MINUTES OF THE FOURTH NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN WORKING GROUP (NACC/WG) AERONAUTICAL INFORMATION MANAGEMENT IMPLEMENTATION TASK FORCE MEETING (AIM/TF/4)

Online, 11 May 2021

List of Participants:
> Refer to **Appendix A**.

Agenda
> Refer to **Appendix B**.

Objective:
The objective of the meeting was to update the Regional Aeronautical Information Management (AIM) transition plan, initiating the implementation of the CAR Region AIM Collaborative Plan, AIM Training Task Force (TRAIN) matters, and NOTAM issues, among other relevant aspects.

ICAO Documentation and Presentations

The documentation and presentations is available at the following link, as listed in IP/01:
> https://www.icao.int/NACC/Pages/meetings-2021-aimtf4.aspx

Introduction

1.   Mr. Julio Siu, Deputy Regional Director of the North American, Central American and Caribbean (NACC) Regional Office of the International Civil Aviation Organization (ICAO), welcomed the participants, provided opening remarks, and officially opened the meeting.

2.   The AIM/TF/04 Meeting was held with the participation of Mrs. Natasha Leonora-Belefanti (Curaçao), AIM Implementation Task Force (AIM/TF) Rapporteur. Mr. Raúl Martínez, Regional Officer, Aeronautical Information Management, of the ICAO NACC Regional Office served as Secretary of the Meeting.

Discussion

Agenda Item 1:   Approval of the Provisional Agenda, Schedule and Working Method

1.1   Under WP/01, the Secretariat and the AIM/TF Rapporteur invited the Meeting to approve the provisional agenda and schedule. The Meeting approved the Agenda as presented in the invitation letter and did not make any changes to the schedule. The objectives and overall expectations of the Meeting were presented as well.

Agenda Item 2: **Review and Update of a New Updated AIM Regional Plan, including AIM collaborative Plan**

2.1   Under P/02, the Secretariat showed the Meeting the source documents that have been considered for the 2022-2024 AIM Regional Plan, these ICAO documents include the *Global Air Navigation Plan*, 6th. Edition (GANP), the Aviation System Block Upgrade (ASBU) document, information from the Basic Building Blocks (BBBs), Annexes and Procedures for Air Navigation Services (PANS), mainly, covering important Aeronautical Information Management (AIM) aspects based on data centric approach:

- Annex - performance based ICAO Standard and Recommended Practices (SARPs)
- PANS - technical and procedural provisions - Introduction of the aeronautical data catalogue
- Elevate certain procedures from guidance to PANS
- Support data centricity with processes and procedures - Introduce digital data sets
- Support interoperability
- PANS deviation to be published in Aeronautical Information Publication (AIP) only (Differences)
- Supports stepwise transition/migration

2.2   The Meeting reviewed the new AIM/TF Work Programme which currently considers the provisions of the GANP and the requirements of Key Performance Indicators (KPIs) defined by safety. In this regard the TF consider the integration of the development of the AIM Collaborative Plan and the ICAO AIM tracking website for its Work Programme.. The Meeting formulated the following Decision:

DECISION AIM/TF/04/01 INTEGRATION OF THE AIM/TF WORK PROGRAMME, THE AIM COLLABORATIVE PLAN AND THE ICAO AIM TRACKING WEBSITE	
What: That, the AIM/TF approves the integration of the AIM Collaborative Plan and the ICAO AIM tracking website in the AIM/TF Work Programme.	**Expected impact:** ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Operational/Technical
Why: To complete a 2022-2024 AIM Regional Plan	
When: Before the AIM/TF/5 Meeting	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☐ ICAO ☒ Other:	International Organizations

2.3   The Secretariat emphasize to the Meeting on the importance to develop the AIM Regulatory framework related with the following concepts:

- Data origination
- Quality assurance
- Metadata and quality reporting
- Data delivery
- Error handling

2.4   In addition, The AIM Aeronautical Information Services (AIS) Basic Modules and Elements related to the GANP in relation with the BBBs for Strategic Planning and implementation were explained:
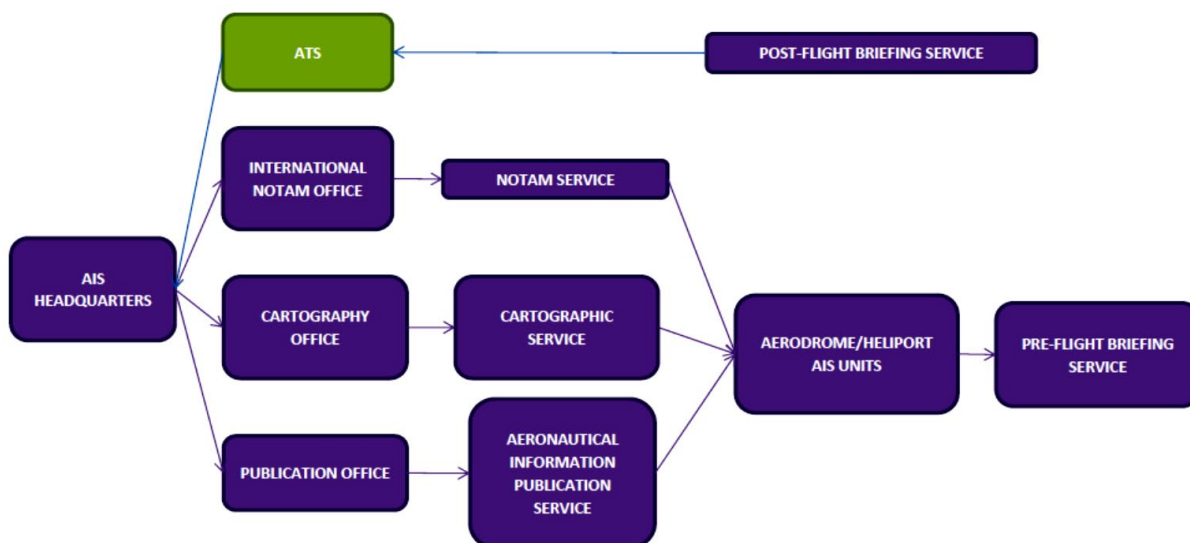
Agenda Item 3:   **Update to the AIM Working Plan**

3.1   Under this agenda item, the Secretariat presented IP/02, aiming to review and update the current AIM Work Plan incorporating new activities to be delivered during the next year 2022 including all related to AIM 2.0

3.2   The Meeting agreed on the updates showed in track changes included in **Appendix C** to this Minute for ease of reference.

Agenda Item 4:   **States Status: Quality Management System (QMS), AIM Transition, Electronic Terrain and Obstacle Data (eTOD) and System Wide Information Management (SWIM) Implementation (AIM 2.0)**

4.1   Under WP/04, the Meeting discussed and received updates on the actions and implementation tasks towards System Wide Information Management (SWIM), establishing goals for 2022-2024. The progress of States on the implementation of the PANS - AIM (Doc 10066) requirements and the identification of difficulties for implementation were also reviewed.

4.2   The AIM/TF Rapporteur provided important information including graphs indicating the advances per State in the Region, throughout the three Phases (21 steps) of the transition from AIS to AIM, expressed in percentages in an objective way. This information serves as support to AIM Regional implementation in order to accelerate and monitor the development for transition phases.

4.3   The AIM/TF Rapporteur presented an Excel file, whereby all State members were required to participate actively and update their information regarding the current status of the transition from AIS to AIM, so that every State is represented. Most TF members obtain the required information and deliver it in a timely and accurate manner to the AIM/TF Rapporteur yearly. States must submit and/or update their information yearly or whenever a step has been implemented.

4.4   The progress in the AIS to AIM Transition Steps and SWIM Implementation (AIM 2.0) were discussed, with minor progress due to the COVID-19 pandemic affecting follow up to this important matter. Contributing factors have been the decrease in flight operations, and therefore the limited financial resources. The Meeting concluded that, given the effort to maintain compliance to Annex 15 – *Aeronautical Information Services*, Doc 10066 - *PANS-AIM* and the updated Doc 8126 – *Aeronautical Information Services Manual* in four sections. It is important for ICAO NACC Regional Office to reconsider regionally (and probably globally too), the set requested ASBU implementation dates. The Meeting adopted the following Draft Conclusion:

DRAFT CONCLUSION AIM/TF/04/02 AIM TRANSITION TO AIM 2.0	

What:
    That, in order to support the implementation of the SWIM concept and reach a continuous evolution to AIM 2.0, States/Territories:
 	
    a) focus on electronic formats for data and information;
    b) focus on the need for quality-data from authoritative sources;
    c) implement aeronautical information in digital format for interchange;
    d) focus on the need for collaborative environments among stakeholders for enhanced quality service; and
    e) report to ICAO on the status of literal a) to d) by December 2024
	Expected impact:
	☐ Political / Global
	☐ Inter-regional
	☐ Economic
	☐ Environmental
	☒ Operational/Technical

Why: To support SWIM Implementation	
When: December 2024	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☒ ICAO ☐ Other:	

Agenda Item 5: **NOTAM Contingency Plans for NAM/CAR Regions and Tasks Related with the NOTAM Global Campaign: removal of permanent NOTAM or as Indicated by ICAO Doc 8126 - Aeronautical Information Services Manual**

5.1   Under WP/05, the AIM/TF Rapporteur highlighted the need of Regional Contingency Planning to ensure the continuity of Aeronautical Information Management (AIM) and/or Notice to Airmen (NOTAM) services, while maintaining safety at a high level, according to the status of implementation of AIM and/or NOTAM Contingency Plans in the Region. Furthermore, States were encouraged to sign approved Letters of Agreement (LoAs) among States, Territories and International Organizations.

5.2   The AIM/TF Meeting agreed to develop a kind of catalogue that is regularly updated as the "Regional Catalogue of NOTAM Contingency Plans". The main objectives are that States implement the following actions:

- develop national AIM – NOTAM Contingency Plans
- update existing contingency plans with reference to recent developments and ensure their completeness and inter-operability for data sets exchange
- coordinate contingency NOTAM with adjacent Flight Information Regions (FIRs) in order to facilitate functionality of contingency plans
- facilitate publication of contingency plans for implementation in the event of disruption
- initiate the establishment of an inter-regional contingency coordination team, whose function shall be to coordinate the continuity of flow of international air traffic at the regional or inter-regional levels in the event of full or partial unavailability of any portion of airspace
- integrate Contingency Plans with Air Traffic Management (ATM) Contingency Plans

5.3   The AIM/TF Rapporteur mentioned that the requirements for the implementation of Performance Based Navigation (PBN) and the autonomous navigation systems introduced the need for new AIM requirements in order to ensure the timely quality information and data distribution. All this is aligned with the aim to reduce or eliminate the possible impact of labour conflicts and natural disasters on the continuous provision of the Air Navigation Services (ANS), providing the necessary technical and management measures for coordination and operational procedures to be adopted before, during, and after any contingency phase or stage

5.4   The following progress was reported in AIM/NOTAM Contingency Plans for NAM/CAR Regions and the tasks related with the NOTAM Global Campaign:

- The AIM/TF has created an Ad-hoc AIM Contingency Plan Working Group.
- Various teleconference meetings have been held.
- AIM and NOTAM Contingency Plan Templates have been created, in order to facilitate States to provide their plans in a proper way. Plan Templates are shown in **Appendices D and E** to this Minute.
- A meeting has been carried out with the ICAO NACC Regional Office ATM Contingency Plan Project Leader.

5.5   The Meeting recalled that during previous AIM/TF meetings it was emphasized the need to have NOTAM contingency plans developed to support ATM on major routes in terms of air traffic flow across the FIRs. It is fundamental that the plan is not limited to the States borders but cross borders with other States being thus inter-regional. In this regard, the AIM Ad-hoc Group of selected States, Territories and International Organizations facilitated in the development of a robust and efficient regional NOTAM contingency plan template.

5.6   The Meeting was invited to sign a Memorandum of Understanding (MoU)/LoA for implementation of AIM and/or NOTAM Contingency Plans State Authorities, Air Navigation Service Providers (ANSPs) and International Organizations to address responsibilities relating to Separation Standards to be applied. The NOTAM Action should ensure adequate coordination of the Contingency Plans with civil and military airspace users.

5.7   Another perspective was also discussed: the military interaction during various contingency scenarios including security. Their roles in safeguarding the security of States as well as collaborating to ensure safety of the international air transport systems are not compromised, or potential threats that may affect aviation infrastructure, systems and operations. To enhance Contingency Planning, States were encouraged to:

- implement Controller-Pilot Data Link Communication (CPDLC), Air Traffic Services Inter-facility Data Communication (AIDC) and Aeronautical Message Handling System (AMHS)
- complete transition from AIS to AIM
- involve with military stakeholders
- ensure adequate conduct of safety assessment prior to Contingency Plans
- ensure the application of surveillance radar safety nets when available
- collaborate in the implementation of surveillance data sharing within the NAM/CAR Regions
- ensure regular review of Contingency Plans and MoUs
- consider the inclusion of cybersecurity threats in their Contingency Plans
- ensure adequate information flow during contingency
- publish their Contingency Plans by 31 December 2021 for effective implementation on 2 Aeronautical Information Regulation and Control (AIRAC) Cycles after 2022.

5.8   Under P/01 "NOTAM Validity Tracking", the importance of NOTAM with direct operational significance and could immediately affect aircraft operations initiating with Flight Plan (FPL) and all the flight phases was presented. Moreover, NOTAM should provide such information with the following properties:

- Timely delivered *(consider enough days of notice for users' operational purposes)*
- Quick access
- Accurate and easy to understand
- Relevant to the type of operation and the route being flown

5.9   The Rapporteur developed a filing tool, in order to be reviewed daily at the beginning and end of every shift and as soon as a NOTAM is published. This tool is for both Data Originator and AIS Unit. The NOTAM Validity Tracking Tool provides:

- NOTAM number, summarized title and location
- Creation/published date
- Effective date item B
- Expire date item C
- Time left for the NOTAM to self-expire or to be CANCELLED or REPLACED
- Duration of the NOTAM

5.10   The AIM/TF Rapporteur presented WP/08 stressing the need for Contingency Planning in CAR Region in order to ensure the continuity of NOTAM services.

5.11   In addition the Global Campaign on NOTAM Improvement (NOTAM2021) was presented, the main objective of this campaign is to significantly reduce global number of old NOTAM still in circulation. The tasks related with the NOTAM Global Campaign within the AIM/TF look to develop means to help States into minimizing Outstanding NOTAM (perm) and assure NOTAM published in accordance to Annex 15, Doc 8126 and PANS-AIM Doc 10066.

Agenda Item 6:   AIM 2.0 Training Requirements Official Documentation

6.1   Under WP/06, it was presented the AIM/TF recommended competence-based training plan for AIM staff: AIS, NOTAM, Air Traffic Services Reporting Office (ARO) and/or Flight Plan (FPL) personnel, including a Training curriculum. Training of AIM is lacking or non-existent for various States, and no ICAO or State standardized training plan or training curriculum is in place

6.2   On the other hand, the main objective for the AIM/TF was to finalize the developed training curriculum of the competence-based training plan. This was presented to the required authorities for the adoption to the regional and global implementation and is pending approvals.

6.3   Several tasks were carried out regarding AIM 2.0 Training Requirements Official Documentation. The AIM/TF has created and introduced the official and standardized Training curriculum for the basic training and guided skilled training for AIM staff. The development of an AIM staff Standardized Training Curriculum and Manual is beneficial for the personnel exercising their duties. The Curriculum (**Appendix F)** is divided into the following training sections:

- **Module 1.**
  - Basic Training, which serves as a basic training session on Aviation and AIM staff functions, the related subjects, in the form of a foundation training (Appendix F, Module 1), and

- **Module 2.**
  - o This section includes the Skilled Training section, which is a specialized and interactive training to the AIM staff: AIS, ARO and/or FPL personnel, once Module 1 is completed. This assures the related AIM (Appendix F, Module 2a) and ARO/FPL functions (Appendix F, Module 2b) are properly carried out and includes On-The-Job training as well after completion of the theory course.

6.4   The Meeting concluded that a standardized and same level training is more than needed due to the uniform method of functioning within the AIM. Even more, the high requirements of the PANS-AIM and expected knowledge and support from the AIM personnel on the delivered/published information, requires skilled professionals, who are able to interact with other AIM personnel at a same level and understanding

6.6   Under IP/03 the AIM/TF Rapporteur presented the importance of a global English Language Proficiency (ELP) standards be included on the ICAO language rating scale, at *Level 4 and up* for AIM Personnel, especially now with all the technical requirements for data management and operational information distributions. English is, the most commonly used language for international aviation communications, and its major component of communication is language proficiency. The form of communication that is addressed by the ICAO language proficiency requirements, which is this traditional model, emphasizing spoken verbal (oral) communication.
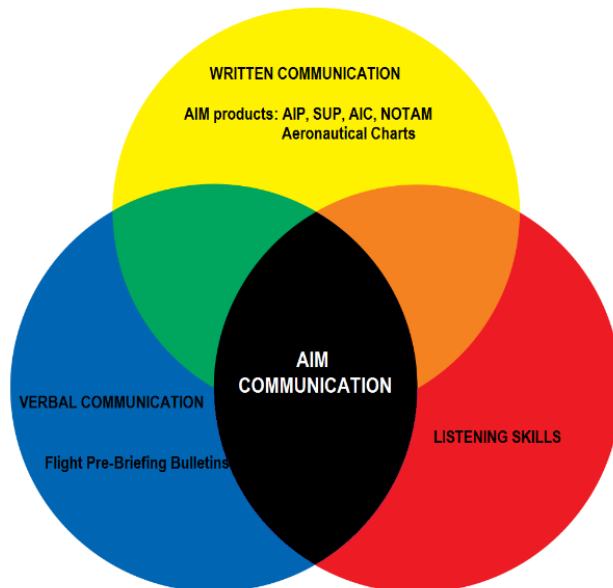
6.7   As indicated in ICAO Doc 9835, language proficiency is not merely knowledge of a set of grammar rules, vocabulary and ways of pronouncing sounds. It is a complex interaction of that knowledge with a number of skills and abilities. ICAO Operational Level 4 is considered the minimum level acceptable to ensure safe operations, yet the following conflicts with the objective of the AIM. Namely, the scope and focus of the ICAO Language Proficiency Rating Scale are specific and unique in several important ways, whereby it addresses only spoken language (speaking and listening) skill and does not address reading and writing skills

Agenda Item 7:   Other Business

7.1   No other business were discussed under this Agenda Item.

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North American, Central American and Caribbean Office (NACC)
Oficina para Norteamérica, Centroamérica y Caribe (NACC)

Fourth North American, Central American and Caribbean Working Group (NACC/WG) Aeronautical Information Management Implementation Task Force Meeting / Cuarta Reunión del Grupo de Tarea para la Implementación de la Gestión de la Información Aeronáutica del Grupo de Trabajo de Norteamérica, Centroamérica y Caribe
(AIM/TF/4)
Online, 11 May 2021 / En línea, 11 de mayo de 2021

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FOURTH NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN WORKING GROUP (NACC/WG)
AERONAUTICAL INFORMATION MANAGEMENT IMPLEMENTATION TASK FORCE MEETING
(AIM/TF/4)
Online, 11 May 2021

AGENDA

Agenda Item 1: Approval of the Provisional Agenda, Schedule and Working Method

Agenda Item 2: Review and Update of a New Updated AIM Regional Plan, including AIM Collaborative Plan

Agenda Item 3: Update to the AIM Working Plan

Agenda Item 4: States Status: Quality Management System (QMS), AIM Transition, Electronic Terrain and Obstacle Data (eTOD) and System Wide Information Management (SWIM) Implementation (AIM 2.0)

Agenda Item 5: NOTAM Contingency Plans for NAM/CAR Regions and Tasks Related with the NOTAM Global Campaign: removal of permanent NOTAMs or as Indicated by ICAO Doc 8126 - *Aeronautical Information Services Manual*

Agenda Item 6: AIM 2.0 Training Requirements Official Documentation

Agenda Item 7: Other Business

EXPLANATORY NOTES

Agenda Item 1:   **Adoption of the Agenda and Schedule**

Under this agenda item, the Meeting will review the agenda and schedule, and adopt them. The objectives and overall expectations of the meeting will be presented.

Agenda Item 2:   **Review and Update of a New Updated AIM Regional Plan, including AIM Collaborative Plan**

The Meeting will take note of the new AIM Work Plan that considers the provisions of the Global Air Navigation Plan (GANP) 6th. Ed. and the requirements of Key Performance Indicators posed by safety and the development of the AIM Collaborative Plan and the ICAO AIM tracking website will also be reviewed

Agenda Item 3:   **Update to the AIM Work Plan**

Under this agenda item, the Meeting will review and update the current AIM Work Plan incorporating activities to be delivered during the next Sixth North American, Central American and Caribbean Working Group (NACC/WG/6) Meeting related to AIM 2.0

Agenda Item 4:   **States Status: Quality Management System (QMS), AIM Transition, Electronic Terrain and Obstacle Data (eTOD) and System Wide Information Management (SWIM) Implementation (AIM 2.0**

Under this Agenda item, the Meeting will review and provide updates on the actions and implementation tasks towards SWIM, establishing goals for the next NACC/WG/06 Meeting as well as the Nineteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/19). The progress of the States on the implementation of the PANS AIM (Doc 10066) and the identification of difficulties for said Implementation will also be reviewed.

Agenda Item 5:   **NOTAM Contingency Plans for NAM/CAR Regions and Tasks Related with the NOTAM Global Campaign: removal of permanent NOTAMs or as Indicated by ICAO Doc 8126 - *Aeronautical Information Services Manual***

Under this agenda item, the Meeting will work on the approach of AIM contingency plans, as well as the Tasks related with the NOTAM Global Campaign: removal of permanent NOTAMs or as Indicated by ICAO Doc 8126.

Agenda Item 6:   **Other Business**

Under this agenda item, the Meeting will analyse any other matter than cannot be addressed under the previous agenda items.

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APPENDIX / APÉNDICE

AIM Task Force work programme

TASK FORCE FOR THE IMPLEMENTATION OF AERONAUTICAL INFORMATION MANAGEMENT (AIM)	**GRUPO DE TAREA PARA LA IMPLEMENTACIÓN DE LA GESTIÓN DE INFORMACIÓN AERONÁUTICA (AIM)**

1.   Background

During the first meeting of the ANI/WG, it was agreed to activate a group working for the AIM implementation formed to support and make more efficient the implementation activities AIM in accordance with the road map for the transition from AIS to AIM. This task group will have to improve processes and coordination among States, Territories and international organizations, as well as offer to the regional planning groups and States, practical guidance and advice for the development of implementation strategies of aeronautical information management. On the other hand, propose the tasks that have to be done and corresponding implementation schedule, as well as update and report its progress to the ~~ANI~~NACC/WG based on the plan of action for these tasks

2.   Responsibilities

The Task Force is responsible by:

a)   Management of the work programme
b)   Support States to complete the transition to the AIM
c)   Assisting States with the implementation of Phase 1, 2 and Phase 3 of the ICAO Roadmap, in preparation for the establishment of the System Wide Information Management (SWIM), in consideration of the AIM based on performance
d)   Periodically ask States for data, which allows producing statistics to monitor their status of AIM implementation and update the AIM Collaborative Plan

3.   Work Methods

The Task Force:

a)   It shall submit its work programme containing activities in terms of: objectives, responsibilities, deliverables results and times
b)   Prevent duplication of work within the ~~ANI~~NACC/WG and will maintain close coordination between existing entities to optimize the use of available resources and expertise
c)   Designate if so deemed Ad hoc groups to work on specific activities and issues and organize tasks and clearly defined activities
d)   Coordinate tasks to maximize efficiency and reduce costs through electronic media, including: emails, ~~phone and~~ teleconferencing, and convene meetings where necessary
e)   It will be notified and will coordinate the progress of the tasks assigned to the ~~ANI~~NACC/WG

1.   Antecedentes

Durante la primera reunión del ANI/WG, se acordó activar un Grupo de Trabajo para la Implementación AIM formado con el fin de apoyar y hacer más eficientes las actividades de implementación AIM de acuerdo con la Hoja de ruta para la transición del AIS al AIM. Este Grupo de Tarea habrá de mejorar los procesos y la coordinación entre los Estados, Territorios y organizaciones internacionales, así como, ofrecer a los grupos de planificación regionales y a los Estados, orientación práctica y asesoramiento para el desarrollo de las estrategias de implantación de la gestión de información aeronáutica. Por otra parte, proponer las tareas que han de realizarse, el calendario de implantación correspondiente, así como actualizar y notificar su avance al ~~ANI~~NACC/WG con base en el plan de acción para estas tareas.

2.   Responsabilidades

El Grupo de Tarea es responsable de:

a)   Gestión del Programa de Trabajo
b)   Apoyar a los Estados a finalizar la transición a la AIM
c)   Apoyar a los Estados con la implementación de la Fase 1, 2 y Fase 3 de la Hoja de Ruta de OACI, en preparación para el establecimiento de Gestión de la información de todo el sistema (SWIM), en consideración de AIM basada en performance
d)   Solicitar periódicamente a los Estados datos que permitan elaborar estadísticas para monitorear su estado de implementación AIM y actualizar el Plan Colaborativo AIM

3.   Métodos de trabajo

El Grupo de Tarea:

a)   Presentará su programa de trabajo conteniendo actividades en términos de: objetivos, responsabilidades, resultados entregables y tiempos
b)   Evitará duplicación de trabajo dentro del ~~ANI~~NACC/WG y mantendrá estrecha coordinación entre las entidades existentes para optimizar el uso de recursos y experiencia disponibles
c)   Designará si así lo considera Grupos Ad hoc para trabajar en temas y actividades específicas y organizar las tareas y actividades claramente definidas
d)   Coordinará las tareas para maximizar eficiencia y reducir costos a través de medios electrónicos, incluyendo: emails, ~~teléfono y~~ teleconferencias, y convocará reuniones cuando sea necesario
e)   Notificará y coordinará el avance de las tareas asignadas al ~~ANI~~NACC/WG

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AIM TF 04 — IP/NI 02

Work Programme / Programa de trabajo

AIM TASK FORCE (AIM/TF) / GRUPO DE TAREA AIM

No	Activity / Actividad	Objective / Objetivo	Responsible / Responsible	Deliverable / Entregable	Date / Fecha	Status / Estado
3	Follow-up progress of amendments of ICAO Annexes 4 and 15, existing and new ICAO Manuals to support digital requirements as eAIP, eCharts, using GIS, etc. Seguimiento a los avances de enmiendas de los Anexos 4 y 15 de OACI, Manuales existentes y nuevos de OACI para soportar los requerimientos digitales como eAIP, cartas aeronáuticas electrónicas, usando GIS, etc.	Comply with the process of introducing and implementing Amendments to Annexes 4 and 15 of the Chicago Convention and related Manuals Cumplir con el proceso de introducción e implementar enmiendas a los Anexos 4 y 15 del Convenio de Chicago y Manuales relacionados	ICAO OACI	Report to ANIWG Informe al ANIWG	2018	Valid Valida Completed Completada
4	Develop a format for progress reports and propose it to the States/Territories/International Organizations Elaborar formato de avance de informes y proponerlo a los Estados/Territorios y Organizaciones Internacionales	Report regularly on the generation and distribution of Integrated Aeronautical Information Package(IAIP) Informar periódicamente sobre la generación y distribución de la Documentación integrada de información Aeronáutica (IAIP)	States AIM/TF Estados AIM/TF	Progress report format Formato de informe de avance	2016	Valid Valida Completed Completada
5	Develop a methodology for the implementation of QMS processes and quality management of the electronic automation in States, Territories and International Organizations that ensures the quality, safety and effectiveness related to the production and distribution of electronic information Desarrollar una metodología para la implementación de los procesos QMS y gestión de la calidad en la automatización electrónica en los Estados, Territorios y Organizaciones Internacionales que asegure la calidad, la seguridad operacional y la efectividad relacionada con la producción y distribución electrónica de la información	Ensure the quality in the aeronautical information management according to requirements of users Asegurar la calidad en la gestión de información aeronáutica de acuerdo a los requerimientos de los usuarios	ICAO AIM/TF OACI AIM/TF	Consultation to States that have QMS, by reference OR NACC ICAO Realizar consulta a Estados que cuentan con QMS, mediante referencia de OR NACC OACI	2016	Valid Valida Completed Completada
6	Advising States in collaboration and coordination of information requirements through a system of domains allowing wide information management in preparation for the implementation of the SWIM, with the contribution of other States and Organizations sharing the experience in taking decisions and progress of its programmes Asesorar a los Estados en la colaboración y coordinación de los requerimientos de información a través de un sistema de dominios permitiendo amplia gestión de información en preparación para la implementación del SWIM, con la contribución de otros Estados y Organizaciones compartiendo la experiencia para la toma de decisiones y avance de sus programas	Assist States, Territories and International Organizations in making appropriate decisions related to current aeronautical information services towards transition to the AIM and define acceptable levels of safety and performance Asistir a los Estados, Territorios y Organizaciones Internacionales con la toma de decisiones apropiadas relacionada con los servicios actuales de información aeronáutica hacia la transición a la AIM y definir los niveles aceptables de seguridad y performance	ICAO AIM/TF OACI AIM/TF	Prepare periodic Bulletins Elaborar boletines periódicos	2018	Valid Valida Completed Completada

No	Activity / Actividad	Objective / Objetivo	Responsible / Responsible	Deliverable / Entregable	Date / Fecha	Status / Estado
7 1	Coordinate activities such as W orkshops and Seminars to train human resources in the interpretation and application of new SARPS and technological advances that provide the framework for an interoperable Global System.	Assist States, Territories and International Organizations with the process of transition to AIM, in order to implement ICAO standards to establish a harmonized operating environment performance-based		Perform a Seminar or Workshop	20182023	Valid Valida
	Coordinar actividades como Talleres y Seminarios para capacitar al Recurso Humano en la interpretación y aplicación de nuevos SARPS y avances tecnológicos que proporcionen el marco para un sistema Global interoperable	Asistir a los Estados, Territorios y Organizaciones Internacionas con el proceso de transición a AIM, con el fin de implementar las Normas de la OACI para establecer un entorno operativo armonizado basado en el performance	ICAO AIM/TF OACI AIM/TF	Realizar Seminario o Taller		
8	Encourage the adoption of cooperation agreements between NOTAM offices (NOF), and the update of contingency plans (for weather events and/or volcanic) in harmonization with ATM contingency plans	Develop AIM to support the Air traffic management operational concept; including NOTAM contingency plans	ICAO AIM/TF OACI AIM/TF	Generate support through reference OR. NACC. ICAO	2018	Valid Valida Completed Completada
	Incentivar la adopción de convenios de cooperación entre oficinas NOTAM (NOF) y la actualización de planes de contingencia (por eventos climatológicos y/o vulcanológicos) en armonización con los planes de contingencia ATM	Desarrollar AIM para apoyar el Concepto Operacional de Gestión del Tránsito Aéreo; incluyendo los planes de contingencia NOTAM		Generar apoyo mediante referencia de OR NACC OACI		
9	Consult the experience of States in the acquisition of integrated solutions to provide guidance and assistance to the States to implement a performance-based approach	Ensure that AIM solutions should be harmonized and integrated at a regional and international level, in preparation for the SWIM implementation	ICAO AIM/TF OACI AIM/TF	Make consult through reference OR NACC ICAO	2020	Valid Valida Completed Completada
	Consultar la experiencia de los Estados en la adquisición de soluciones integradas para brindar orientación y ayuda a los Estados para implementar un enfoque basado en performance	Asegurar que las soluciones AIM se armonicen e integren a nivel regional e internacional, en preparación para la implementación del SWIM		Realizar consulta mediante referencia de OR NACC OACI		
12 2	Develop a format for progress reports and propose it to the States/Territories/International Organizations	Develop an agreement of high-level management of a nationwide eTOD programme		Agreement format	20182023	Valid Valida
	Elaborar formato de avance de informes y proponerlo a los Estados/Territorios y Organizaciones Internacionales	Desarrollar un acuerdo de alto-nivel para gestión de un programa nacional eTOD	ICAO AIM/TF OACI AIM/TF	Formato de acuerdo		
3	Examine the means of aeronautical data exchange used in other regions and application in the NACC Region	Take the Global experiences and best practices on the means of aeronautical data exchange		Report to the Task Force the findings in order to apply on NAM/CAR Regions	2024	Valid Valida
	Examinar los medios de intercambio de datos aeronáuticos utilizados en otras regiones y su aplicación en la Región NACC.	Aprovechar las experiencias y mejores prácticas Mundiales sobre los medios de intercambio de datos aeronáuticos.	ICAO AIM/TF OACI AIM/TF	Informar al Grupo de Trabajo los hallazgos para aplicar en las Regiones NAM/CAR		
4	Monitor the transition from AIS to AIM, and in particular, monitor development of the amendments of Annexes 4 and 15, PANS-AIM (Doc 10066) and guidance documents under development by ICAO. And the GANP new Editions.	Keep the AIM implementation context updated according to the changes in the Basic Documents in AIM and the GANP		Continuous updating of the AIM TF work-program	2024	Valid Valida
	Monitorear la transición de AIS a AIM y, en particular, monitorear el desarrollo de las enmiendas de los Anexos 4 y 15, PANS-AIM (Doc 10066) y documentos de orientación en desarrollo por la OACI. Y las nuevas Ediciones del GANP.	Mantener actualizado el contexto de implementación AIM de acuerdo a los cambios en los Documentos básicos en AIM y el GANP.	ICAO AIM/TF OACI AIM/TF	Actualización continua del Programa de trabajo del AIM TF.		

No	Activity / Actividad	Objective / Objetivo	Responsible / Responsible	Deliverable / Entregable	Date / Fecha	Status / Estado
5	Monitor and review technical and operating developments in the AIM field especially in the area of database management. Monitorear y revisar los desarrollos técnicos y operativos en el campo AIM, especialmente en el área de administración de bases de datos.	Support the implementation of the PANS AIM Data Sets. Apoyar la implementación de los Conjuntos de Datos del PANS AIM.	ICAO AIM/TF OACI AIM/TF	Report to the Task Force the findings in order to consider on NAM/CAR Regions. Informar al Grupo de Trabajo los hallazgos para considerar en las Regiones NAM/CAR	2024	Valid Válida
6	Promote the implementation of the aeronautical information exchange model (AIXM) in the eAIP and aeronautical data management on the civil aviation authorities in the NAM/CAR Regions. Promover la implementación del modelo de intercambio de información aeronáutica (AIXM) en el eAIP y de gestión de datos aeronáuticos en las autoridades de aviación civil en las Regiones NAM/CAR	Support the interoperability of information and eAIP Data in the NACC Region and other regions. Apoyar la interoperabilidad de la información y Datos eAIP en la Región NACC y otras regiones.	ICAO OACI	State Letters; Seminars and guide material. Cartas a los Estados; Seminarios y material guía.	2024	Valid Válida

— FIN —

LETTER OF AGREEMENT BETWEEN
ORGANIZATION

AND

ORGANIZATION
FOR

An Aeronautical Data Sharing Agreement and a Failover/Disaster Recovery Environment

TABLE OF CONTENTS

OPERATIONAL LETTER OF AGREEMENT

This Operational Letter of Agreement (LOA) is between the:

ORGANIZATION A located at Street represented by Name, Director

And

ORGANIZATION B located at Street represented by Name, Director

(Both hereinafter also referred to collectively as "the Parties")

1. **OBJECTIVE**
1.1. This LOA summarizes the mutual interest of the Parties in using the VENDOR system(s) that are installed at each of the Parties site(s) to implement:

    1.1.1. an Aeronautical Data Sharing agreement;
    1.1.2. a Failover/Disaster Recovery environment; and
    1.1.3. to create further collaboration between the States in the Caribbean region.

2. **SCOPE**
2.1. This LOA is strictly intended primarily to establish a basis for the responsibility descriptions of the Parties, defined in the below table.

3. **BUSINESS PURPOSE**
3.1. ORGANIZATION A is responsible for the management, dissemination, and distribution of Aeronautical Information Services ("AIS") on behalf of Country/Countries (as "XXXX").
3.2. ORGANIZATION B is responsible for the management, dissemination, and distribution of AIS on behalf of Country/Countries (as "XXXX").

4. INTERRUPTION OF SERVICE

4.1. The Parties have invested resources to provide services to each State within these areas and have taken the responsibility to ensure that these services are provided on a continuous basis with minimal interruption and data loss. The Parties are ensuring no service interruption through this cooperative and collaborative agreement to share aeronautical data and to provide disaster recovery capabilities to each of the Parties, in the event of failure or interruption of service at either ORGANIZATION A (ICAO: XXXX) or ORGANIZATION B (ICAO: XXXX).

4.2. Table 1 describes the scenarios, responsibilities and actions required by the Parties.

5. TERMINATION

5.1. This is entered into for an indefinite period of time and this agreement may be terminated in whole or in part by either PARTY by at least thirty (30) days' notice in writing to the other party.

6. COSTS

6.1. The services described herein by the ORGANIZATION A and ORGANIZATION B shall be provided by both parties free of charge.

7. CONTACTS

7.1. Communications between the parties may be effected by the persons listed in Annex 1. Annex 1 may be amended or updated by written notification of one party to the other party.

8. LIABILITY

8.1. The ORGANIZATION A and ORGANIZATION B shall not accept liability for any loss, damage or injury suffered by either party or by any person or organization arising from the use of these services.

9. INTERNET SERVICES

9.1. Each Party shall provide a secure Internet Connection with the applicable rules to the Contingency System.

10. SIGNATURE

10.1. This agreement will take effect on the date of signing by the ORGANIZATION A and ORGANIZATION B.

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SIGNATURE PAGE TO LETTER OF AGREEMENT BETWEEN ORGANIZATION A AND ORGANIZATION B

FOR ORGANIZATION A	FOR ORGANIZATION B
ON BEHALF OF ORGANIZATION A	ON BEHALF OF ORGANIZATION B
NAME (PRINT)	NAME (PRINT)
TITLE (PRINT)	TITLE (PRINT)

TABLE 1 – RESPONSIBILITIES AND ACTIONS REQUIRED BY THE PARTIES

Scenarios (are referenced from VENDOR's PROPOSAL – ###### – dated ## MMM yyyy

SCENARIO	ORGANIZATION A RESPONSIBILITY	ORGANIZATION B RESPONSIBILITY	REMARKS
#1 ORGANIZATION B has experienced a communications failure to both KATL (main) and SVMI (alternate).	ORGANIZATION A shall route all ORGANIZATION B AMHS traffic. ORGANIZATION A to **inform** KATL/SVMI on AMHS traffic rerouting	Route all AMHS traffic to ORGANIZATION A	AIM system will continue to operate without any changes or Interruptions.
#2 ORGANIZATION A has experienced a communications failure to both KATL (main) and SVMI (alternate).	Route all AMHS traffic to ORGANIZATION B	ORGANIZATION B shall route all ORGANIZATION A AMHS traffic. ORGANIZATION B to **inform** KATL/SVMI on AMHS traffic rerouting	AIM system will continue to operate without any changes or Interruptions.
#3 AMHS unserviceable at ORGANIZATION A	ORGANIZATION A shall establish a connection between the ORGANIZATION B AMHS and its own ORGANIZATION A AIM system.	Route all AMHS traffic through ORGANIZATION B ORGANIZATION B to **inform** KATL/SVMI on AMHS traffic rerouting	All traffic is diverted through the ORGANIZATION B AMHS to ORGANIZATION A without changing any other operational practices at ORGANIZATION A. Only diversions of messages will be applied by the AMHS system.
#4 AMHS unserviceable at ORGANIZATION B	Route all AMHS traffic through ORGANIZATION A	ORGANIZATION B shall establish a connection between the	All traffic is diverted through the ORGANIZATION A AMHS to ORGANIZATION B without changing

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SCENARIO	ORGANIZATION A RESPONSIBILITY	ORGANIZATION B RESPONSIBILITY	REMARKS
	ORGANIZATION A to **inform** KATL/SVMI on AMHS traffic rerouting	ORGANIZATION A AMHS and its own ORGANIZATION B AIM system.	any other operational practices at ORGANIZATION B. Only diversions of messages will be applied by the AMHS system.
#5 Local AIM servers U/S in ORGANIZATION A. All other service operational (AMHS, MPLS, KATL, SVMI) – IP Tunnel functional	ORGANIZATION A connects to Contingency AIM server in ORGANIZATION B. ORGANIZATION A will route AMHS traffic from Contingency AIM server back to ORGANIZATION A via the IP Tunnel. ORGANIZATION A routes traffic via normal channels.	Monitor Remote AIM Server.	ECAR States to connect to remote AIM server.
#6 Local AIM servers U/S in ORGANIZATION B. All other service operational (AMHS, KATL, SVMI) – IP Tunnel functional	Monitor Remote AIM Server.	ORGANIZATION B connects to Contingency AIM server in ORGANIZATION A. ORGANIZATION B will route AMHS traffic from Contingency AIM server back to ORGANIZATION B via the IP Tunnel. ORGANIZATION B routes traffic via normal channels.	
#7 ORGANIZATION A all equipment failure, not including an ISP Network Failure	ORGANIZATION A access their own system through a secure VPN connection (with a login credential & security encryption) and would continue to operate	ORGANIZATION B AMHS system accepts all AMHS traffic to ORGANIZATION A and from KATL/SVMI	

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SCENARIO	ORGANIZATION A RESPONSIBILITY	ORGANIZATION B RESPONSIBILITY	REMARKS
	and access their own system via the Contingency Spatia Dynamic AIM. ORGANIZATION A informs KATL/SVMI that all AMHS traffic destined for ORGANIZATION A should be diverted to ORGANIZATION B.	ORGANIZATION B will accept all AMHS traffic from the AIM system from ORGANIZATION A and route it out to KATL/SVMI	
#8 ORGANIZATION B all equipment failure, not including an ISP Network Failure	ORGANIZATION A AMHS system accepts all AMHS traffic to ORGANIZATION B and from KATL/SVMI ORGANIZATION A will accept all AMHS traffic from the AIM system from ORGANIZATION B and route it out to KATL/SVMI	ORGANIZATION B access their own system through a secure VPN connection (with a login credential & security encryption) and would continue to operate and access their own system via the Contingency SYSTEM AIM. ORGANIZATION B informs KATL that all AMHS traffic destined for ORGANIZATION B should be diverted to ORGANIZATION A.	

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SCENARIO	ORGANIZATION A RESPONSIBILITY	ORGANIZATION B RESPONSIBILITY	REMARKS
#9 Completely down in Trinidad and no services are available on the site at ORGANIZATION A	ORGANIZATION A contacts ORGANIZATION B via **SAT phone** and request AIS Curacao to log on as ORGANIZATION A AIS and send out NOTAMs and other ATS messages as required. Maintain continues contact with ORGANIZATION B via SAT phone.	Initiate connection to the Replication Monitoring System (RMS) Software, and log on as ORGANIZATION A Send out NOTAM immediately Maintain continues contact with ORGANIZATION A via SAT phone.	1. *Testing of scenarios must be carried out periodically (APR/MAY)* 2. SAT Phone to carry internet possibility. 3. Distribution list pre-set 4. When ORGANIZATION B is sending out messages on behalf of ORGANIZATION A, include in NOTAM description: *"On behalf of ORGANIZATION A... MESSAGE ...* ***Please contact ORGANIZATION B AIS via ORGANIZATION B YNYX or phone or email.)*** 5. ORGANIZATION B to activate switch link to KATL, routing it. 6. NOTAM Item E: • Total communication loss in the PIARCO FIR (AIM and ATM) • Activation of ACC (STATE) Contingency within the PIARCO FIR

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SCENARIO	ORGANIZATION A RESPONSIBILITY	ORGANIZATION B RESPONSIBILITY	REMARKS

#10 completely down in Curacao and no services are available on the site at ORGANIZATION B	ORGANIZATION B contacts ORGANIZATION A via **SAT phone** and request AIS ORGANIZATION A to log on as ORGANIZATION B AIS and send out NOTAMs and other ATS messages as required.
	
	Maintain continues contact with ORGANIZATION A via SAT phone.
		Initiate connection to the Replication Monitoring System (RMS) Software, and log on as ORGANIZATION B
		
		Send out NOTAM immediately
		
		Maintain continues contact with ORGANIZATION B via SAT phone.
			1. *Testing of scenarios must be carried out periodically (APR/MAY)*
			2. SAT Phone to carry internet possibility.
			3. Distribution list pre-set
			4. When ORGANIZATION A is sending out message on behalf of ORGANIZATION B include in NOTAM description:
			"On behalf of ORGANIZATION B ... MESSAGE ...
			Please contact
			ORGANIZATION A AIS via ORGANIZATION A YNYX or phone or email.)
			5. ORGANIZATION A to activate switch link to KATL, routing it.
			6. NOTAM Item E:
			  • Total communication loss in the CURAÇAO FIR (AIM and ATM)
			  • Activation of ACC (STATE) Contingency within the CURAÇAO FIR

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SCENARIO	ORGANIZATION A RESPONSIBILITY	ORGANIZATION B RESPONSIBILITY	REMARKS
#11 Systems resume normal operations	ORGANIZATION A to revert to normal operations.	ORGANIZATION B to revert to normal operations.	Both ORGANIZATION A and ORGANIZATION B shall revert to normal configurations and operations.

ACRONYMS

ACRONYM	DEFINITION
ACC	Air Traffic Control Center
AIM	Aeronautical Information Management
AIS	Aeronautical Information Services
AMHS	ATS Message Handling System
ATM	Air Traffic Management
FIR	Flight Information Region
ICAO	International Civil Aviation Organization
IP	Internet Protocol
KATL	ICAO Code for Atlanta
LOA	Letter of Agreement
NOTAM	Notice To Airmen
RMS	Replication Monitoring System
SAT	Satellite Phone

NOTAM CONTINGENCY LETTER OF AGREEMENT (LOA) BETWEEN

AERONAUTICAL INFORMATION SERVICES/AERONAUTICAL INFORMATION
MANAGEMENT (AIS/AIM) STATE

AND

AERONAUTICAL INFORMATION SERVICES/AERONAUTICAL INFORMATION
MANAGEMENT (AIS/AIM) STATE

1. FOREWORD

The authorised representatives of the State Civil Aviation Authority (SCAA), located in Country, and the authorised representatives of the State Civil Aviation Authority (SCAA), located in Country, agree that the NOTAM provisions of each State is assured when activated in Contingency situations indicated in this LOA, whereby NOTAM publication is continued in accordance with format requirements of the ICAO SARPs, timely promulgation, and whereby the system communication platform for dissemination is assured.

2. EFFECTIVE DATE

Each States' procedures contained in this document shall remain in force from the effective date specified herein until either amended or cancelled.

The provisions in the Letter of Agreement becomes effective at *Month dd, yyyy* at *0000 UTC*.

3. OBJECTIVE

The objective of this LOA is to specify NOTAM Contingency procedures between Country and Country and to assure that when Contingency is activated, each party carries out the required responsibilities as indicated in this document.

4. SCOPE

4.1 The procedures contained herein are supplementary to the ICAO Standards and Recommended Practices in Annex 15, the AIS Manual (Document 8126), ICAO Abbreviations and Codes (Doc 8400) and the PANS Aeronautical Information Management (Doc 10066). These documentations detail NOTAM procedures, format and the conditions under which the responsibility for the provision of NOTAM services shall be transferred between the AIS/AIM Units mentioned in paragraph 3 above.

4.2 This LOA refers to the implementation of short-term contingency measures in cases of disruption, or partial disruption of NOTAM capabilities due to communication failures or other contingency scenarios.

4.3 This LOA also formalises the short-term delegation of responsibility from AIS/AIM State/Country to AIS/AIM State/Country for the provision of NOTAM services for the:

- NAME Flight Information Regions for which AIS/AIM State/Country has NOTAM responsibility (including ……); and
- NAME Flight Information Regions for which AIS/AIM State/Country has NOTAM responsibility (including …….).

4.4 The establishment of transfer is based on contingent operational considerations only and does not therefore contribute to, neither can it be invoked for, any other purpose beyond this context.

5. ACTIVATION AND MONITORING OF NOTAM CONTINGENCY

5.1 This NOTAM Contingency Plan shall be activated on a contingency-based need by either State's assigned point of contact with the authorization rights for NOTAM Contingency Plan activation, indicated on Appendix A.

5.2 Activation of this NOTAM Contingency Plan will be by means of a **telephone call**, followed by an E-mail using the ~~ficial~~ . **NOTAM Request procedure** of each State/Country must be followed. See attachments to this LoA.

5.2.1 NOTAM requests procedure State/Country

Only the person(s) listed in this LOA, are allowed to request/activate the Contingency NOTAM to STATE NOF Office.

The emergency NOTAM request procedure is as follows:

1. Requestor contacts the AIM at **(+XXX) XXX XXXX**

2. Activate the Contingency NOTAM for State;
3. NOTAM will be created & Published;
4. Requestor shall send the official filled out NOTAM Request Form within 24hrs to email@email.gov

5.2.2 NOTAM requests procedure State/Country

Only the person(s) listed in this LOA, are allowed to request/activate the Contingency NOTAM to STATE NOF Office.

The emergency NOTAM request procedure is as follows:

1. Requestor contacts the AIM at **(+XXX) XXX XXXX**
2. Activate the Contingency NOTAM for State;
3. NOTAM will be created & Published;
4. Requestor shall send the official filled out NOTAM Request Form within 24hrs to email@email.gov

5.3 **Next valid** NOTAM number to be used for publication must be confirmed by both units prior to dissemination of any NOTAM.

5.4 NOTAM requests for dissemination shall be communicated primarily via E-mail from the assigned NOF of the Contingency Activated State.

5.5 The Subject of the E-mail containing NOTAM request should contain the term "CONTINGENCY NOTAM REQUEST" followed by the word "NUMBER" 1 or symbol "#" and then the next consecutive number starting from 1.

For examples:

CONTINGENCY NOTAM REQUEST NUMBER 1

Or

CONTINGENCY NOTAM REQUEST #

5.6 The body of the E-mail from <mark>one of the States to the other</mark>, will contain the completed/encoded NOTAM for dissemination.

5.7 Should E-mail capabilities become unavailable, then NOTAM requests from <mark>one of the States to the other and visa versa</mark> will be communicated via telephone or any other applicable/available digital messaging tool. For ease of referencing by both units the same subject-numbering system for requests should be used as stated in section 5.4 above, then the completed/encode NOTAM given for dissemination.

5.7 NOTAM disseminated shall be in accordance with ICAO format and standards and recommended practices (SARPs).

5.8 AIS/AIM Units' Managers and/or Directors of both States shall monitor and keep each other informed of NOTAM requests and subsequent disseminated NOTAM.

5.9 An E-mail or any other digital messaging tool containing a copy of each disseminated NOTAM or picture thereof, should be sent to <mark>stated emails</mark> to facilitate updating of disseminated NOTAM information on the respective AIM website of the corresponding <mark>State/Country</mark>.

6. AMENDMENTS

6.1 Any change to this Letter of Agreement, including its cancellation or replacement, requires the consent of the AIS/AIM Units concerned. This applies to the substance of the change as well as to its date of applicability. Any change shall be made either in the context of a meeting between the two units, or by exchange of correspondence, or by exchange of AFTN messages, with acknowledgement by all signatories.

6.2 Amendments to this document shall be effective only in the form of a written amendment duly signed by authorised representatives.

7. AUTHORISED SIGNATORIES

For/on behalf of State/CAA/ANSP (Country):

Name: Mr. /Mrs. ….   Name: Mr. /Mrs. ….
       Director/Manager AIM (State)   Director/Manager AIM (State)

Signature: …………………………   Signature: ……………………………

Place……………….…………

Date………………………..……

For/on behalf of State/CAA/ANSP (Country):

Name: Mr. /Mrs. ….   Name: Mr. /Mrs. ….
       Director/Manager AIM (State)   Director/Manager AIM (State)

Signature: …………………………   Signature: …………………………

Place…………………………….

Date………………………..……

Appendix A

STATE/COUNTRY	STATE/COUNTRY
Director General ….. Mr. / Mrs. …. Tel: 123456789 Extension: 000 Cell/CUG: 123456789 E-mail: ….. Director / Manager AIM….. Mr. / Mrs. …. Tel: 123456789 Extension: 000 Cell/CUG: 123456789 E-mail: ….. International NOTAM Office (NOF) Tel: 123456789 Hotline: 123456789 Fax: 123456789 E-mail: ….. Additional contact information	Director General ….. Mr. / Mrs. …. Tel: 123456789 Extension: 000 Cell/CUG: 123456789 E-mail: ….. Director / Manager AIM….. Mr. / Mrs. …. Tel: 123456789 Extension: 000 Cell/CUG: 123456789 E-mail: ….. International NOTAM Office (NOF) Tel: 123456789 Hotline: 123456789 Fax: 123456789 E-mail: ….. Additional contact information

— END —

APPENDIX A	Module 1: Basic Training
Curriculum for AIM / ARO / FPL Training	

This Module 1' subjects are not optional. All AIM / ARO or FPL personnel shall receivce this basic training.

#	Subject / Topic		Recommended References	Compliancy Reference

1. AVIATION LEGISLATION

The general objectives are to enable students to:
Appreciate the development and application of Aviation Legislation;
Recognize the Rules of the Air and regulations governing airspace.

#	**1.1 Overview of aviation legislation**			
1.1.1	State the necessity for Air Law.	1	Standardization; harmonization.	
1.1.2	Name the key National & International aviation organizations.	1	ICAO, National Supervisory Authority (CAA)	
1.1.3	Describe the impact these organizations have on Air Navigation Services and air traffic operations and their interaction with each other.	2	Regulatory process.	

#	**1.2 International organizations**			
1.2.1	Explain the purpose, organization and function of ICAO.	2	ICAO Convention, ICAO Council, Air Navigation Commission (ANC), ICAO Regional Offices.	
1.2.2	Describe the methods by which ICAO notifies and implements legislation.	2	Annexes, SARPS, PANS, SUPPS, Documents	
1.2.3	Describe the purpose and function of other international agencies and their relevance to Air Navigation Services and Air Traffic Operations.	2		
1.2.4	Be aware of the various international controller, pilot, airline operator and airspace user associations.	0	IFATCA, IFALPA, IATA, IAOPA, IACA, ACI, CANSO, COSESNA....etc.	

#	**1.3 National organizations**			
1.3.1	State the National Organizations responsible for the regulation of aviation and their relevance to Air Navigation Services and Air Traffic Operations.	1	National / State Supervisory Authorities, Government Authorities, Military Authorities.	
1.3.2	State the relationship between service providers and regulators.	1	ANSP, CAA.	
1.3.3	State the methods by which legislation is implemented and notified.	1	National / State legislation, Air Law.	
1.3.4	Specify the organisation of the National Supervisory Authority.	1	National / State Supervisory Authority.	
1.3.5	Describe how the body carries out its regulation responsibilities.	2	National / State legislation, audits and inspections.	
1.3.6	Be aware of the various national controller, pilot, airline operator and airspace user associations.	0		

#	**1.4 Financing Air Navigation Services**			
1.4.1	Be aware of the cost of air navigation services	0		
1.4.2	Describe the principle of route charges.	2	Aviation Regulation	
1.4.3	Describe the principle of local charges.	2	e.g. ATC charges, Navigation charges, APP charges, DEP charges.	National / State AIP and/or AIC
1.4.4	Be aware of charges for AIS publications.	0	e.g. AIP, charts, etc.	National / State AIP and/or AIC
1.4.5	Be aware of charges for webbased products.	0	e.g. Home briefing.	National / State AIP and/or AIC

#	**1.5 Airspace**			
1.5.1	List the different types of airspace.	1	Control zones, control areas, airways, upper and lower airspace, FIR, TMA, ATZ.	ICAO Annex11
1.5.2	Explain the function of each type of airspace.	2	FIR, CTR, TMA, etc.	ICAO Annex 11
1.5.3	Explain how airspace is applied nationally.	2	FIR, CTR, TMA, etc.	National / State AIP
1.5.4	List the ICAO airspace classes.	1	Classes A-G.	ICAO Annex 11
1.5.5	Explain the differences between the airspace classes.	2	Classes A-G.	ICAO Annex 11
1.5.6	Explain the national application.	2	Classes A-G.	National / State AIP

#	**1.6 Rules of the Air**			
1.6.1	State the categories of International Rules of the Air.	1	General, visual, instrument.	ICAO Annex 2
1.6.2	Be aware of the influence of relevant general flight rules on ATM.	0	e.g. Applying separation.	ICAO Annex 2
1.6.3	Explain those rules of the air that have most relevance to AIS.	2	Applicability, protection of persons and property, flight plans, time, VFR, IFR.	ICAO Annex 2
1.6.4	Differentiate between flying in accordance with visual and instrument flight rules (VFR and IFR).	2		ICAO Annex 2
	2		ICAO Annex 2	
1.6.5	Be aware of any notified national differences with ICAO.	0		National / State AIP; GEN 1.7; ICAO Annexes

2. PRINCIPLES OF AIR TRAFFIC MANAGEMENT

The general objectives are to enable students to:
Understand the basic operational procedures used by the air traffic control service in providing separation to aircraft;
Be aware of the necessity for ATC to apply these procedures to ensure a safe and expeditious service to airspace users.

2.1 Organisation of Air Traffic Management				
2.1.1	List the types of Air Navigation Services.	1	Definitions: ATM (ATS, TFM/ATFCM, ASM), AIS, MET, CNS,	ICAO Doc 9713; ICAO Annex 11; ICAO Annex 15;
2.1.2	State the objectives of the Air Traffic Services.	1	ATC, Advisory Service, FIS, ALRS.	ICAO Annex 11
2.1.3	List the types of Air Traffic Services.	1	ATC, Advisory Service, FIS, ALRS.	ICAO Annex 11
2.1.4	Define ATC Service.	1		ICAO Annex
2.1.5	Explain specific areas of responsibility of ATC Services.	2	Area Control, Approach Control, Aerodrome Control.	ICAO Annex 11
2.1.6	Be aware of different types of control services.	0	Radar, non-radar.	
2.1.7	Define Flight Information Service.	1		ICAO Annex 11
2.1.8	State the information that shall be passed to aircraft by a controller.	1		ICAO Annex 11
2.1.9	Define Alerting Service.	1		ICAO Annex 11
2.1.10	Describe the phases of emergency.	2	Uncertainty, alert, distress phase.	ICAO Annex 11
2.1.11	Describe the organisation, responsibilities and structure of Rescue Co-ordination Centres.	2	National / State AIP, National / State RCC.	
2.1.12	State the purpose of ATFM/ATFCM.	1	Flow management.	ICAO Annex 11; ICAO Doc 4444
2.1.13	State the purpose of ASM.	1	Flexible use of airspace (FUA).	ICAO Doc 4444

2.2 Air-ground communications				
2.2.1	State the different methods of airground communications.	1	Radiotelephony, ADS-B, Mode S, ACARS, CPDLC, SELCAL, etc.	ICAO Doc 4444 ICAO Annex 11
2.2.2	Be aware of the need for standard ICAO phraseology.	0		ICAO Annex 10; ICAO Doc 4444
2.2.3	Be aware of the ICAO phonetic alphabet and expressions for numerals and time.	0		ICAO Annex 10

2.3 Flight data processing				
2.3.1	State the need for Flight Data Processing.	1		ICAO Doc 4444
2.3.2	List the stages of the flight plan process.	1	FPL+estimate+clearance.	ICAO Doc 4444
2.3.3	Specify the methods of exchange of estimates.	1	Telephone.	ICAO Doc 4444

2.4 ATC clearances and instructions				
2.4.1	Define ATC Clearance.	1		ICAO Annex 11
2.4.2	State the contents of an ATC clearance.	1		ICAO Annex 11
2.4.3	Define ATC Instructions.	1		ICAO Doc 4444
2.4.4	State the contents of an ATC Instruction.	1		ICAO Doc 4444

2.5 Co-ordination between controllers				
2.5.1	Be aware of the necessity of coordination.	0	Safe conduct of flight.	ICAO Annex 11
2.5.2	Describe the principles of coordination.	2	Negotiation, notification, agreement.	
2.5.3	State methods of co-ordination.	1	Data link, Telephone, Intercom, Voice, etc.	ICAO Annex 11

2.6 Altimetry and level allocation				
2.6.1	Explain the relationship between flight level, height and altitude.	2	QNH, QFE, Standard Pressure Setting.	ICAO Doc 4444
2.6.2	Define transition level, transition altitude and transition layer.	1		ICAO Doc 8168
2.6.3	Be aware of the consequences of the variability of the transition. Level.	0	Broadcast of Transition Level.	ICAO Doc 4444
2.6.4	State the cruising level allocation system.	1	Table of cruising levels.	ICAO Annex 2
2.6.5	Describe the factors that determine lowest useable flight level.	2		ICAO Doc 4444 ICAO Doc 8168
2.6.6	Describe the concept of RVSM.	2	Table of cruising levels.	ICAO Annex 2;

2.7 Principles of separation				
2.7.1	State the vertical separation minima.	1	Vertical separation minima (500, 1000 and 2000 ft).	ICAO Doc 4444
2.7.2	Describe the use of vertical separation.	2	Vertical separation minima as per Flight Level Allocation, Use of Mode C and Mode S derived information.	ICAO Doc 4444
2.7.3	Be aware of longitudinal separation based on time and distance.	0	Longitudinal separations.	ICAO Doc 4444; RNAV
2.7.4	Be aware of the use of lateral separation.	0	Lateral separations.	ICAO Doc 4444
2.7.5	State the general radar separation minima.	1	Radar separation (3NM, 5NM, 10NM).	ICAO Doc 4444
2.7.6	Be aware of the influence of wake turbulence on separation.	0	Aircraft spacing – time/distance/altitude.	ICAO Doc 4444

2.8 Collision avoidance				
2.8.1	State the working principle of the available airborne collision avoidance systems.	1	ACAS, TCAS.	ICAO Doc 8168
2.8.2	State the working principle of the available ground based collision avoidance systems.	1	MTCA, STCA.	

2.9 Data displays				

2.9.1	Explain the purpose of the controller's flight progress display.	2	Flight Progress Strips, Electronic Data Display.	ICAO Doc 4444
2.9.2	List the pertinent data to be extracted from a flight plan to produce a flight progress display.	1		ICAO Doc 4444
2.9.3	State the pertinent data from other sources to produce a flight progress display.	1	Pilot Reports, Controller Coordination, Data Exchange.	ICAO Doc 4444
2.9.4	Describe how a controller updates the data display to accurately reflect the traffic situation.	2	Strip display update procedures.	

2.10 Air Traffic Flow and Capacity Management (ATFM)				
2.10.1	Define air traffic flow management/air traffic flow and capacity management.	1		ICAO Doc 4444
2.10.2	Be aware of the need for ATS system capacity management.	0		ICAO Doc 4444
2.10.3	List the main factors influencing ATS capacity.	1		ICAO Doc 4444

2.11 Airspace Management (ASM)				
2.11.1	State the need for airspace management.	1		ICAO Annex 2; ICAO Annex 11;
2.11.2	Explain the need for Flexible Use of Airspace (FUA).	2		ICAO Doc 4444;
2.10.3.	State the responsibilities for airspace	1		

3. AERODROMES

The general objectives are to enable students to:
Be familiar with the layout of an aerodrome;
Describe aerodrome marking and lighting systems.

3.1 Aerodrome layout				
3.1.1	Define "aerodrome".	1		ICAO Annex 14
3.1.2	Differentiate aerodrome areas.	2	Movement and manoeuvring areas.	ICAO Annex 14
3.1.3	Identify the parts of the manoeuvring area.	1	Runways and taxiways.	
3.1.4	Be aware of the terms airside/landside.	0	The movement area of an airport, adjacent terrain and buildings or portions thereof, access to which is controlled.	ICAO Annex 17

3.2 Runways				
3.2.1	Define "runway".	1		ICAO Annex 14
3.2.2	List the elements of a runway.	1	Threshold, end, TDZ, etc.	ICAO Annex 14
3.2.3	Describe the physical characteristics of a runway.	2		ICAO Annex 15; ICAO Annex 14
3.2.4	Define "runway shoulder".	1		ICAO Annex 14
3.2.5	State the characteristics of runway shoulders.	1		ICAO Annex 14
3.2.6	Define "runway strip".	1		ICAO Annex 14
3.2.7	State the dimensions of a runway strip.	1		ICAO Annex 14
3.2.8	Define "RESA" (Runway End Safety Area).	1		ICAO Annex 14
3.2.9	State the dimensions of a RESA.			ICAO Annex 14
3.2.10	Explain the purpose of aerodrome marking and lighting systems.	2	Visual guidance to pilots.	ICAO Annex 14
3.2.11	Describe runway markings.	2	RW Y designation, centre line, threshold, fixed distance, TDZ.	ICAO Annex 14
3.2.12	Describe runway lighting systems.	2	Runway, threshold identification, edge, end, centre line, touchdown zone and SW Y.	
3.2.13	Define "clearway".	1		ICAO Annex 14
3.2.14	State the dimensions of a clearway.	1		ICAO Annex 14
3.2.15	Define "stopway".	1		ICAO Annex 14
3.2.16	State the dimensions of a stopway.	1		ICAO Annex 14

3.3 Taxiways				
3.3.1	Define "taxiway".	1		ICAO Annex 14
3.3.2	Describe the main characteristics of taxiways.	2	Rapid exit, taxiway shoulders, etc.	ICAO Annex 14
3.3.3	State the dimensions of a taxiway.	1		ICAO Annex 14
3.3.4	Describe taxiway markings.	2	Centre line, taxi holding point and taxiway intersection.	ICAO Annex 14
3.3.5	Describe taxiway lighting.	2	Centre line, edge lights and stop bars.	ICAO Annex 14

3.4 Aprons				
3.4.1	Define "apron".	1		ICAO Annex 14
3.4.2	List the elements of an apron.	1	Apron taxiway, aircraft stand, aircraft stand taxi lane.	ICAO Annex 14
3.4.3	Describe the main characteristics of an apron.	2		ICAO Annex 14
3.4.4	Be aware of visual docking/parking guidance systems.	0		ICAO Annex 14

3.5 Landing aids				

3.5.1	List visual landing aids.	1	VASIS, PAPI and APAPI.	ICAO Annex 14
3.5.2	Describe visual landing aids.	2	VASIS, PAPI and APAPI.	ICAO Annex 14
3.5.3	List approach lighting systems.	1	Simple, precision and Category I, II and III systems, CALVERT.	ICAO Annex 14
3.5.4	Describe approach lighting systems.	2	Simple, precision and Category I, II and III systems, CALVERT.	ICAO Annex 14
3.5.5	Be aware of the effect of partial/total unserviceability of landing aids on aircraft operations.	0	Airport operations minima.	ICAO Annex 14; ICAO Annex; ICAO Doc 8168
3.5.6	State the function of the signal area.	1		ICAO Annex 14
3.5.7	Describe a wind direction indicator.	2	e.g. W ind sock (description, position, relative wind speed indication).	ICAO Annex 14

3.6 Services / Facilities				
3.6.1	List the different services found at an airport.	1	Fuel, de-icing, customs, fire fighting service, security, maintenance, etc.	ICAO Annex 9
3.6.2	Be aware of the impact of the degradation of services on airport operations.	0	Fuel, de-icing, customs, fire fighting service, security, etc.	ICAO Annex 9
3.6.3	Identify the information that has to be passed between aeronautical information services (AIS) and the airport authorities.	1	Aerodrome conditions, fire/rescue category, condition of ground equipment and NAVAIDs.	ICAO Annex 14

3.7 Obstacles				
3.7.1	Define "obstacle".	1		ICAO Annex 14
3.7.2	Describe how obstacles are identified.	2		ICAO Annex 14
3.7.3	List the obstacle limitation surfaces.	1		ICAO Annex 14
3.7.4	Explain the purpose of obstacle limitation surfaces.	2		ICAO Annex 14
3.7.5	State the obstacle limitation requirements.	1		ICAO Annex 14
3.7.6	Describe the marking of unusable or unserviceable areas on the movement area.	2	Closed runways/taxiways, apron.	ICAO Annex 14

3.8 Aerodrome data				
3.8.1	List significant elements of aerodrome data.	1	Aerodrome reference point, Aerodrome reference temperature, Aerodrome dimensions, strength of pavements, declared distances, rescue and fire fighting, etc.	ICAO Annex 14
3.8.2	Define "Aerodrome Reference Point" (ARP).	1		ICAO Annex 14
3.8..3	Explain the significance of the ARP.	2		ICAO Annex 14
3.8.4	Define "aerodrome elevation".	1		ICAO Annex 14
3.8.5	Explain the significance of the aerodrome elevation.	2		ICAO Annex 14
3.8.6	Define "runway elevation".	1		ICAO Annex 14
3.8.7	Explain the significance of the runway elevation.	2		ICAO Annex 14
3.8.8	Define "threshold elevation".	1		ICAO Annex 14
3.8.9	Explain the significance of threshold elevation.	2		ICAO Annex 14
3.8.10	Define "strength of pavements".	1	PCN/ACN.	ICAO Annex 14
3.8.11	Explain the significance of the strength of pavements.	2		ICAO Annex 14
3.8.12	Define the terms TORA, TODA, ASDA and LDA.	1		ICAO Annex 14
3.8.13	Explain the significance of these distances.	2		ICAO Annex 14

3.9 Heliports				
3.9.1	Define"heliport".	1		ICAO Annex 14
3.9.2	List the physical characteristics of a heliport.	1	Final approach and take-off areas (FATO), helicopter clearways, touchdown and lift-off areas, safety areas, helicopter ground taxiways, helicopter air taxiways, etc.	ICAO Annex 14
	Recognise the different visual aids at a heliport.	1	Wind direction indicators, markings and markers, lights, etc.	ICAO Annex 14

4. AIRCRAFT

The general objectives are to enable students to:
Understand the basic principles of the theory of flight;
Be familiar with factors affecting aircraft performance.

4.1 Principles of flight				
4.1.1	Describe the forces acting on an aircraft in flight.	2	Lift, thrust, drag, weight.	
4.1.2	List the factors affecting these forces.	1	Streamline airflow, airfoil, angle of attack.	
4.1.3	List the main structural components of an aircraft.	1	Wings, tail plane, fuselage, flaps, elevator, rudder.	
4.1.4	Describe how the control surfaces influence the movements of an aircraft.	2	Flaps, elevator, rudder.	
4.1.5	Identify the critical factors that affect aircraft performance.	1	Maximum speed, stall speed, ceiling, streamline flow, turbulent flow.	

			4.2 Aircraft propulsion	
4.2.1	Explain the operating principles, of the piston engine and propeller.	2	Piston engines, fixed pitch, variable pitch, number of blades	
4.2.2	List the advantages and disadvantages of piston engines.	1	Quick reaction, cost effective, short runway operations – less power at high altitude, slow, high maintenance, unfavourable power/weight ratio.	
4.2.3	List the different types of gas turbines.	1	Straight jet, turbofan, afterburner.	
4.2.4	Explain the operating principles of turbine engines.	2	Inlet compression, combustion, exhaust.	
4.2.5	List the advantages and disadvantages of turbine engines.	1	Efficient at high level, very powerful, high speed, reliable – expensive.	
4.2.6	Explain the operating principles of turbo-prop propulsion.	2		
4.2.7	List the advantages and disadvantages of turbo prop propulsion.	1	Efficient at medium altitudes, short runway operations, fast and economical – older types are slow, less efficient, noise and vibrations.	

			4.3 Factors affecting aircraft performance	
4.3.1	Be familiar with the factors affecting aircraft on take-off.	0	Runway characteristics and conditions, wind, temperature and aircraft weight.	
4.3.2	Be familiar with the factors affecting aircraft during climb.	0	Speed, weight, altitude, wind and temperature.	
4.2.3	Be familiar with the factors affecting aircraft at cruise.		Altitude, cruising speed, wind, effect of weight and air density on ceiling, cruising systems, i.e. LRC, cost index.	
4.3.4	Be familiar with the factors affecting aircraft during descent.	0	Wind, speed, rate of descent, aircraft configuration and pressurisation.	
4.3.5	Be familiar with the factors affecting aircraft during final approach and landing.	0	Wind, aircraft configuration, weight, meteorological and runway onditions.	
4.3.6	Be familiar with the factors affecting aircraft during missed approach and holding.	0	Flap setting, power setting, speeds.	
4.3.7	Be familiar with performance restrictions due to ecological constraints.	0	Fuel dumping, noise abatement procedures.	

			4.4 Flight instruments	
4.4.1	List the basic flight instruments for VFR flights.	1	Magnetic compass, timepiece, pressure altimeter, airspeed indicator, etc.	ICAO Annex 6
4.4.2	List the additional flight instruments for IFR flights.	1	Turn and slip indicator, artificial horizon, directional gyroscope, rate of climb/descent, etc.	ICAO Annex 6
4.4.3	List the basic onboard navigation instruments.	1	To include: ADF, VOR (TACAN), DME, ILS, MLS, GNSS, INS, IRS.	
4.4.4	Be familiar with vital engine monitoring parameters.	0	Oil pressure and temperature, engine temperature, rpm, fuel state and flow, EGT, vibration, etc.	
4.4.5	Be familiar with the use of other cockpit instruments.	0	e.g. TCAS, Transponder mode CS, Head up display, (E)GPW S/TAW S, Wind Shear Indicator, W eather Radar, Autopilot, FMS, EFIS.	ICAO Annex 10

			4.5 Types and categories of aircraft	
4.5.1	List the different groups of aircraft.	1	Fixed wing, rotary wing, balloons, gliders, etc.	
4.5.2	State the wake-turbulence categories.	1	ICAO categories, national categories.	*Note: reference to FPL items*
4.5.3	Identify the most common types of aircraft in operational use.	1	Especially the most common local aircraft typical to the state/region.	*Note: reference to FPL items*
4.5.4	State the ICAO aircraft type designators and categories.	1	The most common local aircraft typical to the state/region.	ICAO Doc 8643

5. METEOROLOGY

The general objectives are to enable students to:
Understand the basics of meteorology;
Appreciate how meteorological phenomena affect airline operations and aircraft performance.

			5.1 Influence of meteorology on aviation	
5.1.1	Explain the relevance of meteorology to aviation.	2		ICAO Annex 3

			5.2 Atmosphere	
5.2.1	State the composition and structure of the atmosphere.	1	Gases, layers.	
5.2.2	Describe the main elements of the International Standard Atmosphere (ISA).	2	Temperature, pressure and density.	ICAO Doc 7488; ICAO Annex 8
5.2.3	State the reasons why the ISA has been defined.	1	Standardisation, reference data.	
5.2.4	Describe the characteristics of different types of air masses and their origin.	2	Polar, arctic, tropical, continental, maritime.	
5.2.5	Describe the major wind systems.	2	Polar east winds, west wind zone, trade winds, inner-tropical convergence zone.	
5.2.6	Describe high and low pressure systems.	2	Cyclones and anticyclones, ridges	

			troughs.	
5.2.7	Describe the different types of fronts and the weather associated with them.	2	Fronts, warm, cold, occluded, squalls.	
5.2.8	Describe tropical meteorology	2	Storm, depression, hurricane,	

	5.3 Atmospheric processes			
5.3.1	Explain the processes by which heat is transferred and how the atmosphere is heated.	2	Radiation, convection, advection, conduction, turbulence.	
5.3.2	Describe temperature variation.	2	Lapse rates, land/sea variations, diurnal variation, inversion, freezing level.	
5.3.3	Differentiate between the different terms relating to air saturation levels.	2	Saturation, condensation, evaporation, relative humidity, dew point, sublimation, latent heat, spread super-cooled water.	ICAO Annex 3; ICAO Doc 8896
5.3.4	Explain the measurement of air pressure.	2	Barometer, hPa.	ICAO Annex 3; ICAO Doc 8896
5.3.5	Describe the relationship between pressure, temperature and height.	2	Boyle's Law, influence of changing density on engine performance.	
5.3.6	Define the various Pressure Data.	1	QFE, QNH, Standard Pressure Setting, altitude, height, flight level.	

	5.4 Meteorological phenomena			
5.4.1	Explain the different conditions necessary for the formation of clouds.	2	Saturation level, instability, adiabatic lifting processes.	
5.4.2	Explain how clouds are formed.	2	Advection, orographic lift, convection, rising along a warm front.	
5.4.3	Identify different cloud types and state their characteristics.	1	Stratus, Cumulus, etc.	
5.4.4	State how the amount of cloud is measured.	1	Okta, FEW , SCT, BKN, OVC, SKC.	ICAO Annex 3; ICAO Doc 8896
5.4.5	Explain the significance of precipitation in aviation.	2	Runway Conditions, icing.	
5.4.6	Describe all types of precipitation.	2	Rain, snow, sleet, hail, etc.	ICAO Doc 9328
5.4.7	Explain the causes of atmospheric obscurity.	2	Advection fog, radiation fog, mixing, evaporation, mist, drizzle, haze.	ICAO Doc 9328
5.4.8	State how visibility is measured.	1	Human eye, transmissometer.	ICAO Annex 3; ICAO Doc 8896; ICAO Doc 9328
5.4.9	Explain different types of visibility.	2	Meteorological visibility, RVR, slant visibility, prevailing visibility, flight visibility.	ICAO Doc 9328
5.4.10	Explain the different types of wind phenomena and their significance to aviation.	2	Veering, backing, gusting, jet streams, land/sea breezes, mountain/valley breezes, Föhn, surface wind, upper winds, Coriolis force.	
5.4.11	State how wind is measured.	1	Anemometer.	ICAO Annex 3; ICAO Doc 8896
5.4.12	List the significant meteorological phenomena hazardous to flight.	1	Turbulence, thunderstorms, icing, wind shear, micro bursts, wake turbulence, hail, CAT, freezing precipitation	
5.4.13	Describe their origins and impact on flight operations.	2		

	5.5 Organisation of meteorological services			
5.5.1	Name the basic duties, organisation and working methods of MET offices.	1	Collating MET reports and making forecasts, drawing weather charts.	ICAO Annex 3; ICAO Doc 8896; AIP GEN 1.1.2, 3.5 , AD 2.11 and 3.11
5.5.2	Be aware of the international and national standards for the exchange of meteorological data.	0		ICAO Annex 3; ICAO Doc 8896
5.5.3	Specify methods of collection and recovery of meteorological data.	1	Barometer, thermometer, ceilometers, anemometer, weather balloons, transmissometer, radar, satellites.	ICAO Annex 3

	5.6 Meteorological information			
5.6.1	List the most common types of weather reports and forecasts.	1	METAR, SPECI, TAF, SIGMET, AIRMET, GAMET.	ICAO Annex 3; ICAO Doc 8896
5.6.2	Explain the contents of weather reports and forecasts.	2	Wind, visibility, clouds, temperature/dew point, pressure.	
5.6.3	List the most common types of weather charts.	1	Low level charts, High level charts significant weather charts.	ICAO Annex 3; ICAO Doc 8896
5.6.4	List the information depicted on the most commonly used weather charts.	1	Isobars, icing, turbulence, clouds, fronts, jet streams, temperature, wind signatures, etc.	

6. NAVIGATION

The general objective is to enable students to:
Understand the basic principles of navigation and air navigation systems.

6.1 Introduction			
6.1.1	Explain the need for navigation in aviation.	2	Most economic route, safety, accuracy.
6.1.2	Be aware of navigation methods used in aviation.	0	e.g. Historical overview, celestial, on-board, radio, satellites, navigation systems.

6.2 The Earth			
6.2.1	Describe the physical characteristics of the Earth.	2	Shape, size, rotation, revolution in space
6.2.2	State the different temporal reference systems used in aviation.	1	Gregorian calendar, UTC, 24-hour local mean time, daylight saving time, time zones, dateline, atomic clocks, units of time measurement, beginning of the day – 0000, end of the day - 2359, SR and SS.	ICAO Annex 2; ICAO Annex 5; National / State AIP
6.2.3	Differentiate between UTC and local mean time.	2		National / State AIP GEN 2
6.2.4	List commonly used reference points/lines on the Earth's surface.	1	Meridians, parallels, equator, poles.
6.2.5	Explain direction and distance on the earth.	2	(Units of measurement) Cardinal and inter-cardinal points, great circle, small circle, thumb lines, etc.
6.2.6	Describe how a position on the Earth's surface is determined.	2	Latitude and longitude, units of measurement (degrees, minutes, seconds, NM, KM).
6.2.7	Identify the general principles of horizontal reference system.	1	WGS-84 (W orld Geodetic System -1984).	ICAO Annex 4; ICAO Annex 11; ICAO Annex 15; ICAO Doc 9674
6.2.8	Identify the general principles of vertical reference system.	1	Mean sea level datum, Earth Gravitational Model 1996 (EGM – 96), local geoid models.	ICAO Annex 4; ICAO Annex 15; ICAO Doc 9674
6.2.9	Explain the general relationship between the Earth's magnetic field and the compass.	2	Magnetic variation, deviation, inclination, isogonals.
6.2.10	Differentiate between the three north designations.	2	True north, magnetic north and compass north.

6.3 Projections			
6.3.1	Describe how the Earth is projected as a map.	2	Principle and types of projection
6.3.2	Describe the properties of an ideal map.	2	Conformality, constant scale, true azimuth, distance, topography, accuracy.
6.3.3	Explain the properties and uses of different projections.	2	Conformal Lambert, Mercator, Polar stereographic, middle latitude chart.

6.4 Applied navigation			
6.4.1	Explain how to measure the distance between two points.	2	Co-ordinates/points, ruler, protractor, computer, calculator (NM and minutes of a meridian).
6.4.2	List types of aircraft speed.	1	True airspeed (Mach number), Indicated airspeed, Ground speed (knots, KM/h).
6.4.3	Differentiate between air speeds.	2	True airspeed, Indicated airspeed.
6.4.4	Explain the influence of wind on the flight path.	2	Heading, track, drift angle, wind correction angle, wind vector, flying time.

6.5 Navigation aids			
6.5.1	List the most common ground based aids to navigation.	1	NDB, VOR, DVOR, TACAN, DME, ILS & marker beacons, MLS, LORAN-C.
6.5.2	Explain the working principles of ground based systems.	2	NDB, VOR, DVOR, TACAN, DME, ILS & marker beacons, MLS.
6.5.3	Describe the use, precision and limitations of ground based systems.	2	NDB, VOR, DVOR, TACAN, DME, ILS and marker beacons, MLS, coverage and range.
6.5.4	Identify the cockpit instrument/displays of ground based systems.	1	Analogue/multifunction displays (ADF, VOR, TACAN, DME, ILS and marker Beacons, MLS).
6.5.5	Be aware of the working principles of VDF.	0	VDF used with or without RADAR (Controller's side) DRDF (Ref. 2.3.1 radio direction finding).
6.5.6	Be aware of the use of on-board systems.	0	INS, IRS, FMS and navigational computers (area navigation) BRNAV, P-RNAV, EFIS (Electronic Flight Instrument System).	ICAO Doc 8168
6.5.7	Be aware of the use of satellite based navigational systems.	0	GNSS, ADS-B and C (Station olding).	ICAO Doc 8168

7. QUALITY MANAGEMENT SYSTEMS

The general objectives are to enable students to:
Understand the basic principles of quality management systems;
Being aware of the importance of quality management systems in air navigation services; Describe the company's quality management system;
Apply pre-defined AIS processes within the quality management system.

7.1 Introduction			
7.1.1	Define quality.	1		ICAO Annex 15;

7.1.1	Define quality.	1		www.iso.org; ISO 8402
7.1.2	Describe a process.	2		www.iso.org
7.1.3	Explain the need for quality management	2		
7.1.4	Define a quality management system.	1		
7.1.5	List the benefits of a quality management system.	1		

7.2 ISO (International Standards Organisation)				
7.2.1	State the objectives of ISO.	1		www.iso.org
7.2.2	Describe ISO 9000 series.	2		
7.2.3	Describe how ISO 9000 works.	2		www.iso.org
7.2.4	Explain the need for audits.	2	External, internal.	
7.2.5	Describe the certification process.	2		
7.2.6	State the importance of certification for ANSPs.	1		

7.3 Key Performance Indicators (KPI)				
7.3.1	State company quality objectives.	1	e.g. Referring to core activities.	
7.3.2	Describe the role of a KPI.	2	Monitoring and continuous improvement.	
7.3.3	List AIS KPIs.	1	e.g. Customer satisfaction index, cost-effectiveness of AIS, staff capability, staff continuity, external co- ordination, re-work level, time spent on the product, security, traceability, user enquiries, availability, timeliness.	
7.3.4	Describe the most important KPIs for AIS customers.	2	Timeliness of data, user enquiries, traceability.	
7.3.5	Describe the most important KPIs for AIS organizations	2	Customer satisfaction index, rework level	

7.4 ICAO and Requirements				
7.4.1	Explain the need to control the quality of data.	2	Accuracy, integrity and relevance of data, user requirements.	ICAO Annex 15
7.4.2	State the ICAO quality system requirements.	1		ICAO Annex 15
7.4.3	Describe the requirements for AIS data/ information quality management.	2		Strategic ICAO Annex 15 PANS AIM Doc 10066 73/2010

7.5 Company Quality Management System				
7.5.1	State the company policy on quality management.	1		Quality management policy
7.5.2	Describe the company's process model.	2		Process model
7.5.3	List the process levels.	1		Process model
7.5.4	Differentiate between process owner, process manager and process user.	2		Process model

7.6 Company QMS Documentation				
7.6.1	Describe the structure of the QMS documentation.	2		Process description
7.6.2	State where to find the process document.	1		Process description
7.6.3	Describe the template.	2	Identify QMS document, its significance.	Process description
7.6.4	Describe the notification of changes in regulatory documents.	2		Process description

7.7 Company AIS Processes				
7.7.1	Describe the AIS processes.	2		Process documentation
7.7.2	List AIS quality indicators.	1	KPIs, balanced score card.	Process documentation
7.7.3	Apply pre-defined AIS processes.	3	Relevant work instructions.	Process documentation

8. SAFETY MANAGEMENT SYSTEMS

The general objectives are to enable students to:
Understand the basic principles of safety management systems;
Describe the impact of safety management systems to AIS/AIM.

8.1 Principles of Safety Management

| 8.1.1 | Be aware of the underlying need for safety management policy and principles. | 0 | Lessons learnt from accidents, rising traffic levels, best practice. | |
| 8.1.2 | Be aware of the reactive and proactive nature of safety management policy and principles. | 0 | Nature of accidents, Reason Model, incident investigation, safety assessment. | |

8.2 ATS Safety Management				
8.2.1	State the responsibilities of the different authorities responsible for ATS safety management.	1	ICAO Annex 11; ICAO Doc 4444	
8.2.2	State the objectives of ATS safety management.	1		ICAO Doc 4444
8.2.3	List the main elements of an ATS safety management programme.	1		ICAO Doc 4444
8.2.4	Be aware of the need for incident reporting systems.	0		ICAO Doc 4444
8.2.5	State the need for safety reviews.	1		ICAO Doc 4444
8.2.6	Be aware of the scope of safety reviews.	0		ICAO Doc 4444
8.2.7	State the need for safety assessments.	1		ICAO Doc 4444
8.2.8	Be aware of safety enhancing measures.	0		ICAO Doc 4444

8.3 Safety Policy				
8.3.1	Be aware of the EATM Safety Policy Statement.		Safety management, safety responsibility, the priority of safety, the safety objective of an air navigation system.	
8.3.2	Be aware of EATM safety management principles.		Safety management system framework, safety achievement, safety assurance; safety promotion, safety plan...	Safety Management Handbook

8.4 Safety Regulations				
8.4.1	Be aware of the role of safety regulations.	0	Purpose of safety regulations, objectives of the national regulator, objectives of international safety institutions	Civil Aviation Regulations publications
8.4.2	List the safety regulation documents.	1	Safety Regulatory Requirements (ESARRs), regulation advisory documentation, national regulations.	
8.4.3	Be aware of general safety regulatory requirements for ATM service personnel.	0		ESARR 5
8.4.4	Be aware of the impact of safety regulations on AIS.	0		

8.5 National / State and Company Safety Management Systems				
8.5.1	State the organisation of national safety management systems.	1		
8.5.2	Be aware of the working principles of the national safety management systems.	0		
8.5.3	State the organisation of the company's safety management system.	1		
8.5.4	Be aware of the company's safety management policy statement.	0		
8.5.5	Describe the working principles of the company's safety management system.	2		
8.5.6	List the publications or information provided by the company's safety management system.	1		
8.5.7	Describe the impact of safety management on AIM.	2		

9. HUMAN PERFORMANCE

The general objective is to enable students to:
Appreciate the factors that affect personal performance;
Appreciate the factors that affect team performance.

9.1 Individual behaviour				
9.1.1	Recognise the differences and shared attributes that exist between people.	1	Attitudes, culture, language, etc.	
9.1.2	Recognise the danger of boredom.	1		
9.1.3	Recognise the danger of overconfidence and complacency.	1		
9.1.4	Recognise the danger of fatigue.	1	Sleep disturbance/deprivation, heavy workload.	
9.1.5	Identify factors involved in work satisfaction.	1		
9.1.6	Apply appropriate learning techniques.	3	Interactive methods, self-study, practical, etc.	

9.2 Professional conduct				
9.2.1	Recognise the need for professional	1	Adherence to rules and regulations,	

9.2.1	conduct in AIS.	1	quality and safety issues.	

9.3 Teamwork				
9.3.1	Identify factors involved in human relations.	1	Team resource management.	
9.3.2	Describe the positive effect of learning and working together.	2	Sharing knowledge and experiences.	
9.3.3	Describe the principles of team work.	2	Team membership, group dynamics, conflict and conflict solutions.	
9.3.4	Identify leader style and group interaction.	1		

9.4 Stress				
9.4.1	Define "stress".	1		
9.4.2	Recognize the symptoms and sources of stress.	1	Behavioral changes, lifestyle changes, physical symptoms, crisis events.	Human Factors Module: Critical Incident Stress Management.
9.4.3	Recognise the stages of stress.	1	Stress performance curve.	
9.4.4	Name techniques for stress management.	1	Relaxation techniques, diet and lifestyle, exercise.	

9.5 Human error				
9.5.1	Define "human error".	1		
9.5.2	Describe the factors that help to cause error.	2	Fatigue, lack of skill, misunderstanding, distraction, etc.	
9.5.3	List types of error.	1	Mistakes, violations, lapse, etc.	
9.5.4	Explain the danger of violations becoming accepted as practice.	2		

9.6 Interpersonal communication				
9.6.1	Define "communication".	1		
9.6.2	Define "the communication process".	1	Sender, encoder, transmitter, signal, interference, reception, decoder, receiver.	
9.6.3	Describe the factors that affect verbal communication.	2	Word choice, intonation, speed, tone, distortion, expectation, noise, interruption.	
9.6.4	Describe the factors that affect nonverbal communication.	2	Touch, sight, sound, choice, body language, expectation, distortion, interruption.	
9.6.5	List good communication practices.	1	Speaking, listening, visual communication.	

9.7 The working environment				
9.7.1	Define "ergonomics".	1		
9.7.2	Recognise the need for good workplace design.	1	Light, insulation, décor, space, facilities, etc.	
9.7.3	Recognise the need for effective design at the workstation.	1	Good seating position, avoid strain, etc.	
9.7.4	Identify equipment at a workstation.	1	Communication means, information monitors, computer, printer, etc.	

9.8 Health and well-being				
9.8.1	Recognise the effect of health on performance.	1	Fitness, diet, drugs, alcohol, etc.	
9.8.2	Be aware of company policy on healthcare.	0	Preventive programmes.	
9.8.3	State the company programmes on healthcare.	1		
9.8.4	Be aware of resources available for counselling.	0		

10. EQUIPMENT AND SYSTEMS

The general objectives are to enable students to:

Recognize the equipment and systems that are in general use in ANS;

Appreciate how this equipment and systems contribute to safe and efficient ANS; Use computer and other equipment required for AIS functions.

10.1 ANS equipment				
10.1.1	Recognize the main items of ANS equipment.	1	Communications systems, surveillance systems, safety systems.	
10.1.2	Recognize the main items of AIS equipment.	1	Communications systems, data processing systems, plotting systems.	

10.2 Communications systems				
10.2.1	State the principles of radio.	1		
10.2.2	Recognise the characteristics of radio	1	Propagation limitations	

10.2.2	waves.	1	Propagation limitations.	
10.2.3	State the use, characteristics and limitations of frequency bands.	1	Use in ATS, navigation and communications, usage and application in the Aeronautical Mobile Service, VHF, UHF, HF.	
10.2.4	State the use of radio in ANS.	1		
10.2.5	Describe the working principles of a transmitting and receiving system.	2		
10.2.6	Recognise, on a basic block diagram, the components of a transmitter/receiver system.	1		
10.2.7	State the principles of VDF/UDF.	1	VDF/UDF, QDM, QDR, QTF.	
10.2.8	State the precision of VDF/UDF used in the national system.	1		
10.2.9	State the use of other communications systems in ANS.	1	Telephone, interphone, intercom, email, internet, fax, etc.	
10.2.10	State the use of SELCAL and ACARS.	1	Airline operations.	
10.2.11	State the use of data link communications.	1	CPDLC.	

10.3. Aeronautical telecommunications systems				
10.3.1	List the main telecommunications networks used for the exchange of information.	1	AFTN, SITA, CIDIN, ATN, AMHS.	ICAO Annex 10; ICAO Annex 15; ICAO Doc 8126
10.3.2	Describe the main features of these networks.	2		ICAO Annex 10
10.3.3	Identify messages sent via these networks.	1	NOTAM, ATS and MET messages, etc.	
10.3.4	Recognise the benefits of the automatic exchange of AIS data.	1	Accuracy, speed, security, nonverbal communication.	
10.3.5	Recognise the limitations of the automatic exchange of AIS data.	1	Non-recognition of systems failure.	
10.3.6	State the working principles of broadcasting systems.	1	e.g. ATIS, VOLMET.	
10.3.7	Explain the use of these broadcasting systems in ATS.	2		
10.3.8	State the principles of closed circuit information systems.	1	CCIS.	
10.3.9	Explain the use of CCIS in AIS.	2	Data carried on CCIS.	

10.4. Surveillance systems				
10.4.1	State the principles of radar.	1		
10.4.2	Recognise the characteristics of radar waves.	1		
10.4.3	Recognise the use of different types of radar.	2	Long and short range radars, weather radar, high resolution radars.	
10.4.4	Recognise the characteristics, including limitations, of different types of radar.	1	Frequency bands, long and short range radars, weather radar, high resolution radars.	
10.4.5	Explain the working principles of primary radar.	2	PSR.	
10.4.6	Explain the working principles of secondary surveillance radar.	2	SSR, Mode A, Mode C.	
10.4.7	State the uses of PSR and SSR in ATC.	1	Surface movement, DFTI, PAR/GCA, aerodrome, approach and en-route.	
10.4.8	List the advantages and disadvantages of PSR and SSR.	1		
10.4.9	State the principles of Mode S.	1		
10.4.10	Recognise the use of Mode S in ATC systems.	1		
10.4.11	State the working principles of Automatic Dependent Surveillance systems.	1	ADS, satellite systems (GPS, GNSS), data links.	
10.4.12	Be aware of the use and limitations of ADS.	0	Situational awareness, Update times, no voice prompts, universal availability.	

10.5 Computerisation				
10.5.1	State the difference between hardware and software.	1		
10.5.2	Recognise hardware components.	1	Terminal, printer, keyboard, monitor, modem, network, etc.	
10.5.3	Recognise software components.	1	Programmes and applications, operating systems, files, etc.	
10.5.4	Describe common operating systems.	2	DOS, UNIX, LINUX, W INDOW S, etc.	
10.5.5	Use input devices.	3	Mouse, keyboard, touch input display, etc.	
10.5.6	Use text processing applications.	3	e.g. MS W ord, Excel.	
10.5.7	Use information storage devices.	3	File systems, CD-ROM, DVD, memory stick, etc.	

APPENDIX A
Curriculum for AIM / ARO / FPL Training

Module 2A: AIS Officer Training

*** Optional: subject(s) to be followed only if applicable to function tasks**

**** NON-Optional: subject(s) to followed which cannot be excluded,**
inorder to carry out the function accordingly

#	Subject / Topic	Credit	Recommended References	Compliancy Reference

1. THE AERONAUTICAL INFORMATION SERVICES

The general objectives are to enable students to:
Appreciate how the aeronautical information services function; Explain how information is collected and distributed

1.1 Principles of AIS**				
1.1.1	Recognise the need for AIS.	1		ICAO Annex; ICAO Doc 8126
1.1.2	Recognise the need for aeronautical information in ATM.	1		ICAO Annex 11
1.1.3	Identify the need for global uniformity.	1		ICAO Annex 15; ICAO Doc 8126
1.1.4	Identify the volume and scope of information handled by AIS.	1		
1.1.5	Differentiate between permanent and temporary information as well as information of an explanatory, advisory or administrative nature.	2	NOTAM and SUP versus AIP, AIP Amendment and AIC.	

1.2 Organisation of AIS**				
1.2.1	Describe the status of AIS within the aviation administration.	2		ICAO Doc 8126
1.2.2	Describe the organisation of the Aeronautical Information Service.	2		ICAO Doc 8126
1.2.3	Explain the liaison with other related services.	2		ICAO Doc 8126
1.2.4	Illustrate the information flow within AIS.	2		ICAO Doc 8126

1.3 Documentation**				
1.3.1	Explain the need for documentation.	2		ICAO Annex 15; National documentation
1.3.2	List the sources of documentation available.	1	ICAO publications, national regulations.	
1.3.3	List the documentation used in AIS.	1	National or local documentation, AIP and SOP.	ICAO Doc 8126
1.3.4	Describe the content of the most frequently used documents in AIS.	2	ICAO SARPs (Annexes), Docs (Procedures for Air Navigation Services), Manuals, Air Navigation Plan Publications, ICAO Doc 8126 other - IATA, ITU, WMO, local or national documentation.	ICAO Doc 8126
1.3.5	List methods to store, locate and retrieve documentation.	1	Electronic form (aeronautical databases), paper copy (manual library).	ICAO Doc 8126

1.4 Responsibilities and functions of AIS**				
1.4.1	Specify the responsibilities of a contracting state.	1	Provision of AIS.	ICAO Annex 15
1.4.2	Describe the functions of AIS.	2		ICAO Annex 15
1.4.3	Appreciate the need for the distribution of appropriate information.	2		ICAO Annex 15; ICAO Doc 8126;
1.4.4	Appreciate the need for the authenticity of information to be distributed.	2	Quality Management Systems.	ICAO Annex 15; ICAO Doc 8126
1.4.5	State the originators of raw data.	1	Local originators.	ICAO Doc 8126
1.4.6	List the various types of raw data.	1		ICAO Doc 8126
1.4.7	Describe the exchange of aeronautical information with other services or States.	2		ICAO Annex 15
1.4.8	Describe the means by which aeronautical information is distributed.	2	NOTAM, AIP, AIC, AIRAC, SUP.	
1.4.9	Recognise the information distributed through the AFS.	1	ATS messages, NOTAM, MET, AO, service messages, etc.	

1.5 Aeronautical Information Publication Products**				
1.5.1	Explain the need for the Integrated Aeronautical Package.	2	Collect, collate, edit, format, publish and distribute aeronautical information.	ICAO Annex 15
1.5.2	List the principle users of the Integrated Aeronautical Package.	1	Flight operations, ATS units, third party suppliers.	
1.5.3	List the contents of the Integrated Aeronautical Package.	1	AIP, AIP AMDT, AIP SUP, NOTAM, PIB, AIC and checklists, list of valid NOTAM.	ICAO Annex 15; ICAO Doc 8126
1.5.4	State the authority responsible for the publication and distribution of the Integrated Aeronautical Package.	1	National AIS/ANSP/NSA or delegated authority.	ICAO Annex 15; ICAO Doc 8126

1.5.5	Describe the methods of distribution of the Aeronautical Information Published Products.	2	Distribution list, mailing, fax, AFTN, email, other	
1.5.6	Explain the purpose of the AIP.	2	Essential information of a lasting character, permanent information and temporary changes of a long duration.	ICAO Annex 15; ICAO Doc 8126
1.5.7	Explain the structure of the AIP.	2	General (GEN), En route (ENR) and Aerodromes (AD).	ICAO Annex 15; ICAO Doc 8126
1.5.8	List the basic contents of Part 1 General (GEN).	1	National regulations and requirements, tables and codes, services, charges for ADs/Heliports and air navigation services.	ICAO Annex 15; ICAO Doc 8126
1.5.9	List the basic contents of Part 2 En route (ENR).	1	General rules and procedures, airspace classification, ATS routes, radio navigation aids and systems, navigation warnings, en route charts.	ICAO Annex 15; ICAO Doc 8126
1.5.10	List the basic contents of Part 3 Aerodromes (AD).	1	Aerodromes, heliports, charts.	ICAO Annex 15; ICAO Doc 8126
1.5.11	Explain how an AIP is updated.	2	AIP amendments, AIRAC, AIP supplements, NOTAM.	ICAO Annex 15
1.5.12	Explain the purpose of the AIP Amendment.	2	Permanent changes.	ICAO Annex 15; ICAO Doc 8126
1.5.13	Describe how AIP Amendments are produced.	2	Specifications, format, color coding.	ICAO Annex 15
1.5.14	Explain the purpose of the AIP Supplement.	2	Temporary changes of long duration, information of short duration with extensive text/graphics.	ICAO Annex 15; ICAO Doc 8126
1.5.15	Describe how AIP Supplements are produced.	2	Specifications, format, colour coding.	ICAO Annex 15; ICAO Doc 8126
1.5.16	Explain the purpose of NOTAM.	2	Information of a temporary nature and of short duration or when operationally significant permanent changes, or temporary changes of long duration.	ICAO Annex 15; ICAO Doc 8126
1.5.17	List the information contained in a NOTAM.	1		ICAO Annex 15; ICAO Doc 8126
1.5.18	Describe the NOTAM format.	2		ICAO Annex 15; ICAO Doc 8126
1.5.19	List special series NOTAM.	1	SNOWTAM, ASHTAM, BIRDTAM.	ICAO Annex 15; ICAO Doc 8126
1.5.20	Explain the purpose of the Preflight Information Bulletin (PIB).	2	Plain language bulletins, current information on the status of facilities.	ICAO Annex 15; ICAO Doc 8126
1.5.21	State sources of information in a PIB.	1	NOTAM, SNOWTAM and Met.	ICAO Annex 15; ICAO Doc 8126
1.5.22	Recognise the scope of a PIB.	1	Area to be covered.	ICAO Doc 8126
1.5.23	Describe the contents of a PIB.	2	Navigation warnings, general information, date and time of issue.	ICAO Doc 8126
1.5.24	List the bulletin types.	1	Area, route, aerodrome, urgent operational significance.	ICAO Doc 8126
1.5.25	Identify the structure of the PIB output.	1	Heading, en route and aerodrome information, navigation warnings.	ICAO Doc 8126
1.5.26	Explain the purpose of the Aeronautical Information Circular (AIC).	2	Administrative information, advanced notice of major changes.	ICAO Annex 15; ICAO Doc 8126
1.5.27	Explain the structure of the AIC.	2		ICAO Annex 15 ; ICAO Doc 8126
1.5.28	List information appropriate to an AIC.	1		ICAO Annex 15 ; ICAO Doc 8126
1.5.29	Explain the purpose of Checklists.	2		ICAO Doc 8126
1.5.30	Explain the purpose of lists of valid NOTAM.	2		ICAO Doc 8126

1.6 Aeronautical charts**				
1.6.1	Explain the need for aeronautical charts.	2		ICAO Annex 15; ICAO Doc 8126 ; ICAO Doc 8697
1.6.2	List the types of aeronautical charts.	1		ICAO Annex 15; ICAO Annex 4; ICAO Doc 8697
1.6.3	State the information contained in aeronautical charts.	1		ICAO Annex 4; ICAO Doc 8697
1.6.4	Identify symbols and information found on maps and charts.	1		ICAO Annex 4
1.6.5	Describe the operational function of aeronautical charts.	2		ICAO Annex 4; ICAO Doc 8697
1.6.6	Differentiate between the various relevant charts and state their specific use.	2	Charts provided by AIS, AIP charts, national and military aeronautical charts.	
1.6.7	State the ICAO categories for instrument approach charts.	1	Categories A, B, C, D – approach speeds.	ICAO Doc 8168

2. ARO and AERODROME AIS UNITS

The general objectives are to enable students to:
Understand the function of the Air Traffic Services Reporting Office (ARO); Understand the function of the Aerodrome AIS Unit;
Recognise the information required by pilots prior to a flight.

2.1 ATS reporting office and Aerodrome AIS Unit**				
2.1.1	State the main functions of an Air Traffic Services Reporting Office (ARO).	1	Flight plan acceptance.	
2.1.2	State the main functions of an Aerodrome AIS Unit.	1	Pre-flight briefing, post flight information.	
2.1.3	Specify the requirements for the physical location of an	1		Doc 8126

	ARO/Aerodrome AIS Unit.			
2.1.4	Describe the coverage zone of an ARO/Aerodrome AIS Unit.	2		Doc 8126
2.1.5	List the detailed information to be held.	1		ICAO Annex 15; ICAO Doc 8126

2.2 Flight plans *				
2.2.1	Define flight plan.	1		ICAO Annex 2
2.2.2	Differentiate the types of flight plan.	2	FPL, AFIL, RPL.	ICAO Doc 4444
2.2.3	Recognise ICAO model flight plan form.	1		ICAO Doc 4444
2.2.4	List the items contained in a flight plan.	1	Items and their denomination.	ICAO Annex 2; ICAO Doc 4444
2.2.5	Differentiate the three parts of a flight plan form.	2	Section COM, ATS data and supplementary information.	
2.2.6	Recognise the AFTN format (including supplementary information).	1	AFTN format, Flight plan AFTN message.	ICAO Doc 4444
2.2.7	Describe the conditions under which a flight plan shall be submitted.	2	Rules of the Air; national differences.	ICAO Annex 2
2.2.8	State the times when a flight plan has to be submitted.	1	Rules of the Air; national and regional differences regional differences.	ICAO Annex 2; ICAO Doc 7030
2.2.9	Explain the procedure for the submission of a flight plan.	2		ICAO Doc 4444
2.2.10	List the categories of ATS messages.	1	Emergency, movement/control and flight information messages.	ICAO Doc 4444
2.2.11	List the flight plan associated messages.	1		ICAO Doc 4444

2.3 Flight crew information *				
2.3.1	State the responsibility of pilots to obtain pre-flight briefing.	1		ICAO Annex 2; ICAO Annex 6
2.3.2	Be familiar with the flight preparation of a pilot.	0	Aircraft and equipment serviceability. Fuel, passenger and cargo manifest. AIS and MET briefing.	ICAO Annex 6
2.3.3	List methods of briefing.	1	Self-briefing (internet); personal, telephone, fax.	
2.3.4	State the purpose of post-flight information.	1		ICAO Annex 15; ICAO Doc 8126

3. GENERAL DATA MANAGEMENT

The general objectives are to enable students to: Receive and process incoming data;
Determine the method of publication; Distribute data for further processing.

3.1 Working procedures**				
3.1.1	Explain the need for working procedures.	2	Uniformity, reduction of errors, mistakes and duplication of work.	
3.1.2	Describe local working procedures.	2	e.g. Special filing procedures, local lists, checks for completeness, additional duties during night shift, etc.	Local procedures
3.1.3	Apply local working procedures.	3		

3.2 Emergency procedures**				
3.2.1	Describe procedures applicable in the event of equipment failure.	2	Hardware.	Local procedures
3.2.2	Describe procedures applicable in the event of the loss or nonreception of critical data.	2	Software and hardware.	Local procedures
3.2.3	Describe procedures applicable in the event of a severe threat to the AIS unit.	2	e.g. Fire, emergency evacuation, Local Quick Reference Handbook.	Local procedures
3.2.4	Select the appropriate checklists for the above emergency situations.	3	Local Quick Reference Handbook.	Local procedures

3.3 Operation of equipment and software**				
3.3.1	List the equipment and applications in use at the AIS unit.	1	Hardware and software.	
3.3.2	Describe the use of the various applications.	2	Software packages for AIS systems.	
3.3.3	Describe the use of the various items of equipment.	2		
3.3.4	Operate the equipment.	3	Simulated and/or under supervision.	

3.4 Error indications (computer, software)**				
3.4.1	Recognise the most significant error messages given by the software applications in use at the AIS unit.	1		Local procedures
3.4.2	Describe the significance of error messages given by the software applications in use at the AIS unit.	2		Local procedures
3.4.3	Take appropriate corrective action.	3		Local procedures

3.5 Encode/decode aeronautical information**				

3.5.1	Encode and decode ICAO "abbreviations and codes".	3		ICAO Doc 8400
3.5.2	Encode and decode national "abbreviations and codes".	3		National AIP; GEN 2
3.5.3	Encode and decode ICAO Location Indicators.	3		ICAO Doc 7910
3.5.4	Encode and decode ICAO Aircraft Type Designators.	3		ICAO Doc 8643
3.5.5	Encode and decode ICAO chart symbols.	3		ICAO Annex 4
3.5.6	Encode and decode national chart symbols.	3		National AIP GEN 3
3.5.7	Encode and decode NOTAM qualifiers.	3	NSC and Q-line.	ICAO Doc 8126
3.5.8	Encode and decode NOTAM items.	3	Items A-G.	ICAO Annex 15
3.5.9	Encode and decode SNOWTAM, ASHTAM, (BIRDTAM) items.	3	Items A-T.	ICAO Annex 15; SNOWTAM Harmonisation Guidelines

3.6 Translate aeronautical information**				
3.6.1	Translate aeronautical information using appropriate ICAO terminology.	3	Translate into English and/or local language.	ICAO Doc 9713

3.7 Perform quality checks on raw data and aeronautical information**				
3.7.1	Verify the raw data.	3	Authorised source, completeness, accuracy, validity, etc.	ICAO Annex 15; ADP and SDP; ICAO Doc 8126
3.7.2	Verify completeness, validity and presentation of aeronautical information.	3	*Note: Refers to product before distribution.*	

3.8 Process post-flight information*				
3.8.1	Describe the method of processing post-flight information.	2		ICAO Annex 15; ICAO Doc 8126
3.8.2	Process post-flight information.	3		

3.9 Provide data for compiling statistical data**				
3.9.1	Select the required data for compiling statistical data.	3		Local procedures
3.9.2	Retrieve the required data for compiling statistical data.	3		Local procedures
3.9.3	Deliver the required data for compiling statistical data.	3		Local procedures

3.10 Ensure traceability of data/aeronautical information**				
3.10.1	Explain the need for recording and filing raw data.	2		ICAO Doc 8126; EUROCONTROL ADP and SDP
3.10.2	Describe the procedures to ensure traceability of data/aeronautical information.	2		Local procedures
3.10.3	Apply the procedures to ensure traceability of data/aeronautical information.	3		
3.10.4	Detect data anomalies or errors.	3		
3.10.5	Correct data anomalies or errors.	3		Local procedures

3.11 Process raw data**				
3.11.1	List the authorised sources of raw data.	1		ICAO Doc 8126
3.11.2	Describe the type of data originating from authorised sources of raw data.	2		
3.11.3	List channels of communication for the submission of raw data.	1	Fax, email, mail, AFTN, etc.	ICAO Doc 8126
3.11.4	Verify that the raw data to be published by AIS comes from an appropriate originator.	3		ICAO Annex 15; Local procedures
3.11.5	Describe the process used for filing raw data.	2		Local procedures
3.11.6	File raw data.	3		
3.11.7	Describe the process of verifying the raw data.	2		ICAO Annex 15; EUROCONTROL ADP and SDP
3.11.8	Verify raw data.	3		
3.11.9	Describe the criteria to be applied for determining the categories of information.	2	Basic, permanent, temporary and of short duration, temporary and of long duration. Information of an explanatory, advisory or administrative nature.	ICAO Doc 8126
3.11.10	Associate the categories of information with the methods of publication.	3	AIP + AMDT, AIC, SUP, NOTAM and charts.	ICAO Annex 15
3.11.11	Select the means of publication.	3		
3.11.12	Determine if proposed publication/effective date can be met.	3		Local procedures
3.11.13	Request a new publication date if necessary.	3	Co-ordinate a new publication/ effective date when the proposed publication/effective date cannot be met	Local procedures

3.11.14	Describe the process of data distribution for further processing.	2		Local procedures
3.11.15	Distribute the data for further processing.	3		Local procedures

4. STATIC DATA

The general objectives are to enable students to:
Describe and explain the purpose, function and significance of static data; Store static data in a database;
Provide required static data for other databases.

4.1 Significance of static data**				
4.1.1	Explain the purpose, function and significance of static data.	2		ICAO Doc 8126;

4.2 Compile positional data**				
4.2.1	Explain the requirements for the formatting and resolution of positional data.	2		ICAO Annex 15; ICAO Doc 812;6 ICAO Annex 4
4.2.2	Convert positional data into the required format and resolution.	3		ICAO Doc 9674; ICAO Doc 8126; ICAO Annex 4

4.3 Store static data (including positional data)**				
4.3.1	Describe the procedures for storing static data.	2		Local Database Manual
4.3.2	Describe the criteria to be applied for storing data into the database.	2		Local Database Manual
4.3.3	Store data in the database.	3		Local Database Manual

4.4 Maintain database of static data**				
4.4.1	Describe the model of the database used.	2	ORACLE, SQL, SAP Relational databases, Connection to GIS, AICM/AIXM	Local Database Manual
4.4.2	Describe the structure of the database used.	2		Local Database Manual
4.4.3	Operate the database used.	3		Local Database Manual
4.4.4	Describe the quality checks carried out on the data base.	2	Automatic or manual.	Local Database Manual; Local procedures
4.4.5	Carry out quality checks.	3		Local procedures
4.4.6	Compile the necessary reports/notifications on changes in the database.	3		Local procedures
4.4.7	Transmit the reports/notifications to database users.	3		Local procedures
4.4.8	Record updates to the static data database.	3		Local procedures

4.5 Maintain the library of foreign AIS publications**				
4.5.1	Describe the procedures for updating the library of foreign AIS publications.	2		Local procedures
4.5.2	Update the library of foreign AIS publications.	3		Local procedures
4.5.3	Record updates made to the library of foreign AIS publications.	3		Local procedures

4.6 Prepare static data for other national and international databases**				
4.6.1	List the requirements of the EAD for static data.	1		EAD User manual SDO DP Operational User Handbook DP
4.6.2	Describe the process of updating the EAD data base.	2		EAD User manual SDO DP; Operational User Handbook DP
4.6.3	Select the required static data for EAD.	3		Local procedures
4.6.4	Provide static data to EAD.	3		EAD User manual SDO DP; Operational User Handbook DP
4.6.5	Explain the requirements of national databases for static data.	2		Local procedures
4.6.6	Describe the process of updating other national databases.	2		Local procedures
4.6.7	Select the required static data for other national databases.	3		Local procedures
4.6.8	Provide static data to other national databases.	3		Local procedures
4.6.9	Record the provision of static data to other national database.	3		Local procedures

5. DYNAMIC DATA

The general objectives are to enable students to:

Describe and explain the purpose, function and significance of dynamic data;
Prepare, distribute and store outgoing dynamic data;
Receive process and store incoming dynamic data.

5.1 Significance of dynamic data**				
5.1.1	Explain the purpose, function and significance of dynamic data.	2		

5.2 General**				
5.2.1	State NOTAM types.	1	NOTAM -N, -R and -C.	ICAO Doc 8126;
5.2.2	Explain the application of NOTAM -N, -R and -C.	2		ICAO Doc 8126;
5.2.3	State NOTAM series and number.			ICAO Annex 15; National series assignment
5.2.4	Describe NOTAM item content.	2	Item Q) and Items A) to G).	ICAO Annex 15
5.2.5	Explain the purpose of NOTAM qualifiers (Q-Line).		NOTAM Selection Criteria (NSC), automation.	ICAO Doc 8126
5.2.6	State the general rules relating to NOTAM qualifiers.	1		ICAO Doc 8126;
5.2.7	Describe the content of NOTAM qualifiers.	2	FIR, NOTAM code, traffic, purpose, scope, lower/upper, geographical reference, radius.	ICAO Annex 15;

5.3 Process foreign dynamic data**				
5.3.1	Convert NOTAM received into a correctly formatted system NOTAM.	3		Local procedures
5.3.2	Check all items of incoming NOTAM.	3	Syntax.	Local procedures
5.3.3	Translate Item E into English.	3		Local procedures
5.3.4	Clarify erroneous and/or ambiguous NOTAM content.	3	Check with NOTAM originator.	Local procedures
5.3.5	Check NOTAM sequence.	3	Manually or semi- automatically.	Local procedures
5.3.6	Request missing NOTAM.	3	Investigation, time limit.	Local procedures
5.3.7	Explain the purpose of a NOTAM database.	2	NOTAM production, PIB.	ICAO Doc 8126
5.3.8	Describe NOTAM storage	2	Electronic, manual.	Local procedures
5.3.9	State the area of coverage of a NOTAM database.			
5.3.10	Describe quality control procedures.			
5.3.11	Carry out quality control checks.			
5.3.12	Explain the requirement to redistribute NOTAM.			
5.3.13	Describe procedures for NOTAM re-distribution.			
5.3.14	Address NOTAM for redistribution.			Local procedures
5.3.15	Re-distribute NOTAM.			
5.3.16	Identify foreign checklists.			Local procedures
5.3.17	Describe procedures for comparing foreign checklists with stored NOTAM.		Semi-automatic or manual.	Local procedures
5.3.18	Store foreign NOTAM.			Local procedures

5.4 Publish NOTAM*				
5.4.1	Analyse NOTAM proposal for further processing.	3		Local procedures
5.4.2	Allocate NOTAM series, number and type.	3		Local procedures
5.4.3	Encode the qualifier line and all identifiers.	3	NOTAM Selection Criteria.	ICAO Doc 8126; Local procedures
5.4.4	Complete all NOTAM items.	3		ICAO Doc 8126;
5.4.5	Address NOTAM.	3		Local procedures
5.4.6	Describe procedures for NOTAM distribution.	2		Local procedures
5.4.7	Distribute NOTAM.	3		ICAO Doc 8126;
5.4.8	Store published NOTAM in NOTAM database.	3		Local procedures

5.5 Publish NOTAM checklist*				
5.5.1	Explain the rules for producing a NOTAM checklist.	2		ICAO Doc 8126; ICAO Annex 15;
5.5.2	Produce a NOTAM checklist.	3	Manual or automatic.	Local procedures;
5.5.3	Address a NOTAM checklist.			Local procedures;
5.5.4	Distribute a NOTAM checklist.			ICAO Doc 8126; Local procedures;
5.5.5	Store published NOTAM checklist in NOTAM database.			Local procedures;

5.6 Publish Trigger NOTAM*				
5.6.1	Explain the purpose of 'trigger' NOTAM.			
5.6.2	Describe 'trigger' NOTAM procedures relevant to AIRAC Amendment.			ICAO Doc 8126; Local procedures

5.6.3	Describe trigger NOTAM procedures relevant to AIP Supplements.			ICAO Doc 8126; Local procedures
5.6.4	Produce 'trigger' NOTAM.			ICAO Doc 8126
5.6.5	Address 'trigger' NOTAM.			Local procedures
5.6.6	Distribute 'trigger' NOTAM.			Local procedures
5.6.7	Store the published 'trigger' NOTAM checklist in the NOTAM database.			Local procedures

5.7 Publish SNOWTAM*				
5.7.1	Explain the purpose of 'SNOWTAM'.	2		ICAO Annex 15;
5.7.2	Name the originator(s) of raw data for SNOWTAM.	1		
5.7.3	Describe the methods of obtaining raw data for SNOWTAM.	2		
5.7.4	Describe the methods by which data for SNOWTAM is transmitted to AIS.	2		
5.7.5	Complete SNOWTAM form.	3		
5.7.6	Address SNOWTAM.	3		
5.7.7	Distribute SNOWTAM.	3		
5.7.8	Store the published SNOWTAM in NOTAM database.	3		

5.8 Publish ASHTAM*				
5.8.1	Explain the purpose of 'ASHTAM'.	2		Local procedures
5.8.2	Name the originator(s) of raw data for ASHTAM.	1		Local procedures
5.8.3	Explain the methods of obtaining raw data for ASHTAM.	2		Local procedures
5.8.4	Describe the methods by which data for ASHTAM is transmitted to AIS.	2		Local procedures
5.8.5	Complete ASHTAM format.	3		ICAO Annex 15; Local procedures
5.8.6	Address ASHTAM.	3		Local procedures
5.8.7	Describe procedures for ASHTAM distribution.	2		Local procedures
5.8.8	Distribute ASHTAM.	3		Local procedures
5.8.9	Store published ASHTAM in NOTAM database.	3		Local procedures

5.9 Produce PIB*				
5.9.1	Describe the content of an area bulletin.	2	NOTAM, ASHTAM.	ICAO Doc 8126
5.9.2	Describe the content of a route bulletin.	2	NOTAM, ASHTAM.	ICAO Doc 8126
5.9.3	Describe the content of an aerodrome bulletin.	2	NOTAM, SNOWTAM, METAR, TAF.	ICAO Doc 8126
5.9.4	Describe the content of an administrative bulletin.	2		ICAO Doc 8126
5.9.5	Explain the procedure for the preparation of a PIB.	2		ICAO Doc 8126
5.9.6	Access relevant data for PIB production.	3		Local procedures
5.9.7	Retrieve selected data for PIB production.	3		Local procedures
5.9.8	Compile PIB.	3		Local procedures
5.9.9	Transmit PIB to customer.	3		Local procedures

5.10 Prepare tailored dynamic data**				
5.10.1	Access relevant data for tailored dynamic data production.	3		Local procedures
5.10.2	Retrieve selected data for tailored dynamic data production.	3		Local procedures
5.10.3	Compile tailored dynamic data.	3		Local procedures
5.10.4	Transmit tailored dynamic data to customer.	3		Local procedures

6. PUBLICATIONS

The general objectives are to enable students to:
Describe and explain the processes and procedures for the preparation of aeronautical publications;
Process incoming data for publication;
Prepare, distribute and store publications.

6.1 General procedures**				
6.1.1	Describe the appropriate form for the publication of aeronautical information.	2	AIP, AIP Amendment, AIP Supplement, AIRAC, AIC.	ICAO Doc 8126; Local procedures
6.1.2	Describe the process for preparing the master copy.	2	Proof-reading, authorisation procedure.	ICAO Doc 8126
6.1.3	Describe the process for the reproduction of publications.	2	Electronic pre-press, offset printing, digital printing, analogue photocopying.	ICAO Doc 8126; Local procedures
6.1.4	Describe the procedure for transferring the copy to the printing office.	2		Local procedures
6.1.5	Describe the procedure for distributing printed/electronic	2		Local procedures;

6.1.5	publications.	2		eAIP Specification
6.1.6	Describe the procedure for maintaining the library of valid printed/electronic publications.	2	AIP, AIC, SUPs, etc.	Local procedures; eAIP Specification
6.1.7	Describe the procedure for maintaining the archive of cancelled/replaced publications.	2	AIP, AIC, SUPs, etc.	Local procedures

6.2 Publish AIC**				
6.2.1	Describe the information to be notified by an AIC.	2		ICAO Annex 15; ICAO Doc 8126; Local procedures.
6.2.2	Describe the procedure for publishing an AIC checklist.	2		ICAO Doc 8126
6.2.3	Describe the format of an AIC.	2	International and national series.	ICAO Doc 8126

6.3 Publish AIP**				
6.3.1	Describe the structure of the AIP.	2	GEN, ENR, AD.	ICAO Annex 15; ICAO Doc 8126,
6.3.2	List in detail the aeronautical information contained in each section of Part 1 - General (GEN).	1		ICAO Annex 15; ICAO Doc 8126; National AIP
6.3.3	List in detail the aeronautical information contained in each section of Part 2 - En-route (ENR).	1		ICAO Annex 15; ICAO Doc 8126; National AIP
6.3.4	List in detail the aeronautical information contained in each section of Part - 3 Aerodromes (AD).	1		ICAO Annex 15; ICAO Doc 8126; National AIP
6.3.5	Determine the section(s) or subsection(s) of the AIP to which aeronautical information applies.	3		ICAO Annex 15; ICAO Doc 8126; National AIP
6.3.6	Select chart(s) to be inserted in an appropriate section(s) or subsection(s) of the AIP.	3		ICAO Annex 15; ICAO Doc 8126
6.3.7	Describe the methods by which an AIP is updated.	2	AIP Amendment, AIP Supplement, AIRAC, NOTAM, eAIP.	ICAO Annex 15; eAIP Specification
6.3.8	Differentiate between AIP Amendment and AIP Supplement.	2	Permanent or temporary change.	ICAO Annex 15; ICAO Doc 8126

6.4 Publish AIP AMENDMENT**				
6.4.1	Describe the information contained in an AIP Amendment.	2		ICAO Annex 15; ICAO Doc 8126
6.4.2	Describe the format of an AIP Amendment.	2		ICAO Doc 8126
6.4.3	Explain the AIRAC system.	2		ICAO Annex 15; ICAO Doc 8126
6.4.4	Describe what type of information shall be notified by AIRAC.	2		ICAO Annex 15; ICAO Doc 8126
6.4.5	Differentiate between information to be issued by AIP Amendment or AIRAC AIP Amendment.	2	Operationally significant information, AIRAC notifications, effective and publication dates, numbering, color of over- page.	ICAO Doc 8126
6.4.6	Adhere to the significant dates for AIRAC publication.	3	Effective, publication and latest dates.	ICAO Doc 8126; Local procedures

6.5 Publish AIP SUPPLEMENT**				
6.5.1	Describe the aeronautical information contained in an AIP Supplement.	2		ICAO Doc 8126
6.5.2	Describe the format of an AIP Supplement.	2		ICAO Doc 8126
6.5.3	Describe the procedure for publishing AIP Supplements checklist.	2		ICAO Doc 8126
6.5.4	Determine what kind of information shall be notified by AIP Supplements.	3		ICAO Annex 15; ICAO Doc 8126

6.6 Publish additional information for specific purposes**				
6.6.1	Describe the procedure for compiling a publication with additional information for specific purposes.	2		Local procedures

7. CHARTING

The general objectives are to enable students to:
Describe and explain the purpose, function and significance of charting;
Process incoming data for charting;
Prepare, distribute and store charts.

7.1 General introduction**				
7.1.1	Explain the purpose and significance of charting.	2		ICAO Annex 4
7.1.2	Describe the main characteristics of aeronautical charts.	2	Scale, format, coverage, size, layout, conformity.	ICAO Annex 4
7.1.3	List different types of Aeronautical charts.	3		ICAO Annex 4
7.1.4	Describe contents of different aeronautical charts.	3		ICAO Annex 4
			Use of data;	ICAO Annex 4

7.1.5	Decode the data depicted on charts.	3	interpretation, legend.	ICAO Doc 8126 ICAO Doc 8697
7.1.6	Differentiate between the ICAO categories for instrument approach charts.	2		ICAO Doc 8168
7.1.7	Describe the process for chart production.	2		Local procedures

7.2 Updating existing charts*				
7.2.1	Select chart(s) to be updated.	3		Local procedures
7.2.2	Select a method of updating.	3	Chart update or hand- amendment	Local procedures
7.2.3	Allocate appropriate symbol to aeronautical information.	3	Appropriate chart symbol.	ICAO Annex 4
7.2.4	Insert new data and/or change existing data.	3		ICAO Annex 4 Local procedures
7.2.5	Adapt the layout accordingly.	3	Layout, display data for the best presentation.	ICAO Doc 8697

7.3 Creating new charts*				
7.3.1	Determine the area to be covered.	3	Coverage and scale.	ICAO Annex 4
7.3.2	Verify availability of basic map data.	3	Topographical data.	Local procedures
7.3.3	Apply the appropriate format according to the type of the chart required.	3	Format.	ICAO Annex 4 ICAO Doc. 8697
7.3.4	Determine magnetic variation.	3		Local procedures
7.3.5	Compile aeronautical information/data.	3		Local procedures
7.3.6	Allocate appropriate symbol to aeronautical information.	3	Appropriate chart symbol.	ICAO Annex 4
7.3.7	Adapt the layout accordingly	3	Layout, display data for the best presentation.	ICAO Doc 8697
7.3.8	Edit / produce prototype chart	3	If in-house production.	ICAO Doc 8697
7.3.9	Prepare chart production order for a cartographer	3	If external production.	Local procedures

7.4 Verification of updated or new charts**				
7.4.1	Verify completeness, accuracy and presentation of the chart	3	Perform Quality checks.	Local procedures
7.4.2	Verify the updated or new chart with originator	3		Local procedures
7.4.3	Prepare printing order	3		Local procedures
7.4.4	Print chart	3		Local procedures
7.4.5	Provide chart for distribution in requested format/ media	3		Local procedures

7.5 Maintain aeronautical chart library**				
7.5.1	File charting documentation.	3		Local procedures

8. ARO / FLIGHT PLANNING FUNCTIONS

The general objectives are to enable students to:
Receive, verify and process incoming data;
Prepare and conduct an appropriate and complete briefing.

8.1 Process FPL and FPL associated messages*				
8.1.1	Explain all the items of a flight plan form.	2	Items and their content.	ICAO Doc 4444
8.1.2	State the cruising speeds of the most common types of aircraft.	1	Especially the most common local aircraft.	Local procedures
8.1.3	Decode FPL items.	3		ICAO Doc 4444
8.1.4	Encode FPL items.	3		ICAO Doc 4444
8.1.5	Verify all items of a flight plan.	3		ICAO Doc 4444;
8.1.6	Describe the procedures for addressing a flight plan.	2		ICAO Doc 7910;
8.1.7	Address a flight plan.	3		ICAO Doc 7910;
8.1.8	Apply the flight plan filing time procedures.	3	1hr, 3hr and national regional and local regulations, delays and earlier departures.	ICAO Annex 2; National AIP; ICAO Doc 7030;
8.1.9	Apply flight plan transmission procedures.	3	e.g. AFTN format, local procedures.	ICAO Doc 4444; ICAO Annex 10
8.1.10	List relevant CFMU limitations when filing a flight plan.	1	CIA, ANM, CRAM, AIM, SLOT, etc.RAD and ENV database.	
8.1.11	Describe the categories of ATS messages.	2	ATS or FPL.	ICAO Doc 4444
8.1.12	Differentiate the types of ATS messages and their designator.	2	ATS or FPL.	ICAO Doc 4444
8.1.13	Prepare flight plan associated messages.	3		ICAO Doc 4444
8.1.14	Address FPL associated messages.	3		ICAO Doc 4444
8.1.15	Apply flight plan associated messages transmission procedures.	3	AFTN format, local procedures.	ICAO Doc 4444; ICAO Annex 10
8.1.16	Prepare supplementary messages.	3		ICAO Doc 4444
8.1.17	Address supplementary messages.	3		ICAO Doc 4444
8.1.18	Apply supplementary messages transmission procedures.	3	AFTN format, local procedures.	ICAO Doc 4444; ICAO Annex 10
8.1.19	Describe methods of storage for a flight plan and ATS messages.	2	Manual or electronic.	Local procedures

8.1.20	Store flight plan and ATS messages.	3		Local procedures
8.1.21	Explain the purpose of a repetitive flight plan (RPL).	2		ICAO Doc 4444
8.1.22	Describe all the items contained in a RPL.	2		ICAO Doc 4444
8.1.23	Explain the collection, storage and processing of RPL data.	2	Manual or electronic.	ICAO Doc 4444; ICAO Annex 10;
8.1.24	Explain the implications for a flight plan with a special status.	2	STS/HOSP, Head of State, EXM833, etc.	

8.2 Provide information for flight preparation*				
8.2.1	List the content of pre-flight information.	1	NOTAM, SNOWTAM, ASHTAM, NAT tracks, MET info, charts, ATFM messages, national publications.	
8.2.2	Explain the scope of the available briefing material.	2		
8.2.3	Appreciate the significance of a briefing for the customer.	2		
8.2.4	Locate the required information in the appropriate documentation.	3	AIP, AIC, Charts, etc.	
8.2.5	Retrieve required information from the data base.	3	VFR, IFR, national or international flight, etc.	
8.2.6	Communicate the required information to the customer using the appropriate technique.	3	Compile and print out, face to face, fax, phone, email, etc.	
8.2.7	Provide additional information on request.	3	Update service.	

8.3 Accept post-flight information and transmit it to ATS/AIS*				
8.3.1	Accept post-flight information.	3	Incident/accident reports, landing information and general in-flight reports.	ICAO Annex 15; ICAO Doc 8126
8.3.2	Transmit post-flight information to ATS/AIS.	3		Local procedures

8.4 Support incident investigation (ARO side)*				
8.4.1	Explain the procedures for the handling of an incident report form.	2		ICAO Doc 4444; ICAO Doc 9426; Local procedures; National AIP
8.4.2	Accept incident report forms.	3		Local procedures
8.4.3	Transmit the incident report forms to the appropriate authority.	3		Local procedures
8.4.4	Describe the procedures applicable in support of investigations.	2	Role of ARO in conjunction with other units and or police.	Local procedures
8.4.5	Apply the procedures applicable in support of investigations.	3		Local procedures

8.5 Compile statistical data*				
8.5.1	List the type of statistical data required from ARO.	1		Local procedures

9. COORDINATION

The general objectives are to enable students to:
Identify when co-ordination has to be performed;
Conduct coordination in an appropriate manner.

9.1 General**				
9.1.1	Explain the need for co-ordination.	2		
9.1.2	Explain the methods of coordination.	2	Face to face, phone, fax, email, internet, standardised procedures, language used, records/log sheet, etc.	Local procedures
9.1.3	Use appropriate coordination techniques.	3	Verbal, written etc.	Local procedures
9.1.4	Describe the interaction with other data systems.	2	Data links, EAD, pre-flight database, online applications etc.	Local procedures

9.2 Co-ordinate with data sources**				
9.2.1	Clarify erroneous and/or ambiguous content with the source of the data.	3	SLA's	Local procedures;
9.2.2	Request missing elements.	3	SLA's	Local procedures

9.3 Co-ordinate between AIS functions**				
9.3.1	Describe the principle functions within AIS.	2	AIS functions.	ICAO Doc 8126
9.3.2	Determine when/what to coordinate with other AIS functions.	3	AIS functions at local and adjacent units.	Local procedures

9.4 Co-ordinate with customers**				
9.4.1	List the principle customers of an AIS unit.	1	AOs, private pilots, ATC, handling companies, other AIS units local/foreign etc.	ICAO Doc 8126
9.4.2	Characterise the customers of the AIS unit.	2	e.g. Professional, non-professional, frequent or infrequent user, etc.	

9.4.3	Describe co-ordination procedures with ATS units.	2	TWR, APP, ACC, FIC, SLA's.	Local procedures
9.4.4	Describe co-ordination procedures with other agencies/services.	2	MET, technical services, aircraft operators, CFMU, regulator, SLA's etc.	ICAO Doc 9377; Local procedures;
9.4.5	Communicate the required information to the customer.	3		Local procedures
9.4.6	Clarify the meaning of the information provided, if requested.	3		Local procedures
9.4.7	Provide any additional information if requested.	3		Local procedures

9.5 Human factors aspects in co-ordination**				
9.5.1	State factors affecting the quality of communication.	1		ICAO Doc 9683
9.5.2	Identify communication and thinking patterns.	1		
9.5.3	Explain common behavioural patterns of customers.	2		
9.5.4	Select the appropriate way for dealing with customers.	3		
9.5.5	Apply the rules for concise communication.	3		
9.5.6	Demonstrate correct behaviour in a conflict situation.	3		
9.5.7	Demonstrate correct handling of customer complaints.	3		

Module 2B: ARO / Flight Plan Officer Training

* *Optional: subject(s) to be followed only if applicable to function tasks*

** *NON-Optional: subject(s) to followed which cannot be*

excluded, inorder to carry out the function accordingly

#	Subject / Topic	Credit	Recommended References	Compliancy Reference

1. THE AERONAUTICAL INFORMATION SERVICES

The general objectives are to enable students to:

Appreciate how the aeronautical information services function; Explain how information is collected and distributed

#	Subject / Topic	Credit	Recommended References	Compliancy Reference
1.1 Principles of AIS*				
1.1.1	Recognise the need for AIS.	1		ICAO Annex; ICAO Doc 8126
1.1.2	Recognise the need for aeronautical information in ATM.	1		ICAO Annex 11
1.1.3	Identify the need for global uniformity.	1		ICAO Annex 15; ICAO Doc 8126
1.1.4	Identify the volume and scope of information handled by AIS.	1		
1.1.5	Differentiate between permanent and temporary information as well as information of an explanatory, advisory or administrative nature.	2	NOTAM and SUP versus AIP, AIP Amendment and AIC.	

#	Subject / Topic	Credit	Recommended References	Compliancy Reference
1.2 Organization of AIS*				
1.2.1	Describe the status of AIS within the aviation administration.	2		ICAO Doc 8126
1.2.2	Describe the organization of the Aeronautical Information Service.	2		ICAO Doc 8126
1.2.3	Explain the liaison with other related services.	2		ICAO Doc 8126
1.2.4	Illustrate the information flow within AIS.	2		ICAO Doc 8126

#	Subject / Topic	Credit	Recommended References	Compliancy Reference
1.3 Documentation**				
1.3.1	Explain the need for documentation.	2		ICAO Annex 15; National documentation
1.3.2	List the sources of documentation available.	1	ICAO publications, national regulations.	
1.3.3	List the documentation used in AIS.	1	National or local documentation, AIP and SOP.	ICAO Doc 8126, 4444
1.3.4	Describe the content of the most frequently used documents in ARO.	2	ICAO SARPs (Annexes), Docs (Procedures for Air Navigation Services), Manuals, Air Navigation Plan Publications, ICAO Doc 8126, 4444, other - IATA, ITU, W MO, local or national documentation.	ICAO Doc 8126, 4444
1.3.5	List methods to store, locate and retrieve documentation.	1	Electronic form (aeronautical databases), paper copy (manual library).	ICAO Doc 8126, 4444

#	Subject / Topic	Credit	Recommended References	Compliancy Reference
1.4 Responsibilities and functions of AIS and ARO**				
1.4.1	Specify the responsibilities of a contracting state.	1	Provision of AIS.	ICAO Annex 15
1.4.2	Describe the functions of AIS.	2		ICAO Annex 15
1.4.3	Appreciate the need for the distribution of appropriate information.	2		ICAO Annex 15; ICAO Doc 8126;
1.4.4	Appreciate the need for the authenticity of information to be distributed.	2	Quality Management Systems.	ICAO Annex 15; ICAO Doc 8126
1.4.5	State the originators of raw data.	1	Local originators.	ICAO Doc 8126
1.4.6	List the various types of raw data.	1		ICAO Doc 8126
1.4.7	Describe the exchange of aeronautical information with other services or States.	2		ICAO Annex 15
1.4.8	Describe the means by which aeronautical information is distributed.	2	NOTAM, AIP, AIC, AIRAC, SUP.	
1.4.9	Recognise the information distributed through the AFS.	1	ATS messages, NOTAM, MET, AO, service messages, etc.	

2. ARO / FPL and AERODROME AIS UNITS

The general objectives are to enable students to:

Understand the function of the Air Traffic Services Reporting Office (ARO); Understand the function of the Aerodrome AIS Unit;
Recognize the information required by pilots prior to a flight.

	2.1 ATS reporting office / Flight Planning Office and Aerodrome AIS Unit**		
2.1.1	State the main functions of an Air Traffic Services Reporting Office (ARO).	1	Flight plan acceptance.	
2.1.2	State the main functions of an Aerodrome AIS Unit.	1	Pre-flight briefing, post flight information.	
2.1.3	Specify the requirements for the physical location of an ARO/Aerodrome AIS Unit.	1		Doc 8126
2.1.4	Describe the coverage zone of an ARO/Aerodrome AIS Unit.	2		Doc 8126
2.1.5	List the detailed information to be held.	1		ICAO Annex 15; ICAO Doc 8126

	2.2 Flight plans**		
2.2.1	Define flight plan.	1		ICAO Annex 2
2.2.2	Differentiate the types of flight plan.	2	FPL, AFIL, RPL.	ICAO Doc 4444
2.2.3	Recognise ICAO model flight plan form.	1		ICAO Doc 4444
2.2.4	List the items contained in a flight plan.	1	Items and their denomination.	ICAO Annex 2; ICAO Doc 4444
2.2.5	Differentiate the three parts of a flight plan form.	2	Section COM, ATS data and supplementary information.	
2.2.6	Recognise the AFTN format (including supplementary information).	1	AFTN format, Flight plan AFTN message.	ICAO Doc 4444
2.2.7	Describe the conditions under which a flight plan shall be submitted.	2	Rules of the Air; national differences.	ICAO Annex 2
2.2.8	State the times when a flight plan has to be submitted.	1	Rules of the Air; national and regional differences regional differences.	ICAO Annex 2; ICAO Doc 7030
2.2.9	Explain the procedure for the submission of a flight plan.	2		ICAO Doc 4444
2.2.10	List the categories of ATS messages.	1	Emergency, movement/control and flight information messages.	ICAO Doc 4444
2.2.11	List the flight plan associated messages.	1		ICAO Doc 4444

	2.3 Flight crew information**		
2.3.1	State the responsibility of pilots to obtain pre-flight briefing.	1		ICAO Annex 2; ICAO Annex 6
2.3.2	Be familiar with the flight preparation of a pilot.	0	Aircraft and equipment serviceability. Fuel, passenger and cargo manifest. AIS and MET briefing.	ICAO Annex 6
2.3.3	List methods of briefing.	1	Self-briefing (internet); personal, telephone, fax.	
2.3.4	State the purpose of post-flight information.	1		ICAO Annex 15; ICAO Doc 8126

3. DYNAMIC DATA

The general objectives are to enable students to:
Describe and explain the purpose, function and significance of dynamic data; Prepare, distribute and store outgoing dynamic data;
Receive process and store incoming dynamic data.

	3.1 Significance of dynamic data**		
3.1.1	Explain the purpose, function and significance of dynamic data.	2		

	3.2 General**		
3.2.1	State NOTAM types.	1	NOTAM -N, -R and -C.	ICAO Doc 8126;
3.2.2	Explain the application of NOTAM -N, -R and -C.	2		ICAO Doc 8126;
3.2.3	State NOTAM series and number.			ICAO Annex 15; National series assignment
3.2.4	Describe NOTAM item content.	2	Item Q) and Items A) to G).	ICAO Annex 15
3.2.5	Explain the purpose of NOTAM qualifiers (Q-Line).		NOTAM Selection Criteria (NSC), automation.	ICAO Doc 8126
3.2.6	State the general rules relating to	1		ICAO Doc 8126;

3.2.6	NOTAM qualifiers.	1		ICAO Doc 8126;
3.2.7	Describe the content of NOTAM qualifiers.	2	FIR, NOTAM code, traffic, purpose, scope, lower/upper, geographical reference, radius.	ICAO Annex 15;

	3.3 Process foreign dynamic data*			
3.3.1	Convert NOTAM received into a correctly formatted system NOTAM.	3		Local procedures
3.3.2	Check all items of incoming NOTAM.	3	Syntax.	Local procedures
3.3.3	Translate Item E into English.	3		Local procedures
3.3.4	Clarify erroneous and/or ambiguous NOTAM content.	3	Check with NOTAM originator.	Local procedures
3.3.5	Check NOTAM sequence.	3	Manually or semi- automatically.	Local procedures
3.3.6	Request missing NOTAM.	3	Investigation, time limit.	Local procedures
3.3.7	Explain the purpose of a NOTAM database.	2	NOTAM production, PIB.	ICAO Doc 8126
3.3.8	Describe NOTAM storage	2	Electronic, manual.	Local procedures
3.3.9	State the area of coverage of a NOTAM database.			
3.3.10	Describe quality control procedures.			
3.3.11	Carry out quality control checks.			
3.3.12	Explain the requirement to redistribute NOTAM.			
3.3.13	Describe procedures for NOTAM re-distribution.			
3.3.14	Address NOTAM for redistribution.			Local procedures
3.3.15	Re-distribute NOTAM.			
3.3.16	Identify foreign checklists.			Local procedures
3.3.17	Describe procedures for comparing foreign checklists with stored NOTAM.		Semi-automatic or manual.	Local procedures
3.3.18	Store foreign NOTAM.			Local procedures

	3.4 Publish NOTAM*			
3.4.1	Analyse NOTAM proposal for further processing.	3		Local procedures
3.4.2	Allocate NOTAM series, number and type.	3		Local procedures
3.4.3	Encode the qualifier line and all identifiers.	3	NOTAM Selection Criteria.	ICAO Doc 8126; Local procedures
3.4.4	Complete all NOTAM items.	3		ICAO Doc 8126;
3.4.5	Address NOTAM.	3		Local procedures
3.4.6	Describe procedures for NOTAM distribution.	2		Local procedures
3.4.7	Distribute NOTAM.	3		ICAO Doc 8126;
3.4.8	Store published NOTAM in NOTAM database.	3		Local procedures

	3.5 Publish NOTAM checklist*			
3.5.1	Explain the rules for producing a NOTAM checklist.	2		ICAO Doc 8126; ICAO Annex 15;
3.5.2	Produce a NOTAM checklist.	3	Manual or automatic.	Local procedures;
3.5.3	Address a NOTAM checklist.			Local procedures;
3.5.4	Distribute a NOTAM checklist.			ICAO Doc 8126; Local procedures;
3.5.5	Store published NOTAM checklist in NOTAM database.			Local procedures;

	3.6 Publish Trigger NOTAM*			
3.6.1	Explain the purpose of 'trigger' NOTAM.			
3.6.2	Describe 'trigger' NOTAM procedures relevant to AIRAC Amendment.			ICAO Doc 8126; Local procedures
3.6.3	Describe trigger NOTAM procedures relevant to AIP Supplements.			ICAO Doc 8126; Local procedures
3.6.4	Produce 'trigger' NOTAM.			ICAO Doc 8126
3.6.5	Address 'trigger' NOTAM.			Local procedures
3.6.6	Distribute 'trigger' NOTAM.			Local procedures
3.6.7	Store the published 'trigger' NOTAM checklist in the NOTAM database.			Local procedures

	3.7 Publish SNOWTAM*			
3.7.1	Explain the purpose of 'SNOW TAM'.	2		ICAO Annex 15;
3.7.2	Name the originator(s) of raw data for SNOW TAM.	1		
3.7.3	Describe the methods of obtaining raw data for SNOW TAM.	2		
3.7.4	Describe the methods by which data for SNOW TAM is transmitted to AIS.	2		
3.7.5	Complete SNOW TAM form.	3		
3.7.6	Address SNOW TAM.	3		
3.7.7	Distribute SNOW TAM.	3		
3.7.8	Store the published SNOWTAM in NOTAM database.	3		

	3.8 Publish ASHTAM*			
3.8.1	Explain the purpose of 'ASHTAM'.	2		Local procedures
3.8.2	Name the originator(s) of raw data for ASHTAM.	1		Local procedures
3.8.3	Explain the methods of obtaining raw data for ASHTAM.	2		Local procedures
3.8.4	Describe the methods by which data for ASHTAM is transmitted to AIS.	2		Local procedures
3.8.5	Complete ASHTAM format.	3		ICAO Annex 15; Local procedures
3.8.6	Address ASHTAM.	3		Local procedures
3.8.7	Describe procedures for ASHTAM distribution.	2		Local procedures
3.8.8	Distribute ASHTAM.	3		Local procedures
3.8.9	Store published ASHTAM in NOTAM database.	3		Local procedures

	3.9 Produce PIB*			
3.9.1	Describe the content of an area bulletin.	2	NOTAM, ASHTAM.	ICAO Doc 8126
3.9.2	Describe the content of a route bulletin.	2	NOTAM, ASHTAM.	ICAO Doc 8126
3.9.3	Describe the content of an aerodrome bulletin.	2	NOTAM, SNOW TAM, METAR, TAF.	ICAO Doc 8126
3.9.4	Describe the content of an administrative bulletin.	2		ICAO Doc 8126
3.9.5	Explain the procedure for the preparation of a PIB.	2		ICAO Doc 8126
3.9.6	Access relevant data for PIB production.	3		Local procedures
3.9.7	Retrieve selected data for PIB production.	3		Local procedures
3.9.8	Compile PIB.	3		Local procedures
3.9.9	Transmit PIB to customer.	3		Local procedures

	3.10 Prepare tailored dynamic data*			
3.10.1	Access relevant data for tailored dynamic data production.	3		Local procedures
3.10.2	Retrieve selected data for tailored dynamic data production.	3		Local procedures
3.10.3	Compile tailored dynamic data.	3		Local procedures
3.10.4	Transmit tailored dynamic data to customer.	3		Local procedures

4. ARO / FPL FUNCTIONS

The general objectives are to enable students to:

Receive, verify and process incoming data;

Prepare and conduct an appropriate and complete briefing.

	4.1 Process FPL and FPL associated messages**			
4.1.1	Explain all the items of a flight plan form.	2	Items and their content.	ICAO Doc 4444
4.1.2	State the cruising speeds of the most common types of aircraft.	1	Especially the most common local aircraft.	Local procedures
4.1.3	Decode FPL items.	3		ICAO Doc 4444
4.1.4	Encode FPL items.	3		ICAO Doc 4444
4.1.5	Verify all items of a flight plan.	3		ICAO Doc 4444;
4.1.6	Describe the procedures for addressing a flight plan.	2		ICAO Doc 7910;

4.1.7	Address a flight plan.	3		ICAO Doc 7910;
4.1.8	Apply the flight plan filing time procedures.	3	1hr, 3hr and national regional and local regulations, delays and earlier departures.	ICAO Annex 2; National AIP; ICAO Doc 7030;
4.1.9	Apply flight plan transmission procedures.	3	e.g. AFTN format, local procedures.	ICAO Doc 4444; ICAO Annex 10
4.1.10	List relevant CFMU limitations when filing a flight plan.	1	CIA, ANM, CRAM, AIM, SLOT, etc. RAD and ENV database.	
4.1.11	Describe the categories of ATS messages.	2	ATS or FPL.	ICAO Doc 4444
4.1.12	Differentiate the types of ATS messages and their designator.	2	ATS or FPL.	ICAO Doc 4444
4.1.13	Prepare flight plan associated messages.	3		ICAO Doc 4444
4.1.14	Address FPL associated messages.	3		ICAO Doc 4444
4.1.15	Apply flight plan associated messages transmission procedures.	3	AFTN format, local procedures.	ICAO Doc 4444; ICAO Annex 10
4.1.16	Prepare supplementary messages.	3		ICAO Doc 4444
4.1.17	Address supplementary messages.	3		ICAO Doc 4444
4.1.18	Apply supplementary messages transmission procedures.	3	AFTN format, local procedures.	ICAO Doc 4444; ICAO Annex 10
4.1.19	Describe methods of storage for a flight plan and ATS messages.	2	Manual or electronic.	Local procedures
4.1.20	Store flight plan and ATS messages.	3		Local procedures
4.1.21	Explain the purpose of a repetitive flight plan (RPL).	2		ICAO Doc 4444
4.1.22	Describe all the items contained in a RPL.	2		ICAO Doc 4444
4.1.23	Explain the collection, storage and processing of RPL data.	2	Manual or electronic.	ICAO Doc 4444; ICAO Annex 10;
4.1.24	Explain the implications for a flight plan with a special status.	2	STS/HOSP, Head of State, EXM833, etc.	

4.2 Provide information for flight preparation**				
4.2.1	List the content of pre-flight information.	1	NOTAM, SNOW TAM, ASHTAM, NAT tracks, MET info, charts, ATFM messages, national publications.	
4.2.2	Explain the scope of the available briefing material.	2		
4.2.3	Appreciate the significance of a briefing for the customer.	2		
4.2.4	Locate the required information in the appropriate documentation.	3	AIP, AIC, Charts, etc.	
4.2.5	Retrieve required information from the data base.	3	VFR, IFR, national or international flight, etc.	
4.2.6	Communicate the required information to the customer using the appropriate technique.	3	Compile and print out, face to face, fax, phone, email, etc.	
4.2.7	Provide additional information on request.	3	Update service.	

4.3 Accept post-flight information and transmit it to ATS/AIS**				
4.3.1	Accept post-flight information.	3	Incident/accident reports, landing information and general in-flight reports.	ICAO Annex 15; ICAO Doc 8126
4.3.2	Transmit post-flight information to ATS/AIS.	3		Local procedures

4.4 Support incident investigation (ARO side)**				
4.4.1	Explain the procedures for the handling of an incident report form.	2		ICAO Doc 4444; ICAO Doc 9426; Local procedures; National AIP
4.4.2	Accept incident report forms.	3		Local procedures
4.4.3	Transmit the incident report forms to the appropriate authority.	3		Local procedures
4.4.4	Describe the procedures applicable in support of investigations.	2	Role of ARO in conjunction with other units and or police.	Local procedures
4.4.5	Apply the procedures applicable in support of investigations.	3		Local procedures

4.5 Compile statistical data**				
4.5.1	List the type of statistical data required from ARO.	1		Local procedures

5. COORDINATION

The general objectives are to enable students to:

Identify when co-ordination has to be performed;
Conduct coordination in an appropriate manner.

5.1 General*			
5.1.1	Explain the need for co-ordination.	2	
5.1.2	Explain the methods of coordination.	2	Face to face, phone, fax, email, internet, standardized procedures, language used, records/log sheet, etc.	Local procedures
5.1.3	Use appropriate coordination techniques.	3	Verbal, written etc.	Local procedures
5.1.4	Describe the interaction with other data systems.	2	Data links, EAD, pre-flight database, online applications etc.	Local procedures

5.2 Co-ordinate with data sources*			
5.2.1	Clarify erroneous and/or ambiguous content with the source of the data.	3	SLA's	Local procedures;
5.2.2	Request missing elements.	3	SLA's	Local procedures

5.3 Co-ordinate between AIS functions*			
5.3.1	Describe the principle functions within AIS.	2	AIS functions.	ICAO Doc 8126
5.3.2	Determine when/what to coordinate with other AIS functions.	3	AIS functions at local and adjacent units.	Local procedures

5.4 Co-ordinate with customers**			
5.4.1	List the principle customers of an AIS unit.	1	AOs, private pilots, ATC, handling companies, other AIS units local/foreign etc.	ICAO Doc 8126
5.4.2	Characterize the customers of the AIS unit.	2	e.g. Professional, non-professional, frequent or infrequent user, etc.	
5.4.3	Describe co-ordination procedures with ATS units.	2	TW R, APP, ACC, FIC, SLA's.	Local procedures
5.4.4	Describe co-ordination procedures with other agencies/services.	2	MET, technical services, aircraft operators, CFMU, regulator, SLA's etc.	ICAO Doc 9377; Local procedures;
5.4.5	Communicate the required information to the customer.	3		Local procedures
5.4.6	Clarify the meaning of the information provided, if requested.	3		Local procedures
5.4.7	Provide any additional information if requested.	3		Local procedures

5.5 Human factors aspects in co-ordination**			
5.5.1	State factors affecting the quality of communication.	1		ICAO Doc 9683
5.5.2	Identify communication and thinking patterns.	1		
5.5.3	Explain common behavioral patterns of customers.	2		
5.5.4	Select the appropriate way for dealing with customers.	3		
5.5.5	Apply the rules for concise communication.	3		
5.5.6	Demonstrate correct behavior in a conflict situation.	3		
5.5.7	Demonstrate correct handling of customer complaints.	3		