International Civil Aviation Organization

MIDANPIRG AIM Task Force

Seventh Meeting (AIM TF/7)
(Cairo, 25 – 27 September 2012)

Agenda Item 4: Performance Framework for AIM implementation in the MID Region

REVIEW AND UPDATE OF THE AIM FASID TABLES

(Presented by the Secretariat)

<table>
<tr><td colspan="1" align="center">SUMMARY</td></tr>
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The aim of this paper is to provide an update on the progress achieved for the review of the MID Basic ANP and FASID (Doc 9708) and populate the AIM FASID Tables endorsed by MIDANPIRG/13.

Action by the meeting is at paragraph 3.

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<tr><td align="center">REFERENCES</td></tr>
<tr><td>

- AIS/MAP TF/6 Report
- ATM/SAR/AIS SG/12 Report
- CNS/ATM/IC SG/6 Report
- MIDANPIRG/13 Report

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1. INTRODUCTION

1.1   The regional planning and implementation process is facilitated through formulation of regional Air Navigation Plans (ANPs) which are developed and maintained through the Planning and Implementation Regional Groups (PIRGs).

1.2   MIDANPIRG/13 recalled that an electronic copy of the MID Basic ANP and FASID (Doc 9708) is available on the ICAO MID Website at:
 http://legacy.icao.int/mid/midanpirg/edocs/index.html. However, it was highlighted that a more up-to-date version encompassing the latest proposals for amendments related to ATS Routes (ATS 1 Table) and an updated ATS 1 Chart is available on the ICAO GIS portal. The meeting noted that the version of the MID Basic ANP and FASID available on the ICAO MID website, will be updated using the version available on the ICAO GIS portal.

1.3   The meeting recalled that MIDANPIRG/12, through Decision 12/49, recognized the need for a complete review of both the content and format of the MID Basic ANP and FASID. The need to evolve the current ANPs to a new web-based format (eANPs) was also underlined.

2. DISCUSSION

2.1   MIDANPIRG/13 noted that a similar work has been carried out in the European Region. The meeting further noted that a Task Force has been established in Europe for the development of the AIM Parts of the EUR ANP.

2.2   Based on the outcome of the EUR ANP AIM Task Force and the review carried out by the AIS/MAP TF/6, the ATM/SAR/AIS SG/12 and the CNS/ATM/IC SG/6 meetings, the meeting endorsed the AIM Parts of the MID ANP at **Appendices A, B** and **C** to this working paper, and agreed accordingly to the following Conclusion:

> *CONCLUSION 13/31:   ENDORSEMENT OF THE AIM PARTS OF THE MID BASIC ANP AND FASID*
>
> *That, the AIM Parts of the MID Basic ANP and FASID, including the AIM FASID Tables at Appendices 4.5F, 4.5G and 4.5H to the Report on Agenda Item 4.5:*
>
> *a) are endorsed;*
>
> *b) be used as a planning document for the transition from AIS to AIM in the MID Region; and*
>
> *c) be formally included in the MID ANP through a proposal for amendment, when the new structure of the MID ANP is finalized and the AIM FASID Tables are populated with relevant data.*

2.3   The meeting may wish to note that the AN-Conf/12 will discuss the future steps needed to align the regional plans with the global air navigation plan, including the Aviation System Block Upgrade (ASBU) methodology and associated technology roadmaps.

2.4   ICAO has developed the eANPs as an online system for maintaining, storing and displaying information contained in the regional ANPs. In July 2011, the amendment process was automated to further reduce the process time within ICAO. But despite these improvements, the challenge remained to keep the paper-based regional ANPs updated, particularly in view of continuous air navigation technological developments.

2.5   To simplify its introduction, all procedures that apply to the current paper-based ANPs will continue for the eANPs. However, to make full use of the online system, ICAO will continue to simplify the workflows related to the amendment process, and related to the data within the eANP, to increase the efficiency, accuracy, and accessibility in maintaining the narrative and data in the ANPs.

2.6   As part of the eANPs project, the CNS, AIM, AOP and MET FASID tables in Volume II will be standardized and harmonized across all regions and aligned with ASBU methodology.

2.7   The provisional plan for the transition to the eANPs is as follows:

-        New Basic ANP Parts (including the AIM Part) to be sent to ICAO HQ by 31 October 2012 for upload on the GIS website and presentation to the AN-Conf/12.

- On the basis of the comments received during the Conference, ICAO Secretariat to review and update the revised Basic ANP and FASID Parts of eANPs, by 1 February 2013.

- Regional Offices to develop and circulate proposal for amendments with revised Basic ANP and FASID Parts of eANP by 1 June 2013.

- eANPs are officially launched and ready for use Effective 1 July 2013.

3. ACTION BY THE MEETING

3.1   The meeting is invited to:

a) review and populate the AIM FASID Tables with necessary data;

b) agree that the AIM FASID Tables as updated by the AIM TF/7 meeting be circulated to States for review and update, as necessary; and

c) urge States to participate actively in the discussions of the AN-Conf/12 related to eANPs.

MID ANP, VOLUME I, BASIC ANP

PART x - AERONAUTICAL INFORMATION MANAGEMENT (AIM)

1.   INTRODUCTION

Regional AIS/AIM Planning

1.1   This part of the Middle East Region Basic Air Navigation Plan contains basic planning principles, operational requirements, planning criteria and implementation guidelines related to Aeronautical Information Services and Charts (AIS/MAP) considered being the minimum necessary for effective planning of AIS and MAP facilities and services in the MID Region. It contains also the developing transition path to achieve MID Region Aeronautical Information Management (AIM) based on the *ATM Operational Concept (Doc 9854)* and the *Global Air Navigation Plan (Doc 9750)*.

1.2   The dynamic material constituted by the AIS/AIM facilities and services required for international air navigation is contained in the MID ANP Volume 2 - Facilities and Services Implementation Document (FASID). The FASID includes appropriate additional guidance, particularly with regard to implementation, to complement the material contained in the Basic ANP.

1.3   During the transition to and pending full implementation of AIM, it is expected that the existing requirements will be gradually replaced/complemented by new AIM related requirements. Subsequently, it is expected that the ANP will be subject to regular review and amendment, to reflect progression in the transition towards full implementation of AIM.

Standards, Recommended Practices and Procedures

1.4   The Standards, Recommended Practices and Procedures and related guidance material applicable to the provision of AIS and ultimately AIM are contained in the following ICAO documentation:

   a) Annex 4 – Aeronautical Charts;
   b) Annex 15 – Aeronautical Information Services;
   c) Doc 7030 – Regional Supplementary Procedures, MID Region;
   d) Doc 7383 – Aeronautical Information Services Provided by States;
   e) Doc 7910 – Location Indicators;
   f) Doc 8126 – Aeronautical Information Services Manual;
   g) Doc 8168 – Aircraft Operations Volume 2 – Construction of Visual and Instrument Flight Procedures;
   h) Doc 8400 – ICAO Abbreviations and Codes (PANS-ABC);
   i) Doc 8697 – Aeronautical Charts Manual;
   j) Doc 9377 – Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services;
   k) Doc 9674 – World Geodetic System (1984) Manual;
   l) Doc 9855 – Guidelines on the Use of the Public Internet for Aeronautical Applications; and
   m) Doc 9881– Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information.
   n) Doc 9906 (Volume I) – Flight Procedure Design Quality Assurance System.

2. GENERAL PROCEDURES/REQUIREMENTS

MID Region Responsibilities

2.1   The ICAO Regional Office will, through MIDANPIRG:

  i)   process endorsed proposals for amendment to ICAO AIS/AIM related documents;
  ii)   process endorsed proposals for amendment to ICAO AIS/AIM related documents; and
  iii) support the MIDANPIRG AIM Task Force.

State Responsibilities

2.2   Each Contracting State is responsible for the aeronautical information/data published by its aeronautical information service or by another State or a non-governmental agency on its behalf.

2.3   Aeronautical information published for and on behalf of a State should clearly indicate that it is published under the authority of that State.

2.4   Each Contracting State should take all necessary measures to ensure that the aeronautical information/data it provides relating to its own territory, as well as areas in which the State is responsible for providing air traffic services outside its territory, is adequate, of required quality and timely. This should include arrangements for the timely provision of required information/data to the aeronautical information service by each of the State services associated with aircraft operations.

2.5   International NOTAM Offices (NOF) and their areas of responsibility should be established so as to ensure maximum efficiency in the provision of AIS and in the dissemination of aeronautical information.

2.6   The designated International NOTAM Offices for the MID Region are listed in the **MID ANP Volume 2 - FASID Table AIM-1**.

2.7   Coordination/liaison on a permanent basis should be established between AIS/AIM and other technical services responsible for planning and operating air navigation facilities and services.

2.8   Technical services responsible for origination of the raw aeronautical information should be acquainted with the requirements for promulgation and advance notification of changes that are operationally significant as established in Annexes 11 and 14 and other relevant ICAO documentation. They should take due account of the time needed by AIS/AIM for the preparation, production and issue of the relevant material.

2.9   Appropriate AIS/AIM personnel should be included in the air navigation planning processes. This should ensure the timely preparation of appropriate AIS documentation and that the effective dates for changes to the air navigation system and procedures are satisfied.

2.10   Whilst Annex 4 and Annex 15 detail the SARPs for the provision of charts and AIS respectively, the following State responsibilities are highlighted:

a) Each Contracting State should:

    i)   Arrange for the implementation of a quality management system for aeronautical information and chart services. The quality management system should include the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data is traceable throughout the aeronautical information data chain from origin to distribution to the next intended user. As part of the quality management system, arrangements should be made for the signature of letters of agreement with data originators to manage the aeronautical information data chain.

    ii)   Ensure Human Factors are considered.

    iii)   Ensure adherence to the AIRAC System.

    iv)   Ensure that the aeronautical information/data to be exchanged with States is published as an Integrated Aeronautical Information Package (i.e. Aeronautical Information Publication (AIP), including amendment service, AIP Supplements, NOTAM, pre-flight information bulletins (PIB), Aeronautical Information Circulars (AIC), checklists and list of valid NOTAM) in accordance with the requirements of Annex 15.

    v)   Arrange for the provision of an electronic AIP (eAIP) in accordance with the requirements of Annex 15.

    vi)   Comply with WGS 84 requirements.

    vii)   Introduce automation enabling digital data exchange with the objective of improving the speed, accuracy, efficiency and cost-effectiveness of aeronautical information services.

    viii)   Ensure that pre-flight information is provided at all aerodromes/heliports normally used for international air operation, in accordance with the requirements of Annex 15, using Automated pre-flight information systems for the supply of aeronautical information/data for self-briefing, flight planning and flight information service.

    ix)   Arrange for the provision of post-flight information.

    x)   Arrange for the provision of required electronic Terrain and Obstacle Data (eTOD), in accordance with the requirements of Annex 15.

    xi)   Arrange for the production and publication of necessary aeronautical charts in accordance with Annex 4 provisions and regional agreements.

3.   AERONAUTICAL INFORMATION MANAGEMENT

3.1.   The Global Air Traffic Management Operational Concept presented in ICAO Doc 9854 depends upon a system wide information management (SWIM). The management, utilization and transmission of data and information are vital to the proper functioning of the ATM system and are at the core of air navigation services.

3.2.   As part of SWIM, AIM is required to support evolving requirements for, inter alia, collaborative decision making (CDM), performance-based navigation (PBN), ATM system interoperability, network-centred information exchange, and to take advantage of improved aircraft capabilities.

3.3.   The scope of information management includes all types of information and in particular aeronautical information. The relationship diagram below shows a number of the core elements of SWIM:
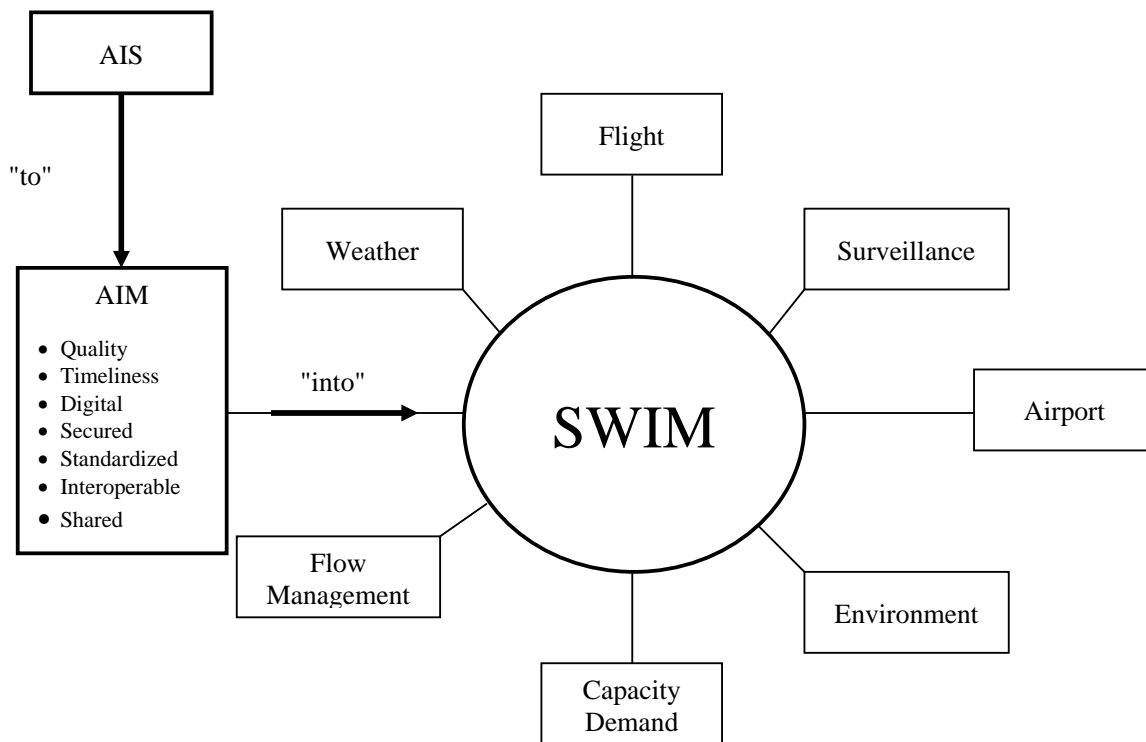
Aeronautical Information Management (AIM) is considered to be the dynamic, integrated management of aeronautical information services — safely, economically and efficiently — through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties.

TRANSITION TO AIM

3.4.	The transition to AIM requires that all aeronautical information, including that currently held in AIP be stored as individual digital standardized data sets to be accessed by user applications. The distribution of these data sets will both enhance the quality of output and ultimately provide a platform for new applications. This will constitute the future integrated aeronautical information package that will contain the minimum regulatory requirement to ensure the flow of information necessary for the safety, regularity and efficiency of international air navigation. (GPI-18 refers).

Guiding Principles for the Transition to AIM

3.5.	The transition from AIS to AIM will have to:

  a)	support or facilitate the generation and distribution of aeronautical information which serves to improve the safe and cost-effective accessibility of air traffic services in the world;

  b)	provide a foundation for measuring performance and outcomes linked to the distribution of quality assured aeronautical information and a better understanding of the determinants of ATM, safety and effectiveness not related to the distribution of the information;

  c)	assist States in making informed choices about their aeronautical information services and the future of AIM;

d) build upon developments in States, international organizations and industry and acknowledge that the transition to AIM is a natural evolution rather than a revolution;

e) provide over-arching and mature Standards that apply to a wide range of aeronautical information products, services and technologies;

f) be guided by the *Global Air Navigation Plan* (Doc 9750) and ensure that all development is aimed at achieving the ATM system envisaged in the *Global Air Traffic Management Operational Concept* (Doc 9854); and

g) ensure, to the greatest extent possible, that solutions are internationally harmonized and integrated and do not unnecessarily impose multiple equipment carriage requirements for aircraft or multiple systems on the ground.

The Roadmap to AIM

Source Document: ICAO Road Map for the Transition from AIS to AIM

3.6.   The purpose of the roadmap is to develop the AIM concept and associated performance requirements by providing a basis upon which to manage and facilitate, on a worldwide basis, the transition from AIS to AIM. The roadmap is based on what is known today and has been developed with sufficient flexibility to facilitate the new concepts that will emerge from future research.

3.7.   Three phases of action are envisaged for States and ICAO to complete the transition to AIM:

Phase 1 — Consolidation

3.8.   During Phase 1, steps will be taken to establish a solid base by enhancing the quality of the existing products and improving the status of implementation of current Annex 4 and Annex 15 provisions. This is a pre-requisite before Phase 2 can be achieved.

Phase 2 — Going digital

3.9.   Phase 2 of the transition to AIM will mainly focus on the establishment of data-driven processes for the production of the current products in all States. States that have not yet done so will be encouraged "to go digital" by using computer technology or digital communications and through introducing structured digital data from databases into their production processes. The emphasis will, therefore, not be on the introduction of new products or services but will be on the introduction of highly structured databases and tools such as geographic information systems.

Phase 3 — Information management

3.10.   Phase 3 will introduce steps to enable future AIM functions in States to address the new requirements that will be needed to implement the Global Air Traffic Management Operational Concept in a net centric information environment. The digital databases introduced in Phase 2 will be used for the transfer of information in the form of digital data. This will require the adoption of a Standard for an aeronautical data exchange model to ensure interoperability between all systems not only for the exchange of full aeronautical data sets, but also for short-term notification of changes.

National Plans for the transition to AIM

3.11.   States should be planning for the transition from AIS to AIM. The national plans for the transition from AIS to AIM should be based on the ICAO Roadmap for the transition from AIS to AIM, identifying clearly the associated performance goals and achievable milestones with a view to satisfy the requirements arising from the Global ATM Operational Concept, in particular the management of a seamless information flow ensuring interoperability between the different CNS/ATM systems.

AIM Implementation

3.12.   The following provisions/regulatory requirements complement those contained in ICAO Annex 4 and Annex 15 with a view to expedite AIM implementation in the MID Region in a harmonized manner. They represent the basis for a number of provisions contained in the FASID tables.

Integrated Aeronautical Information Database (IAID)

(FASID Table AIM-2)

3.13.   FASID Table AIM-2 sets out the requirements for the Provision of AIM products and services based on the Integrated Aeronautical Information Database (IAID).

3.14.   States should designate and implement an authoritative Integrated Aeronautical Information Database (IAID). The designation of authoritative databases should be clearly stated in States' AIPs.

Electronic Terrain and Obstacle Data and Aerodrome Mapping Data Bases (AMDB)
(FASID Table AIM-3)

3.15.   FASID Table AIM-3 sets out the requirements for the provision of Terrain and Obstacles Datasets and Aerodrome Mapping Data Bases (AMDB).

3.16.   States should take the necessary measures for the provision of required electronic Terrain and Obstacle Data (eTOD), in accordance with Annex 15 provisions.

3.17.   States should manage the eTOD implementation as a national programme supported by the necessary resources and detailed planning including priorities and timelines for implementation.

3.18.   The implementation of eTOD should involve different Administrations within and outside of the Civil Aviation Authority i.e.: AIS, Aerodromes, Military, National Geographic and Topographic Administrations/Agencies, procedure design services, etc.

3.19.   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 other approved data providers.

3.20.   States should establish formal arrangements to address cross-border issues, to ensure harmonization and more efficient implementation of eTOD.

3.21.   States should take the necessary measures to ensure that the obstacle dataset is maintained up-to-date.

3.22.   States should endeavour to integrate the acquisition of eTOD and AMDB data to realize efficiency gains and to take into account the complementary nature of AMDB and eTOD datasets.

Aeronautical Data Quality
(FASID Table AIM-4)

3.23.   FASID Table AIM-4 sets out the requirements for aeronautical data quality.

3.24.   States should take the necessary measures to ensure that aeronautical information/data it provides meet the regulatory Aeronautical Data quality requirements.

3.25.   The Quality Management System in AIM should define procedures to meet the safety and security management objectives.

3.26.   Recognizing the need to maintain or enhance existing safety levels of operations, States should ensure that any changes to the existing systems or the introduction of new systems used for processing aeronautical data/information are preceded by a safety assessment including hazard identification, risk assessment and mitigation.

3.27.   States should ensure that the Critical, Essential and Routine aeronautical data/information, as specified in Annexes 4 and 15, is transferred by the data originators to the AIM service provider through direct electronic connection, in accordance with the agreed data exchange format.

AIM Certification
(FASID Table AIM-9)

3.28.   FASID Table AIM-9 sets out the requirements for AIM Certification.

3.29.   States should take necessary measures to ensure that AIM Services are provided by Certified AIM Service Provider(s).

3.30.   The Certification of AIM Service Provider(s) should be based on the compliance with all regulatory and ICAO requirements related to the provision of AIM services.

APPENDIX B

MID ANP, VOLUME II, FASID

PART x - AERONAUTICAL INFORMATION MANAGEMENT (AIM)

RECORD OF AMENDMENTS

AMENDMENTS							
P. f. Amdt. Serial No.	**Originator**	**Date of Approval letter**	**Date Entered**	**P. f. Amdt. Serial No.**	**Originator**	**Date of Approval letter**	**Date Entered**

MID ANP, VOLUME II, FASID

PART x - AERONAUTICAL INFORMATION MANAGEMENT (AIM)

1.   INTRODUCTION

1.1.   The material in this part complements that contained in Part x — AIM of the MID Basic ANP and should be taken into consideration in the overall planning processes for the MID region.

1.2.   This part contains the details of the facilities and services to be provided to fulfil the basic requirements of the plan as agreed between the provider and user States concerned. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified. It provides a structured framework for States to plan and to monitor their progress and supports regional and national plans to implement the transition to AIM. This element of the FASID, in conjunction with the MID Basic ANP, is kept under constant review by MIDANPIRG in accordance with its schedule of management, in consultation with user and provider States and with the assistance of the ICAO MID Regional Office.

1.3.   To satisfy new requirements arising from the Global Air Traffic Management Operational Concept, aeronautical information services must transition to a broader concept of aeronautical information management, with a different method of information provision and management given its data-centric nature as opposed to the product-centric nature of AIS. AIM is the dynamic, integrated management of aeronautical information services – safely, economically and efficiently – through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties.

2.   ORGANISATION AND PROVISION OF AIM FACILITIES AND SERVICES

2.1.   AIM requires all aeronautical information to be stored as data sets that can be accessed by user applications. The establishment and maintenance of an Integrated Aeronautical Information Database where data sets are integrated and used to produce current and future AIM products and services is a fundamental step in the transition to AIM. The following AIM FASID tables contain planning criteria and provisions requiring implementation and compliance by States:

- Responsibility for the provision of AIM Services
- Provision of AIM products and services based on the Integrated Aeronautical Information Database (IAID)
- Terrain and Obstacle data sets and Airport Mapping Databases (AMDB)
- Aeronautical Data Quality
- World Geodetic System – 1984 (WGS84)
- Aeronautical Charts
- Production Responsibility for sheets of the World Aeronautical Chart – ICAO 1:1 000 000
- Pre-Flight Information Services
- AIM Certification

2.2.   FASID Table AIM-1 sets out the responsibilities for the provision of AIM services in the MID Region. It takes into account the current situation and new developments specific to the MID Region where States delegate certain AIS/AIM services to other States (e.g. with the establishment of Functional Airspace Blocs (FAB)). The responsibilities for the provision of aeronautical data, products and services in such cases need to be clearly assigned.

2.3.	FASID Table AIM-2 sets out the requirements for the Provision of AIM products and services based on the Integrated Aeronautical Information Database (IAID). It reflects the transition from the current product centric AIS to data centric AIM. For the future digital environment it is important that the authoritative databases are clearly designated and such designation must be published for the users. This is achieved with the concept of the Integrated Aeronautical Information Database (IAID), a single access point for one or more authoritative databases (AIS, Terrain, Obstacles, AMDB, etc) for which the State is responsible.

2.4.	FASID Table AIM-3 sets out the requirements for the provision of Terrain and Obstacles datasets and Aerodrome Mapping Data Bases (AMDB).

The eTOD implementation Checklist at **Attachment A** to Part x - AIM of the MID FASID is developed to assist States in the process of eTOD implementation.

2.5.	FASID Table AIM-4 sets out the requirements for aeronautical data quality.

> **Attachment B** to Part x - AIM of the MID FASID describes the safety and security objectives to be included in the Quality Management System of AIM.

> **Attachment C** to Part x - AIM of the MID FASID lists the data originators and the type of aeronautical data/information required to be exchanged by direct electronic connection.

2.6.	FASID Table AIM-5 sets out the requirements for the implementation of the World Geodetic System – 1984 (WGS-84).The requirement to use a common geodetic system remains essential to facilitate the exchange of data between different systems. The expression of all coordinates in the AIP and charts using WGS-84 is an important first step for the transition to AIM.

2.7.	FASID Table AIM-6 sets out the requirements for the production of aeronautical charts. The provision of digital mapping data bases e.g. AMDB, allows for the provision and use of electronic aeronautical charts. Annex 4 SARPs include the requirement for an Electronic Aerodrome Terrain and Obstacle Chart.

2.8.	FASID Table AIM-7 sets out the responsibilities for the production of the sheets of the World Aeronautical Chart 1: 1 000 000 (WAC). The assignment of the WAC sheets is determined by regional agreement, based on the delineation of areas specified in Appendix 5 to Annex 4 and taking into consideration the cross-border issues.

Note.- The World Aeronautical Chart 1: 1 000 000 provides information to satisfy the requirements of visual air navigation.

2.9.	FASID Table AIM-8 sets out the requirements for the provision of pre-flight information services.

2.10.	FASID Table AIM-9 sets out the requirements for AIM Certification.

Attachment A

ELECTRONIC TERRAIN AND OBSTACLE DATA (eTOD)

IMPLEMENTATION CHECKLIST

INTRODUCTION

The purpose of this eTOD checklist is to assist States in the process of implementation of eTOD. To ensure a safe and efficient implementation of eTOD, the Civil Aviation Authorities should:

− determine the State stakeholders affected, inter-alia:

- Ministry responsible for Transportation/Civil Aviation;
- Ministry responsible for land planning and environment;
- Civil Aviation Authority;
- Aeronautical Information Service Providers (AISP);
- Air Navigation Service Providers (ANSP);
- Aerodrome Service Providers;
- Airlines, Helicopter operators and General Aviation;
- Military;
- Military survey Organization/Agency;
- National Geodetic, Cadastral or State Survey Organisations;
- Commercial survey companies or associations;
- Local Authorities or those responsible for aerodrome safeguarding/construction approval in the vicinity of aerodromes;
- GSM antenna operators;
- Administrations for radio and television broadcasts;
- Power Transmission companies.

− ensure that a Focal Point has been nominated to coordinate all eTOD issues at both the national and international level;

− consider arranging eTOD awareness campaigns and training;

− check the availability of State's policy for the safeguarding of aerodromes from obstacle penetration, consider how effective the policy is and determine if available data can be demonstrated to be in compliance with eTOD requirements. In the absence of a declared or established policy, consider establishing one;

− check the availability of a National obstacle notification and permission process;

− check if National regulation for the provision of eTOD has been developed. In the absence of a National Regulation, consider establishing one, taking into consideration the following:

- the data providers responsible for the provision and processing of data and associated liability issues;
- State's policy with regard to implementing the ICAO Annex 15 SARPs related to eTOD and eventually the notification of differences, if any;
- State's policy with regard to data maintenance;
- consider how and by whom the eTOD will be made available;

- State's policy for the oversight/inspection of all involved parties/administrations in the process of provision of eTOD;
- State's policy for cost-recovery related to the provision of eTOD. Identify how the costs, both initial and ongoing, are to be recovered for each Area and in case charges are to be levied on the use of data, identify the appropriate means/mechanisms by which the revenue can be collected; and

− ensure that necessary resources for the implementation and ongoing maintenance of eTOD have been secured;

− ensure that an Action Plan/Roadmap with clear timelines and assigned responsibilities for the provision of eTOD has been developed;

− ensure that the possible sources of terrain and obstacle data have been identified;

− as part of the planning of eTOD data acquisition activities, consider the integration of an Aerodrome Mapping Data Base survey;

− ensure that the survey requirements for each of the four Areas, including resurvey intervals have been determined;

− ensure that the responsibilities that may be placed upon surveyors to ensure that they use the correct standards, have been identified;

− ensure that an eTOD validation and verification process is established;

− ensure that a mechanism is established to ensure that the quality of eTOD is maintained from the survey up to the end user;

− ensure that cross-border issues have been addressed and consider the establishment of agreements with neighboring States to exchange and harmonize common data, as necessary;

− ensure that the means/media by which each dataset shall be made available have been determined; and

− ensure that means of carrying out oversight/inspections for monitoring progress have been established.

Attachment B

SAFETY AND SECURITY MANAGEMENT OBJECTIVES

The quality management system of the AIM services provider should define procedures to meet the following safety and security management objectives

1. Safety management objectives:

   a. to minimise the contribution to the risk of an aircraft accident arising from data errors as far as reasonably practicable,

   b. to promote awareness of safety around the organisation by sharing lessons arising from safety activities and by involving all staff to propose solutions to identified safety issues and improvements to assist the effectiveness and efficiency of the processes,

   c. to ensure that a function is identified within the organisation being responsible for development and maintenance of the safety management objectives,

   d. to ensure that records are kept and monitoring is carried out to provide safety assurance of their activities,

   e. to ensure improvements are recommended, where needed, to provide assurance of the safety of activities.

   The achievement of the safety management objectives shall be afforded the highest priority over commercial, operational, environmental or social pressures.

2. Security management objectives:

   a. to ensure the security of aeronautical data/information received, produced or otherwise employed so that it is protected from interference and access to it is restricted only to those authorised,

   b. to ensure that the security management measures of an organisation meet appropriate regulatory requirements for critical infrastructure and business continuity, and international standards for security management.

Attachment C

DIGITAL EXCHANGE WITH DATA ORIGINATORS

1) The following aeronautical data/information provided by the data originators should be transferred to the AIM services provider by direct electronic connection in accordance with the agreed data exchange format:

   a) aeronautical information publications (AIP), including amendments;
   b) supplements to the AIP;
   c) the NOTAM and pre-flight information bulletins;
   d) checklists and lists of valid NOTAMs;
   e) electronic obstacle data, or elements thereof, where made available;

   f) electronic terrain data, or elements thereof, where made available;

   g) aerodrome mapping data, where made available.

2) The aeronautical data/information provided by the following data originators should be transferred to the AIM services provider by direct electronic connection in accordance with the agreed data exchange format.

   a) air navigation service providers;

   b) operators of those aerodromes and heliports, for which instrument flight rules (IFR) or Special-visual flight rules (VFR) procedures have been published in national AIP;

   c) public or private entities providing:

      i. services for the origination and provision of survey data;
      ii. procedure design services;
      iii. electronic terrain data;
      iv. electronic obstacle data.

FASID TABLE AIM-1: Responsibility for the provision of AIM Services

EXPLANATION OF THE TABLE

Column:

1	Name of the State or territory
2	Designated international NOTAM Office (NOF)
3	Designated State for AIP production
4	Designated State for aeronautical charts (MAP) production
5	Designated State for the provision of the authoritative Integrated Aeronautical Information Database (IAID)
6	Designated State for the provision of the Pre-flight information services
7	Remarks — additional information, as appropriate.

State	NOF	AIP	MAP	IAID	Pre-flight briefing	Remarks
1	2	3	4	5	6	7
Bahrain						
Egypt						
Iran						
Iraq						
Jordan						
Kuwait						
Lebanon						
Oman						
Qatar						
Saudi Arabia						
Syria						
UAE						
Yemen						

FASID TABLE AIM-2: Provision of AIM products and services based on Integrated Aeronautical Information Database (IAID)

EXPLANATION OF THE TABLE

Column:

1   Name of the State or territory for which the provision of AIM products and services based on the IAID is required.

2   Requirement for the implementation and designation of the authoritative IAID, shown by:

        FI – Fully Implemented

        PI – Partially Implemented

        NI – Not Implemented

        Note 1 — The IAID of a State is a single access point for one or more databases (AIS, Terrain, Obstacles, AMDB, etc).

                The minimum set of databases which should be integrated is defined in Annex 15.

        Note 2 — Information providing detail of "PI" should be given in the Remarks column (the implemented components of the IAID).

        Note 3 — The information related to the designation of the authoritative IAID should be published in the AIP (GEN 3.1)

3   Requirement for an IAID driven AIP production, shown by:

        FC – Fully compliant (eAIP: Text, Tables and Charts)

        PC – Partially compliant

        NC – Not compliant

        Note 4 — AIP production includes, production of AIP, AIP Amendments and AIP Supplements

4   Requirement for an IAID driven NOTAM production, shown by:

        FC – Fully Compliant

        NC – Not compliant

5   Requirement for an IAID driven SNOWTAM production, shown by:

        FC – Fully Compliant

        NC – Not compliant

6   Requirement for an IAID driven PIB production, shown by:

        FC – Fully compliant

        NC – Not compliant

7   Requirement for Charting systems to be interoperable with the IAID, shown by:

FC – Fully compliant

PC – Partially compliant

NC – Not compliant

8   Requirement for Procedure design systems to be interoperable with the IAID, shown by:

FI – Fully Implemented

PI – Partially Implemented

NI – Not Implemented

Note 5 — full implementation includes the use of the IAID for the design of the procedures and for the storage of the encoded procedures in the IAID

9   Requirement for ATS systems to be interoperable with the IAID, shown by:

FI – Fully Implemented

PI – Partially Implemented

NI – Not Implemented

10   Action Plan — short description of the State's Action Plan with regard to the provision of AIM products and services based on the IAID,
including planned date(s) of full compliance, as appropriate.

11   Remarks — additional information, including detail of "PC", "NC", "PI" and "NI", as appropriate.

State	IAID	AIP	NOTAM	SNOWTAM	PIB	Charting	Procedure Design	ATS	Action Plan	Remarks
1	2	3	4	5	6	7	8	9	10	11
Bahrain										
Egypt										
Iran										
Iraq										
Jordan										
Kuwait										
Lebanon										
Oman										
Qatar										
Saudi Arabia										
Syria										
UAE										
Yemen										

FASID TABLE AIM-3: Terrain and Obstacles datasets and Airport Mapping Databases (AMDB)

EXPLANATION OF THE TABLE

Column

1   Name of the State or territory for which Terrain and Obstacles datasets and AMDB are required.

2   Compliance with requirement for the provision of Terrain datasets, shown by:
>   FC – Fully compliant
>   PC – Partially compliant
>   NC – Not compliant

3   Compliance with requirement for the provision of Obstacle datasets, shown by:
>   FC – Fully compliant
>   PC – Partially compliant
>   NC – Not compliant

4   Implementation of AMDB, shown by:
>   FI – Fully Implemented
>   PI – Partially Implemented
>   NI – Not implemented

5   Action plan — short description of the State's Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacles datasets and implementation of AMDB.

6   Remarks— additional information, including detail of "PC" and "NC", as appropriate.

State	Terrain Datasets	Obstacle datasets	AMDB	Action Plan	Remarks
1	2	3	4	5	6
Bahrain					
Egypt					
Iran					
Iraq					
Jordan					
Kuwait					
Lebanon					
Oman					
Qatar					
Saudi Arabia					
Syria					
UAE					
Yemen					

FASID TABLE AIM-4: Aeronautical Data Quality

EXPLANATION OF THE TABLE

Column:

1   Name of the State or territory.

2   Compliance with the requirement for implementation of QMS for Aeronautical Information Services
             including safety and security objectives, shown by:
             FC – Fully compliant
             PC – Partially compliant
             NC – Not compliant

3   Compliance with the requirement for the establishment of formal arrangements with approved data
             originators concerning aeronautical data quality, shown by:
             FC – Fully compliant
             PC – Partially compliant
             NC – Not compliant

4   Implementation of digital data exchange with originators, shown by:
             FI – Fully Implemented
             PI – Partially Implemented
             NI – Not Implemented
             Note 1 — Information providing detail of "PI" and "NI" should be given in the Remarks column (percentage of implementation).

5   Compliance with the requirement for metadata, shown by:
             FC – Fully compliant
             PC – Partially compliant
             NC – Not compliant

6   Compliance with the requirements related to aeronautical data quality monitoring (accuracy, resolution, timeliness, completeness),
             shown by:
             FC – Fully compliant
             PC – Partially compliant
             NC – Not compliant

7   Compliance with the requirements related to aeronautical data integrity monitoring, shown by:

     FC – Fully compliant

     PC – Partially compliant

     NC – Not compliant

8   Compliance with the requirements related to the AIRAC adherence, shown by:

     FC – Fully compliant

     PC – Partially compliant

     NC – Not compliant

9   Action Plan — short description of the State's Action Plan with regard to aeronautical data quality requirements implementation, including planned date(s) of full compliance, as appropriate.

10   Remarks — additional information, including detail of "PC", "NC", "PI" and "NI", as appropriate.

State	QMS	Establishment of formal agreements	Digital data exchange with originators	Metadata	Data quality monitoring	Data integrity monitoring	AIRAC adherence	Action Plan	Remarks
1	2	3	4	5	6	7	8	9	10
Bahrain									
Egypt									
Iran									
Iraq									
Jordan									
Kuwait									
Lebanon									
Oman									
Qatar									
Saudi Arabia									
Syria									
UAE									
Yemen									

FASID TABLE AIM-5: World Geodetic System-1984 (WGS-84)

EXPLANATION OF THE TABLE

Column:

1   Name of the State or territory for which implementation of WGS-84 is required.

2   Compliance with the requirements for implementation of WGS-84 for FIR and Enroute points, shown by:
          FC – Fully compliant
          PC – Partially compliant
          NC – Not compliant

3   Compliance with the requirements for implementation of WGS-84 for Terminal Areas (arrival, departure and instrument approach procedures), shown by:
          FC – Fully compliant
          PC – Partially compliant
          NC – Not compliant

4   Compliance with the requirements for implementation of WGS-84 for Aerodrome, shown by:
          FC – Fully compliant
          PC – Partially compliant
          NC – Not compliant

5   Compliance with the requirements for implementation of Geoid Undulation, shown by:
          FC – Fully compliant
          PC – Partially compliant
          NC – Not compliant

6   Action Plan — short description of the State's Action Plan with regard to WGS-84 implementation, including planned date(s) of full compliance, as appropriate.

7   Remarks — additional information, including detail of "PC" and "NC", as appropriate.

State	FIR/ENR	Terminal	AD	GUND	Action Plan	Remarks
1	2	3	4	5	6	7
Bahrain						
Egypt						
Iran						
Iraq						
Jordan						
Kuwait						
Lebanon						
Oman						
Qatar						
Saudi Arabia						
Syria						
UAE						
Yemen						

FASID TABLE AIM-6: Aeronautical Charts

EXPLANATION OF THE TABLE

Column:

1   Name of the State or territory for which aeronautical charts are required

2   Compliance with the requirements for the Enroute Chart — ICAO (ENRC) and the ATC Surveillance Minimum Altitude Chart — ICAO (ATCSMAC),
shown by:
    FC – Fully compliant
    PC – Partially compliant
    NC – Not compliant

3   Compliance with requirements for ICAO charts related to terminal areas (Instrument Approach Chart, Area Chart, Standard Departure Chart —
Instrument (SID) and Standard Arrival Chart — Instrument (STAR), Visual Approach Chart) shown by:
    FC – Fully compliant
    PC – Partially compliant
    NC – Not compliant

4   Compliance with the requirement for ICAO Aerodrome charts Aerodrome/Heliport Chart, Aerodrome Ground Movement Chart and
Aircraft Parking/Docking Chart, shown by:
    FC – Fully compliant
    PC – Partially compliant
    NC – Not compliant

5   Compliance with the requirements for ICAO Obstacle Charts Aerodrome Obstacle Chart —Type A (Operating Limitations),
Aerodrome Terrain and Obstacle Chart — Electronic and Precision Approach Terrain Chart shown by:
    FC – Fully compliant
    PC – Partially compliant
    NC – Not compliant

6   Compliance with the requirement for ICAO World Aeronautical Chart (WAC), shown by:

          FC – Fully compliant
          PC – Partially compliant
          NC – Not compliant

7   Action plan — short description of the State's Action Plan with regard to aeronautical charts implementation,
          including planned date(s) of full compliance, as appropriate.

8   Remarks — additional information, including detail of "PC" and "NC", as appropriate.

State	ENRC & ATCSMAC	Charts related to Terminal Areas	AD Charts	Obstacle Charts	WAC	Action Plan	Remarks
1	2	3	4	5	6	7	8
Bahrain							
Egypt							
Iran							
Iraq							
Jordan							
Kuwait							
Lebanon							
Oman							
Qatar							
Saudi Arabia							
Syria							
UAE							
Yemen							

FASID TABLE AIM-7: Production responsibility for sheets of the World Aeronautical Chart - ICAO 1:1 000 000

EXPLANATION OF THE TABLE

Column

1   Name of the State accepting production responsibility.

2   World Aeronautical Chart — ICAO 1:1 000 000 sheet number(s) for which production responsibility is accepted.

3   Remarks

Note 1— When Aeronautical Charts — ICAO 1:500 000 or Aeronautical Navigation Charts — ICAO Small Scale, are made available instead of the 1:1 000 000 chart, this is to be indicated in the Remarks column.
Note 2— In those instances where the production responsibility for certain sheets has been accepted by more than one State, these States by mutual agreement should define limits of responsibility for those sheets.

State	Sheet number(s)	Remarks
1	2	3
Bahrain	2547	
Egypt	2447, 2448, 2543, 2544	
Iran	2338, 2339, 2428, 2429, 2443, 2444, 2548	
Iraq	2427, 2445	
Jordan	2426, 2446, 2447	*Note: Jordan to cover its own territory within Amman FIR*
Kuwait	2445	*Note: Kuwait to cover its own territory within Kuwait FIR*
Lebanon	2426	*Note: Lebanon to cover its own territory within Beirut FIR*
Oman	2563, 2670	
Qatar		
Saudi Arabia	2446, 2545, 2546, 2564, 2565, 2566, 2668, 2669	
Syria	2426	*Note: Syria to cover its own territory within Damascus FIR*
UAE		
Yemen	2686, 2687	

FASID TABLE AIM-8: Pre-Flight Information Services

EXPLANATION OF THE TABLE

Column:

1   Name of the State or territory.

2   Compliance with the requirements for the provision of Pre-Flight Information Bulletins (PIB) against each type of PIB, shown by:
            FC – Fully compliant
            PC – Partially compliant
            NC – Not compliant

Note 1 —   AD: Aerodrome type bulletins
            Area: Area type bulletins (FIR or group of FIRs or States)
            FIR route: FIR route specific bulletin
            Narrow route: Narrow path route specific bulletin

3   Compliance with the requirements for the availability of the elements of the Integrated Aeronautical Information Publications (IAIP),
            maps and charts to the flight operations personnel, shown by:
            FC – Fully compliant
            PC – Partially compliant
            NC – Not compliant

4   Requirement for a common point of access to aeronautical information and meteorological information briefings, shown by:
            FI – Fully Implemented
            PI – Partially Implemented
            NI – Not Implemented

5   Action Plan — short description of the State's Action Plan with regard to Pre-Flight Information Services, including planned date(s)
            of full compliance, as appropriate.

6   Remarks — additional information, including detail of "PC", "NC", "PI" and "NI", as appropriate.

State	PIB				IAIP	Aeronautical and Meteorological information	Action Plan	Remarks
	AD	Area	FIR route	Narrow route				
1	2				3	4	5	6
Bahrain								
Egypt								
Iran								
Iraq								
Jordan								
Kuwait								
Lebanon								
Oman								
Qatar								
Saudi Arabia								
Syria								
UAE								
Yemen								

FASID TABLE AIM-9: AIM Certification

EXPLANATION OF THE TABLE

Column:

1   Name of the State or territory for which implementation of AIM Certification is required.

2   Availability of AIM Regulations, shown by:
    FC – Fully compliant
    PC – Partially compliant
    NC – Not compliant

3   Compliance with the requirements for the establishment of a Safety Oversight System for ensuring the effective implementation of
 safety-related policy and procedures in the area of AIM, shown by:
    FC – Fully compliant
    PC – Partially compliant
    NC – Not compliant

Note 1 — A Safety Oversight System is based on the eight (8) Critical Elements (CEs) as defined in the ICAO Safety Oversight Manual (Doc 9734, Part A).

Note 2— As part of the Safety Oversight System, States should, in particular:
    a) establish an entity responsible for the safety oversight of the AIS/AIM service provider(s)(not necessarily limited to the safety oversight
      of AIM) with clearly defined functions and responsibilities, or delegate this function to a Regional/Sub-Regional Organization;
    b) ensure the availability of sufficient number of qualified AIM inspectors;
    c) establish minimum qualifications and experience for the AIM inspectorate staff;
    d) establish detailed job descriptions reflecting all the regulatory and safety oversight tasks for the AIM inspectorate staff;
    e) establish the necessary procedures for the AIM inspectorate staff;
    f) establish and implement a formal surveillance programme for the continuing supervision of the AIS/AIM service provider(s) and ensure
      that safety oversight is effectively conducted; and
    g) establish and implement a mechanism/system for the elimination of deficiencies identified by the AIM inspectorate staff.

4 Compliance with the requirements for implementation of AIM certification, shown by:

    FC – Fully compliant

    PC – Partially compliant

    NC – Not compliant

Note 3 — AIM Certification may be performed within the framework of ANS Certification

5 Action Plan — short description of the State's Action Plan with regard to the implementation of the different requirements of AIM certification, including planned date(s) of full compliance, as appropriate.

6 Remarks — additional information, including detail of "PC" and "NC", as appropriate

State	AIM Regulations	AIM Safety Oversight	AIM Certification	Action Plan	Remarks
1	2	3	4	5	6
Bahrain					
Egypt					
Iran					
Iraq					
Jordan					
Kuwait					
Lebanon					
Oman					
Qatar					
Saudi Arabia					
Syria					
UAE					
Yemen					

–END–