 numerical requirements specified in Table A8-2.

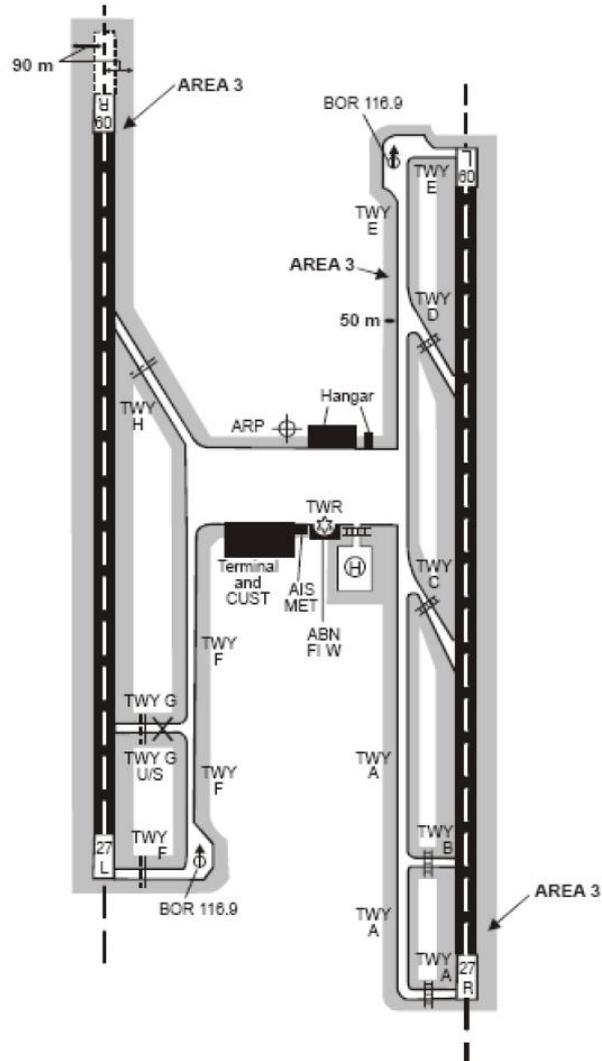


Figure A8-3. Terrain and obstacle data collection surface — Area 3

1. The data collection surface for terrain and obstacles extends a half-metre (0.5 m) above the horizontal plane passing through the nearest point on the aerodrome movement area.
2. Terrain and obstacle data in Area 3 shall comply with the numerical requirements specified in Table A8-1 and Table A8-2, respectively.

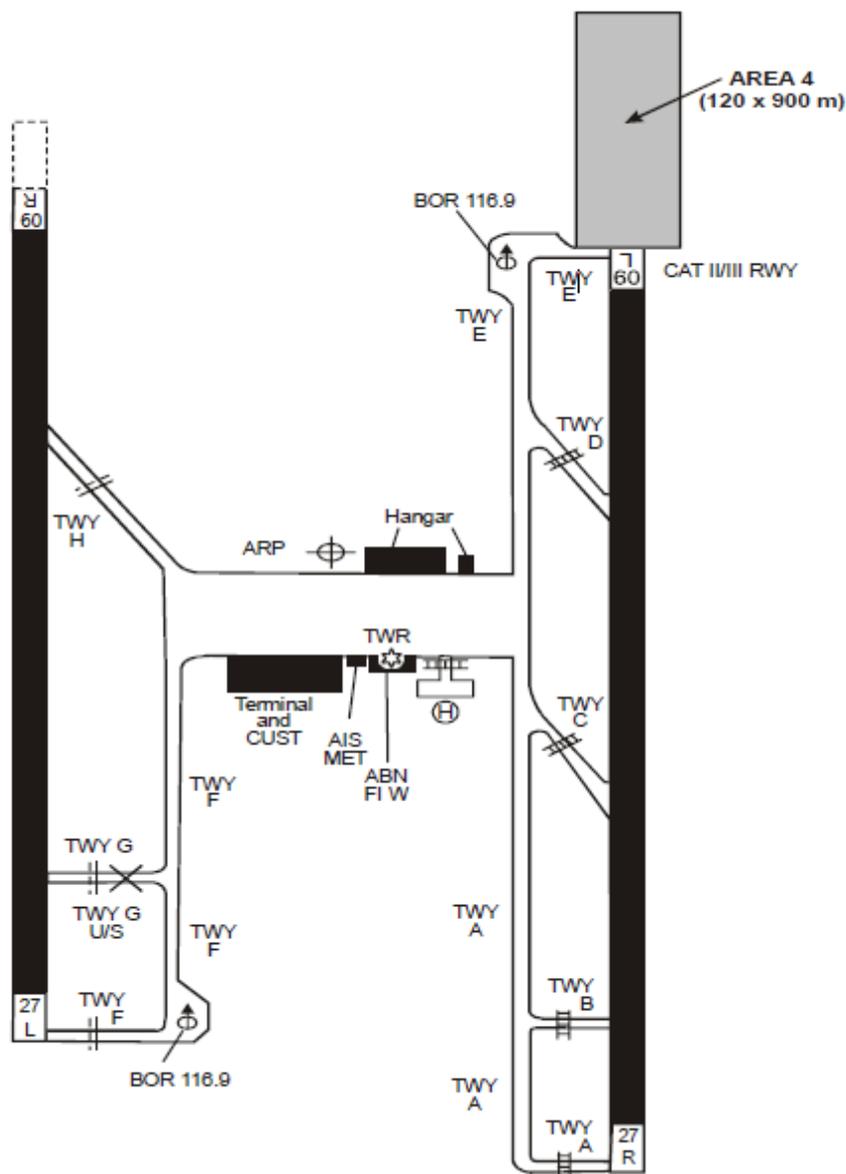


Figure A8-4. Terrain and obstacle data collection surface — Area 4

Terrain and obstacle data in Area 4 shall comply with the numerical requirements specified in Table A8-1 and Table A8-2, respectively.

10 *Note 1.— The horizontal extent of Area 2 covers Area 4. More detailed obstacle data may be collected in Area 4 in accordance with Area 4 numerical requirements for obstacle data specified in Table A8-2. (See 10.1.8.)*

Note 2.— Area 4 may be extended in accordance with 10.1.2.

Table A8-1. Terrain data numerical requirements

	Area 1	Area 2	Area 3	Area 4
Post spacing	3 arc seconds (approx. 90 m)	1 arc second (approx. 30 m)	0.6 arc seconds (approx. 20 m)	0.3 arc seconds (approx. 9 m)
Vertical accuracy	30 m	3 m	0.5 m	1 m
Vertical resolution	1 m	0.1 m	0.01 m	0.1 m
Horizontal accuracy	50 m	5 m	0.5 m	2.5 m
Confidence level	90%	90%	90%	90%
Data classification	Routine	Essential	Essential	Essential
Integrity level	1×10^{-3}	1×10^{-5}	1×10^{-5}	1×10^{-5}
Maintenance period	as required	as required	as required	as required

Table A8-2. Obstacle data numerical requirements

	Area 1	Area 2	Area 3	Area 4
Vertical accuracy	30 m	3 m	0.5 m	1 m
Vertical resolution	1 m	0.1 m	0.01 m	0.1 m
Horizontal accuracy	50 m	5 m	0.5 m	2.5 m
Confidence level	90%	90%	90%	90%
Data classification	Routine	Essential	Essential	Essential
Integrity level	1×10^{-3}	1×10^{-5}	1×10^{-5}	1×10^{-5}
Maintenance period	as required	as required	as required	as required

Table A8-3. Terrain attributes

	Terrain attribute	Mandatory/Optional
	Area of coverage	Mandatory
	Data originator identifier	Mandatory
11	Data source identifier	Mandatory
	Acquisition method	Mandatory
	Post spacing	Mandatory
	Horizontal reference system	Mandatory
	Horizontal resolution	Mandatory
	Horizontal accuracy	Mandatory
	Horizontal confidence level	Mandatory
	Horizontal position	Mandatory
	Elevation	Mandatory
	Elevation reference	Mandatory
	Vertical reference system	Mandatory
	Vertical resolution	Mandatory
	Vertical accuracy	Mandatory
	Vertical confidence level	Mandatory
	Surface type	Optional
	Recorded surface	Mandatory
	Penetration level	Optional
	Known variations	Optional
	Integrity	Mandatory
	Date and time stamp	Mandatory
	Unit of measurement used	Mandatory

Table A8-4. Obstacle attributes

	Obstacle attribute	Mandatory/Optional
	Area of coverage	Mandatory
	Data originator identifier	Mandatory
11	Data source identifier	Mandatory
	Obstacle identifier	Mandatory
	Horizontal accuracy	Mandatory
	Horizontal confidence level	Mandatory
	Horizontal position	Mandatory
	Horizontal resolution	Mandatory
	Horizontal extent	Mandatory
	Horizontal reference system	Mandatory
	Elevation	Mandatory
	Height	Optional
	Vertical accuracy	Mandatory
	Vertical confidence level	Mandatory
	Elevation reference	Mandatory
	Vertical resolution	Mandatory
	Vertical reference system	Mandatory
	Obstacle type	Mandatory
	Geometry type	Mandatory
	Integrity	Mandatory
	Date and time stamp	Mandatory
	Unit of measurement used	Mandatory
	Operations	Optional
	Effectivity	Optional
	Lighting	Mandatory
	Marking	Mandatory

— END —

Report on Agenda Item 4: ANP/FASID Requirements related to e-TOD.

4.1 Under this Agenda Item, the meeting provided a follow-up of the APIRG/17 Conclusion 17/90 (b) relevant to the proposed FASID Table at Appendix 4-A to be included as a requirement in the AFI FASID (Document 7474, Vol. II).

4.2 The meeting reviewed and adopted the proposed amendment to include the Draft FASID Table prepared by the Secretariat to be included into the AFI FASID, Part VIII (AIS), with necessary amendments as appropriate;

DRAFT CONCLUSION 2-2: PROPOSAL FOR AMENDMENT TO THE AFI BASIC ANP/FASID (DOC 7474 Vol. I and II) RELATED TO e-TOD

That,

- a) *AFI States review the draft proposal for amendment to the AFI Basic ANP/FASID (Part VIII) at Appendix 4- A to the Report on Agenda Item 4 and send their comments to the ICAO WACAF and ESAF Regional Offices before 31 October 2011; and*

4.3 The meeting then agreed that the ATM/AIM/SAR Sub-Group would further review and refine, as necessary, the above proposal and propose to APIRG for its inclusion in the AFI Basic ANP/FASID, in accordance with standard procedure.

4.4 The meeting also agreed that a State Letter should be issued by the ICAO WACAF Regional Office inviting States to comment on the draft proposal for amendment to the AFI Basic ANP (Part VIII).

4.5 The meeting recalled that APIRG/17, through Conclusion 17/90 (b), invited ICAO to consider the inclusion of a Draft FASID Table related to the implementation of e-TOD into the AFI FASID, Part VIII (AIS).

4.6 The meeting then endorsed the following proposal for amendment as per Appendix 4-A and 4B :

*Proposal for Amendment to the AFI Basic ANP (Doc 7474 Vol. I) for the introduction of a new
Section related to e-TOD*

World Geodetic System – 1984 (WGS-84)

67. *In order to ensure that quality (accuracy, resolution and integrity) and traceability requirements for the WGS-84 related geographical coordinate data are met, States must take measures to develop and introduce a quality system programme. This programme containing procedures, processes and resources should be in conformity with the International Organization for Standardization (ISO) 9000 series of quality assurance standards.*

(Insert the following new Text)

Electronic Terrain and Obstacle Data (eTOD) Requirements

(FASID Table AIS 9)

68. *Recognizing that significant safety benefits for international civil aviation will be provided by in-flight and ground-based applications that rely on quality electronic Terrain and Obstacle Data (e-TOD), States should make every effort to implement the e-TOD provisions in accordance with Chapter 10 of Annex 15 and Doc 9881.*

69. *FASID Table AIS-X sets out the requirements for the provision of Electronic Terrain and Obstacle Data (e-TOD) to be provided by States.*

70. *The implementation of e-TOD should involve different Administrations within and outside the Civil Aviation Authority i.e.: AIS, Aerodromes, Military, National Geographic and Topographic Administrations/Agencies, procedure designers, etc.*

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

72. *States should consider carefully the required level of details of collected terrain and obstacle data with particular emphasis on obstacle data and associated cost.*

73. *States should take into consideration the requirements for update/maintenance of data, especially related to obstacles.*

75. *States should work co-operatively with regard to the cross-border issue, for the sake of harmonization and more efficient implementation of e-TOD.*

(Renumber the following paragraphs)

**FASID TABLE AIS-X –e-TOD REQUIREMENTS APPENDIX-4B (FASID Table AIS-9
EXPLANATION OF THE TABLE**

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

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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	45K m				TM A	45K m		
1	2	3	4	5	6	7	8	9	10	11	12	13
ALGERIA												
DAUA ADRAR/Touat RS	04 22	NPA										
DAAG ALGER/Houari Boumediene RS	05 23 09 27	NPA PA2 PA1 NPA										
DABB ANNABA/El Mellah RS	01 19 05 23	NPA PA1 NPA NINST										
DABC CONSTANTINE/Mohamed Boudiaf RS	14 32 16 34	NPA PA1 NPA PA1										
DAUG GHARDAIA/Noumérat RS	12 30	NPA PA1 NINST										
DAUH HASSI-MESSAOUD/Oued Irara RS	18 361 01 19	PA1 NPA										
DAUI IN-SALAH/ AS	05 23	NPA NPA										
DAOO ORAN/Es Sénia RS	07 25	NPA PA2										
DAAT TAMANRASSET/Aguennar AS	02 20 08 26	NPA PA1 NPA										

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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	45K m				TM A	45K m			
DABS RS	TEBESSA/Tébessa	11 29 12 30	NPA NPA NPA NINST										
DAON RS	TLEMCEN/Zénata	09 27	NPA NPA										
DAUZ RS	ZARZAITINE/In Amenas	05 23 15 33	NPA NPA										
ANGOLA													
FNHU RS	HUAMBO/Albano Machado	11 29	NPA NPA										
FNLU RS	LUANDA/4 de Fevereiro	05 23 07 25	NPA PA1										
BENIN													
DBBB RS	COTONOU/Cadjehoun	06 24	NPA PA1										
BOTSWANA													
FBFT RS	FRANCISTOWN/ Francistown	11 29	NINST NINST										
FBSK RS	GABORONE/Sir Seretse Khama Intl	08 26	PA1 NPA										
FBKE RS	KASANE/Kasane	08 26	NPA NINST										
FBMN RS	MAUN/Maun	08 26	NINST NINST										
FBSP RS	SELEBI-PHIKWE/Selebi- Phikwe	12 30	NINST PA1 NINST										

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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	45K m				TM A	45K m		
BURKINA FASO												
DFOO BOBO-DIOULASSO/Bobo-Dioulasso RS	06 24	PA1 NPA										
DFFD OUAGADOUGOU/Ouagadougou RS	04L 22R	PA1 NPA										
BURUNDI												
HBBA BUJUMBURA/Bujumbura RS	18 36	PA1 NPA										
CAMEROON												
FKKD DOUALA/Douala RS	12 30	NPA PA2										
FKKR GAROUA/Garoua RS	09 27	PA1 NPA										
FKKL MAROUA/Salak RS	13 31	NPA NINST										
FKKN e AS	N'GAOUNDERE/N'Gaounder 03 21	NPA NINST										
FKYS YAOUNDE/Nsimalen RS	01 19	NINST PA2										
CAPE VERDE												
GVFM PRAIA/Francisco Mendes RS	04 22	NPA NINST										
GVAC SALI./Amilcar Cabral RS	01 19 07 25	PA1 NPA										
CENTRAL AFRICAN REPUBLIC												
FEFF BANGUI/M'Poko RS	17 35	NPA PA1										

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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	45K m				TM A	45K m			
FEFT RS BERBERATI/Berberati	17 35	NPA NINST											
CHAD													
FTTJ RS N'DJAMENA/N'Djamena	05 23	PA1 NPA											
COMOROS													
FMCV RS ANJOUAN/Ouani	10 28	NPA NPA											
FMCZ RS DZAOUDZI/Pamanzi, Mayotte I.	16 34	NINST NPA											
FMCH RS MORONI/Prince Said IbrahimHahaia	02 20	PA1 NPA											
CONGO													
FCBB RS BRAZZAVILLE/Maya-Maya	06 24	PA1 NPA											
FCPP RS POINTE NOIRE/Agostino Neto	17 35	NPA NPA											
COTE D'IVOIRE													
DIAP RS ABIDJAN/Felix Houphouet Boigny Intl	03 21	NPA PA2											
DIBK RS BOUAKE/Bouake	03 21	NPA PA1											
DEMOCRATIC REPUBLIC OF THE CONGO													
FZNA RS GOMA/Goma	18 36	NINST NPA											
FZAA RS KINSHASA/N'Djili	06 24	NPA PA1											

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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	45K m				TM A	45K m		
FZIC AS	KISANGANI/Bangoka	13 31	NPA NPA									
FZQA AS	LUBUMBASHI/Luano	07 25	PA1 NPA									
FZWA AS	MBUJI MAYI/Mbuji Mahi	17 35	NPA NINT									
DJIBOUTI												
HDAM RS	DJIBOUTI/Ambouli	09 27	NPA PA1									
EGYPT 21												
HEBL RS	ABU-SIMBEL/Abu-Simbel	15L 33R 15L 33R	NPA NPA NPA NPA									
HEAX RS	ALEXANDRIA/Alexandria	04 22 18 36	NPA NPA NPA NPA									
HESN RS	ASWAN/Aswan	17 35	NPA PA1									
HECA RS	CAIRO/Cairo Intl	05L 23R 05R 23L 16 34	PA2 PA2 PA2 PA2 NPA NPA									
HEGN RS	HURGHADA/Hurghada	16 34	NPA PA1									
HELX RS	LUXOR/Luxor	02 20	NPA PA1									
HEMM RS	MERSA-MATRUH/Mersa-Matruh	15 33	NPA NPA									
HESH RS	SHARM EL SHEIKH/Sharm El Sheikh	04L 22R 04R 22L	PA1 NINST									
HESC RS	ST. CATHERINE/St. Catherine	17 35	NPA NINST									

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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	45K m				TM A	45K m		
HETB TABA/Taba RS	04 22 14 32	NINST NPA										
EQUATORIAL GUINEA												
FGSL MALABO/Malabo RS	05 23	PA1 NPA										
ERITREA												
HHAS ASMARA/Asmara Intl RS	07 25 12 30	PA1 NPA										
HHSB ASSAB/Assab RS	12 30	NPA NINST										
ETHIOPIA												
HAAB ADDIS ABABA/Bole Intl RS	07 25	NPA PA1										
HADR DIRE DAWA/Dire Dawa Intl RS	15 33	NINST NPA										
FRANCE (ILE DE LA REUNION)												
FMME SAINT-DENIS/Gilot La Reunion RS	12 30 14 32	NINST NPA PA1 NINST										
GABON												
FOON FRANCEVILLE/M'Vengue RS	15 33	PA1 NPA										
FOOL LIBREVILLE/Leon M'Ba RS	16 34	PA1 NPA										
FOOG PORT GENTIL/Port Gentil RS	03 21	NPA PA1										
GAMBIA												

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CITY/AERODROME	RWY No	RWY TYPE	Area 1	Area 2		Area 3	Area 4	Area 1	Area 2		Area 3	
				TMA	45K m				TM A	45K m		
GBYD BANJUL/Banjul Intl RS	14 32	NPA PA1										
GHANA												
DGAA ACCRA/Kotoka Intl RS	03 21	NPA PA1										
DGSI KUMASI/Kumasi RS	02 20	NPA NPA										
DGLE TAMALE/Tamale RS	05 23	NPA NPA										
GUINEA												
GUCY CONAKRY/Gbessia RS	06 24	PA1 NPA										
GUXN KANKAN/Diankana RS	10 28	NPA NINST										
GULB LABE/Tata RS	06 24	NINST NINST										
GUNZ N'ZEREKORE/Konia RS	18 36	NPA NINST										
GUINEA-BISSAU												
GGOV BISSAU/Osvaldo Vieira Intl RS	03 21	NPA PA1										
KENYA												
HKEL ELDORET/Eldoret Intl RS	08 26	PA2 NPA										
HKMO MOMBASA/Moi Intl RS	03 21 15 33	NPA PA1										
HKJK NAIROBI/Jomo Kenyatta Intl RS	06 24	PA2 NPA										

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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	45K m				TM A	45K m		
LESOTHO												
FXMM RS	MASERU/Moshoeshoe I. Intl	04 22	NINST PA1									
LIBERIA												
GLRB RS	MONROVIA/Roberts Intl	04 22	PA2 NPA									
LIBYAN ARAB JAMAHIRIYA												
HLLB RS	BENGHAZI/Benina	15L 33R 15R 33L	PA1 NPA NPA PA1									
HLLS RS	SEBHA/Sebha	13 31	PA1 NPA									
HLLT RS	TRIPOLI/Tripoli Intl	06 24 09 27 18 36	PA1 PA2									
MADAGASCAR												
FMMI RS	ANTANANARIVO/Ivato	11 29	PA1 NPA									
FMNA RS	ANTSIRANANA/Arrachart	13 31	NPA NINST									
FMNM RS	MAHAJANGA/Amborovy	14 32	NPA NINST									
FMNN RS	NOSY-BE/Fascene	05 23	NPA PA1									
FMMS RS	SAINTE-MARIE/Sainte-Marie	01 19	NPA NPA									
FMMT RS	TOAMASINA/Toamasina	01 19	NPA PA1									
FMSD RS	TOLAGNARO/Tolagnaro	07 25	NPA NPA									

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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	45K m				TM A	45K m		
MALAWI												
FWCLRS	BLANTYRE/Chileka	1028	PA1NPA									
FWLIRS	LILONGWE/Lilongwe Intl	1432	PA1NPA									
MALI												
GABRS	BAMAKO/Senou	0624	PA1NPA									
GAGORS	GAO/Gao	0725	NPA NINST									
GAKYRS	KAYES/Kayes	0826	NPA NINST									
GAKLRS	KIDAL/Kidal	1028	NPA NINST									
GAMBR	MOPTI-BARBE/Mopti-Barbe	0523	NPA NINST									
GANRS	NIORO/Nioro	0826	NPA NINST									
GATBR	TOMBOUCTOU/Tombouctou	0725	PA1NPA									
MAURITANIA												
GQPAR	ATAR/Atar	0422	NPA NINST									
GQNIRS	NEMA/Nema	1028	NINST NPA									
GQPPRS	NOUADHIBOU/Nouadhibou	0321	PA1NPA									
GQNNRS	NOUAKCHOTT/Nouakchott	0523	PA1NPA									

AFI e-TOD WG/2- REPORT

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	45K m				TM A	45K m		
GQPZ ZOUERATE/Zouerate RS	28 10	NPA NPA										
MAURITIUS												
FIMP MAURITIUS/Sir Seewoosagur Ramgoolam Intl RS	14 32	PA1 NPA										
MOROCCO												
GMAD AGADIR/Al Massira RS	10 28	NPA PA1										
GMTA AL HOCEIMA/Cherif Al Idrissi RS	18 36	PA1 NINST										
GMMN CASABLANCA/Mohammed V RS	17 35	NPA PA2										
GMFK ERRACHIDIA/Moulay Ali Cherif AS	13 31	NPA PA1										
GMFF FES/Saïss RS	10 28	NPA PA1										
GMMX MARRAKECH/Ménara RS	10 28	PA1 NPA										
GMMZ OUARZAZATE/Ouarzazate RS	12 30	NPA PA1										
GMFO OUJDA/Angads RS	06 24	PA1 NINST										
GMME RABAT/Salé RS	04 22	PA1 NPA										
GMTT TANGER/Ibnou-Batouta RS	10 28	NPA PA1										
GMAT TAN-TAN/Plage Blanche RS	14 22	NPA NINST										
GMTN TETOUAN/Saniat-Rimel RS	06 24	NPA NINST										

AFI e-TOD WG/2- REPORT

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	45K m				TM A	45K m		
MOZAMBIQUE												
FQBR RS	BEIRA/Beira	12 30 06 24	PA1 NPA									
FQMA RS	MAPUTO/Maputo Intl	05 23	NPA PA1									
NAMIBIA												
FYKT hop RS	KEETMANSHOOP/Keetmans	04 22 18 36	NPA NPA									
FYWB RS	WALVIS BAY/Walvis Bay	09 27 12 30	NPA NPA									
FYWH RS	WINDHOEK/Hosea KutakoWindhoek	08 26 16 34	PA1 NPA									
NIGER												
DRZA RS	AGADES/Sud	07 25	NPA NINST									
DRRN RS	NIAMEY/Diori Hamani Intl	09R 27L 09L 27R	PA1 NPA									
DRZR AS	ZINDER/Zinder	06 24	NPA NINST									
NIGERIA												
DNAA RS	ABUJA/Nnamdi Azikiwe	04 22	NPA PA1									
DNCA RS	CALABAR/Calabar	03 21	NPA PA1									
DNIL AS	ILORIN/Ilorin	05 23	PA1 NPA									
DNKA RS	KADUNA/Kaduna	05 23	PA1 NPA									

AFI e-TOD WG/2- REPORT

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	45K m				TM A	45K m			
DNKN KANO/Mallam Aminu Kano Intl RS	06 24 05 23	PA2 PA2											
DNMM LAGOS/Murtala Muhammed RS	01L 19R 01R 19L	PA2 PA2 NPA PA2											
DNMA MAIDUGURI/Maiduguri RS	05 23	PA2 NPA											
DNPO PORT HARCOURT/Port Harcourt Intl RS	03 21	NPA PA1											
DNSO SOKOTO/Abubakar Sadiq III Intl RS	08 26	PA1 NPA											
RWANDA													
HRYR KIGALI/Gregoire Kayibanda RS	10 28	NPA PA1											
SAO TOME AND PRINCIPE													
FPST SAO TOME/Sao Tomé RS	11 29	PA1 NPA											
SENEGAL													
GOGS CAP SKIRING/Cap Skiring RS	15 33	NINST NPA											
GOOY DAKAR/Leopold Sedar Senghor Intl RS	18 36 03 21	PA2 NPA											
GOSS SAINT LOUIS/Saint Louis RS	18 36	NPA NINST											
GOTTA TAMBACOUNDA/Tambacou RS	06 24	NPA NPA											
GOGG ZIGUINCHOR/Ziguinchor RS	10 28	NINST NPA											
SEYCHELLES													

AFI e-TOD WG/2- REPORT

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	45K m				TM A	45K m		
FSIA MAHE/Seychelles Intl RS	13 31	NPA PA1										
SIERRA LEONE												
GFLL FREETOWN/Lungi RS	12 30	NPA PA1										
SOMALIA												
HCM1 BERBERA/Berbera AS	05 23	NINST NINST										
HCMV BURAO/Burao RS	13 31	NINST NINST										
HCMH HARGEISA/Hargeisa RS	06 24	NPA NPA										
HCMK KISIMAYU/Kisimayu AS	05 23	NPA PA1										
HCM11 MOGADISHU/Mogadishu RS	05 23	NPA PA1										
SOUTH AFRICA												
FAAB ALEXANDER BAY/Alexander Bay RS	01 19 07 25 11 29	NPA NINST										
FABL BLOEMFONTEIN/Bloemfont ein AS	02 20 12 30	PA1 NPA NINST NINST										
FACT CAPE TOWN/Cape Town RS	01 19 16 34	PA1 NPA										
FADN DURBAN/Durban RS	05 23	NPA PA1										
FAJS JOHANNESBURG/Johannesb urg RS	03L 21R 03R 21L 15 33	PA2 MINST PA2 PA2 NINST NINST										

AFI e-TOD WG/2- REPORT

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	45K m				TM A	45K m		
FAGM RS JOHANNESBURG/Rand	18 36	NPA NPA										
FALA RS LANSERIA/Lanseria	06L 24R 06R 24L 17 35	NPA NINST										
FAUP RS UPINGTON/Upington	01 19 08 26	NPA NPA										
SPAIN												
GCLP RS GRAN CANARIA/Gran Canaria, Canary I.	03L 21R 03R 21L	PA1 NPA NINST NINST										
GCHI RS HIERRO/Hierro, Canary I.	16 34	NPA NINST										
GCLA RS LA PALMA/La Palma, Canary I.	01 19	NPA NINST										
CGRR RS LANZAROTE/Lanzarote, Canary I.	04 22	NPA NPA										
GEML RS MELILLA/Melilla	15 33	NPA NINST										
GCFV RS FUERTEVENTURA/Fuerteventura, Canary I.	01 19	PA1 NPA										
GCXO RS TENERIFE NORTE/Los Rodeos, Canary I.	12 30	NPA NPA										
GCTS RS TENERIFE SUR/Reina Sofia, Canary I.	08 26	PA1 NPA										
SUDAN												
HSSJ RS JUBA/Juba	13 31	PA1 NINST										
HSKA AS KASSALA/Kassala	02 20	NINST NINST										
HSSS RS KHARTOUM/Khartoum	18 36	PA1 NPA										

AFI e-TOD WG/2- REPORT

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	45K m				TM A	45K m		
HSPN PORT SUDAN/Port Sudan Intl RS	18 36	NPA PA1										
SWAZILAND												
FDMS MANZINI/Matsapha RS	07 25	NPA NINST										
TOGO												
DXXX LOME/Tokoin RS	05 23	NPA PA1										
DXNG NIAMTOUGOU/Niamtougou RS	03 21											
TUNISIA PA1 NPA												
DTTJ DJERBA/Zarzis RS	09 27	PA1 NPA										
DTMB MONASTIR/Habib Bourguiba RS	08 26	PA1 NPA										
DTTX SFAX/Thyna RS	15 33	NPA NPA										
DTKA TABARKA/7 NOVEMBRE RS	09 27	NPA PA1										
DTTZ TOZEUR/Nefta RS	09 27	PA1 NPA										
DTTF GAFSA/Ksar RS	05 23	PA1 NPA										
DTTA TUNIS/Carthage RS	01 19 11 29	NPA PA1 NPAIN ST PA1NP A										
UGANDA												

AFI e-TOD WG/2- REPORT

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	45K m				TM A	45K m			
HUEN RS	ENTEbbe/Entebbe Intl	17 35	PA1 NPA										
UNITED REPUBLIC OF TANZANIA													
HTDA RS	DAR-ES-SALAAM/Dar-Es-Salaam	05 23	PA1 NPA										
HTKJ RS	KILIMANJARO/Kilimanjaro Intl	09 27	PA1 NPA										
HTZA RS	ZANZIBAR/Zanzibar	18 36	NINST NPA										
WESTERN SAHARA													
GSAI RS	EL AAIUN/El Aaiun	04 22	NPA PA1										
GSMA RS	SMARA/Smara	17 35	NINST NINST										
GSVO RS	VILLA CISNEROS/Villa Cisneros	04 22	NINST NPA										
ZAMBIA													
FLLI RS	LIVINGSTONE/Livingstone Intl	10 28 15 33	NPA PA1 NPA										
FLLS RS	LUSAKA/Lusaka Intl	10 28	PA1 NPA										
FLMF RS	MFUWE/Mfuwe	08 26	NPA NPA										
FLND RS	NDOLA/Ndola	10L 28R 10R 28L	NPA PA1 NPA										
ZIMBABWE													
FVBU RS	BULAWAYO/Bulawayo	13 31	NPA NPA										

AFI e-TOD WG/2- REPORT

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	45K m				TM A	45K m		
FVHA HARARE/Harare RS	06 24	PA1 PA1										
FVFA VICTORIA FALLS/Victoria Falls RS	12 30	PA1 NINST										

Report on Agenda Item 5: AFI Region e-TOD implementation Strategy/Action Plan.

5.1 Under this Agenda, the meeting provided a follow-up of the APIRG/17 Conclusion 17/90 (c) relevant to the AFI Region e-TOD implementation strategy under Appendix 3.6G of the APIRG/17 report).

5.2 The meeting noted the deliberations of APIRG/17 Meeting and endorsed AFI Region e-TOD implementation strategy contained in APIRG/17 Appendix 3.6G. The meeting further noted the new ICAO provisions introduced particularly by Amendment 33 to Annex 15, then reviewed and updated the proposed AFI Region e-TOD implementation timelines under Appendix-5A of Agenda Item 5, to be adopted by the APIRG/18 Meeting.

5.3 Based on the above the meeting agreed that States should organize awareness campaigns and training events (workshops) involving all concerned personnel from within and outside the CAA in order to provide an overview of the technical, legal, institutional and financial issues related to e-TOD as well as of the actions that need to be taken in implementing e-TOD and to bring a high-level understanding of the associated topics. Accordingly, the meeting drafted the following Conclusions:

DRAFT CONCLUSION 2-3: SIP for AFI Region e- TOD implementation Seminar/Workshop

That,

- a) For the sake of an efficient and harmonized implementation of e-TOD, ICAO assist AFI States at the National Level and, to the extent possible co-operatively, organize a Regional SIP Seminar/Workshop to raise awareness campaigns and training programs to promote and expedite the process of e-TOD implementation*

- b) AFI States to participate actively in this Workshop*

DRAFT CONCLUSION 2-4: Provision of updates to the proposed AFI Region e-TOD implementation timelines under Appendix 5A of Agenda Item 5

That,

AFI States review the proposed AFI Region e-TOD implementation timelines under Appendix 5A of Agenda Item 5 and send their updates/comments to the ICAO WACAF and ESAF Regional Offices before 31 October 2011.

5.4 The meeting then agreed that the ATM/AIM/AIS Sub-Group would further review and refine, as necessary, the above proposal and propose to APIRG for its inclusion as an Appendix in the APIRG/18 Report, in accordance with standard procedure.

5.5 The meeting also agreed that a State Letter should be issued by the ICAO WACAF Regional Office inviting States to provide updates/comment on the draft AFI Region e-TOD implementation time-lines.

AFI Region E-TOD IMPLEMENTATION PLAN Updated Timelines

Timelines:

GLOBAL



REGIONAL



NATIONAL



AFI e-TOD WG/2- REPORT

AFI REGION - E-TOD Implementation Timelines																		
		2000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Global	Provision of Terrain Data for Area 1																	
States	Angola																	
	Benin																	
	Botswana																	
	Burkina Faso																	
	Burundi																	
	Cape Verde																	
	Central African Republic																	
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	Democratic Republic of Congo																	
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Togo																		
Uganda																		
United Republic of Tanzania																		
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Zimbabwe																		

AFI e-TOD WG/2- REPORT

AFI REGION - E-TOD Implementation Timelines																		
		2000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Global	Provision of Obstacle Data for Area 1																	
States	Angola																	
	Benin																	
	Botswana																	
	Burkina Faso																	
	Burundi																	
	Cape Verde																	
	Central African Republic																	
	Chad																	
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	United Republic of Tanzania																	
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AFI e-TOD WG/2- REPORT

AFI REGION - E-TOD Implementation Timelines																		
		2000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Global	Provision of Terrain Data for Area 2																	
States	Angola																	
	Benin																	
	Botswana																	
	Burkina Faso																	
	Burundi																	
	Cape Verde																	
	Central African Republic																	
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AFI e-TOD WG/2- REPORT

AFI REGION - E-TOD Implementation Timelines																			
		2000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	
Global	Provision of Obstacle Data for Area 2																		
States	Angola																		
	Benin																		
	Botswana																		
	Burkina Faso																		
	Burundi																		
	Cape Verde																		
	Central African Republic																		
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United Republic of Tanzania																			
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AFI REGION - E-TOD Implementation Timelines																		
		2000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Global	Provision of Terrain Data for Area 3																	
States	Angola																	
	Benin																	
	Botswana																	
	Burkina Faso																	
	Burundi																	
	Cape Verde																	
	Central African Republic																	
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	United Republic of Tanzania																	
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AFI REGION - E-TOD Implementation Timelines																		
		2000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Global	Provision of Obstacle Data for Area 3																	
States	Angola																	
	Benin																	
	Botswana																	
	Burkina Faso																	
	Burundi																	
	Cape Verde																	
	Central African Republic																	
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AFI REGION - E-TOD Implementation Timelines																		
		2000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Global	Provision of Obstacle Data for Area 4																	
States	Angola																	
	Benin																	
	Botswana																	
	Burkina Faso																	
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AFI REGION - E-TOD Implementation Timelines																			
		2000	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	
Global	Provision of Terrain Data for Area 4																		
States	Angola																		
	Benin																		
	Burkina Faso																		
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Somalia																			
South Africa																			
Swaziland																			
Togo																			
Uganda																			
United Republic of Tanzania																			
Zambia																			
Zimbabwe																			

X = Implemented
N = Non Implemented
P = Plan Implementation

Report on Agenda Item 6: Future work program

6.1 The meeting noted the deliberations of APIRG/17 Meeting and the adopted revised terms of reference of the AFI Region e-TOD Working Group under **Appendix 6-A** to Agenda Item 6, and as contained in APIRG/17 Appendix 3.6H .

6.2 The meeting further noted that the applicability dates for the implementation of e-TOD provisions related to Area1 and Area 4, which is 20 November 2008 has passed and taking into account that the Applicability date for Amendment 36 to Annex 15 is November 18, 2010 except for Area 2a) which is November 2015, the meeting should consider that in future, the remaining e-TOD tasks which have not yet been completed will be included in the Work Program of the AFI AIM Task Force.

Draft Decision 2-5 : Future Work Program

That in the Future, the remaining e-TOD tasks which have not yet been completed will be included in the Work program of the AFI AIM Task Force.

TERMS OF REFERENCE OF THE AFI e-TOD/WG

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

Mission

To identify, develop , validate and establish support mechanisms and serve as a forum by which the AFI States may implement the provision of electronic Terrain and obstacle Data (e-TOD), in accordance with ICAO Annex 1 5, in a consistent and harmonised manner.

Reporting Line

The e -TOD Working Group (e -TOD WG) will report to the APIRG.

Participants profile

The e -TOD WG will be open to participants from any relevant domain, including , but not limited to , AIS/AIM personnel, surveyors, regulators, industry and international organisations in AFI and non-AFI States .

Tasks

Overall , the e-TOD WG shall support the :

- establishment of a common understanding of the intentions of Annex 1 5 with regard to e-TOD ;
- promotion of awareness of the responsibility and accountability of States for the implementation of e-TOD;
- Specification of the responsibilities for the bodies involved (regulator, surveyor, service provider etc.) ;
- Specification of a concept and the development of the associated AFI Region guidance material for the implementation of e-TOD by adopting the revised ICAO Guidance Material (Doc.9881) . The guidance material should assist in the definition of:

- Qualities of data collection techniques;
- Methods for the validation and verification of e-TOD;
- The data model(s) to be used;
- Mechanisms for the storage and exchange of e-TOD;

- Data protection and other quality processes;
 - Quality management / assurance (verification and validation) criteria;
 - Cross-border harmonisation;
 - Methodologies for cost recovery, if appropriate;
 - Guidance relating to the assessment of e-TOD for periodic resurvey (timeliness).
- working with other fora to develop harmonised approaches to copyright, liability, intellectual property, and methodologies for cost recovery, if appropriate; etc.;
 - Review of the requirements for Area 2 as per amendments to Annex 15.
 - introduction by States, of regulation to support the act of data provision; _ facilitation and coordination of e-TOD implementation within AFI Region;
 - monitoring of the progress towards implementation of e-TOD within the AFI Region;
 - the promotion of the means for global harmonisation;
 - submission of material created under the project to ICAO and its promotion on a world-wide basis;
 - AIM domain in gaining the necessary support and resources from the Agency management.

B) COMPOSITION

The AFI Region e-TOD Working Group will be composed of Experts nominated by the AFI Region States, ANSP and participants from any relevant domain, including, but not limited to AIS/AIM personnel, surveyors, regulators, industry and international organisations in AFI and non-AFI States .

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-AIM Implementation 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 - AIM Implementation Task Force Secretariat based on the need to address AIS - AIM deficiencies in the AFI Region.

Agenda Item 7: Any other business

7.1 Nothing has been discussed under this Agenda Item.

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