

MINUTA DE LA CUARTA REUNIÓN DEL GRUPO DE TAREA PARA LA IMPLEMENTACIÓN DE LA GESTIÓN DE LA INFORMACIÓN AERONÁUTICA (AIM/TF/4) DEL GRUPO DE TRABAJO DE NORTEAMÉRICA, CENTROAMÉRICA Y CARIBE (NACC/WG)

En línea, 11 de mayo de 2021

Lista de participantes:

Refiérase al **Apéndice A**.

Orden del Día

Refiérase al **Apéndice B**.

Objetivo:

El objetivo de la reunión fue actualizar el Plan regional de transición de Gestión de la Información Aeronáutica (AIM), iniciando la implementación del Plan Colaborativo AIM para la Región CAR, asuntos del Grupo de Tarea de Instrucción AIM (TRAIN), y asuntos NOTAM, entre otros aspectos relevantes.

Documentación y presentaciones de la OACI

La documentación y las presentaciones se pueden encontrar en el siguiente enlace, que figura en la NI/01:

<https://www.icao.int/NACC/Pages/meetings-2021-aimtf4.aspx>

Introducción

1. El Sr. Julio Siu, Director Regional Adjunto de la Oficina de América del Norte, Centroamérica y el Caribe (NACC) de la Organización de Aviación Civil Internacional (OACI) dio la bienvenida a los participantes, brindó palabras de apertura, e inauguró oficialmente la reunión.
2. La Reunión AIM/TF/04 se realizó con la participación de la Sra. Natasha Leonora-Belefanti (Curazao), Relatora del Grupo de Tarea para la implementación de AIM (AIM/TF). El Sr. Raúl Martínez, Especialista Regional en Gestión de la Información Aeronáutica, de la Oficina Regional NACC de la OACI actuó como Secretario de la Reunión.

Discusión

Cuestión 1 del

Orden del Día: Adopción del Orden del Día Provisional, del Horario y Método de Trabajo

- 1.1 Bajo la NE/01, la Secretaría y la Relatora del AIM/TF invitaron a la Reunión a aprobar el Orden del Día provisional y el horario. La Reunión aprobó el Orden del Día tal como se presenta en la carta de invitación y no hizo cambios al horario. Asimismo, se presentaron los objetivos y expectativas de la Reunión.

Cuestión 2 del

Orden del Día: Revisión y actualización de un nuevo Plan regional AIM actualizado, incluido el Plan colaborativo AIM

2.1 En la P/02, la Secretaría mostró a la Reunión los documentos fuente que han sido considerados para el Plan Regional AIM 2022 – 2024. Estos documentos de la OACI incluyen el *Plan Mundial de Navegación Aérea* 6ª Edición (GANP online), el documento de Mejoras por bloques del sistema de aviación (ASBU), la información de los Elementos Constitutivos Básicos (BBB), los Anexos y los Procedimientos para los servicios de navegación aérea (PANS), principalmente, que cubre aspectos importantes de AIM con base en un enfoque centrado en datos:

- Anexo – Normas y Métodos Recomendados (SARPS) basados en el desempeño
- PANS - disposiciones técnicas y de procedimiento - Introducción del catálogo de datos aeronáuticos
- Elevar ciertos procedimientos de orientación a PANS
- Apoyar la centralización de datos con procesos y procedimientos: introducir conjuntos de datos digitales
- Apoyar la interoperabilidad
- La desviación de PANS se publicará solo en la Publicación de información aeronáutica (AIP) (diferencias)
- Admite transición/migración paso a paso

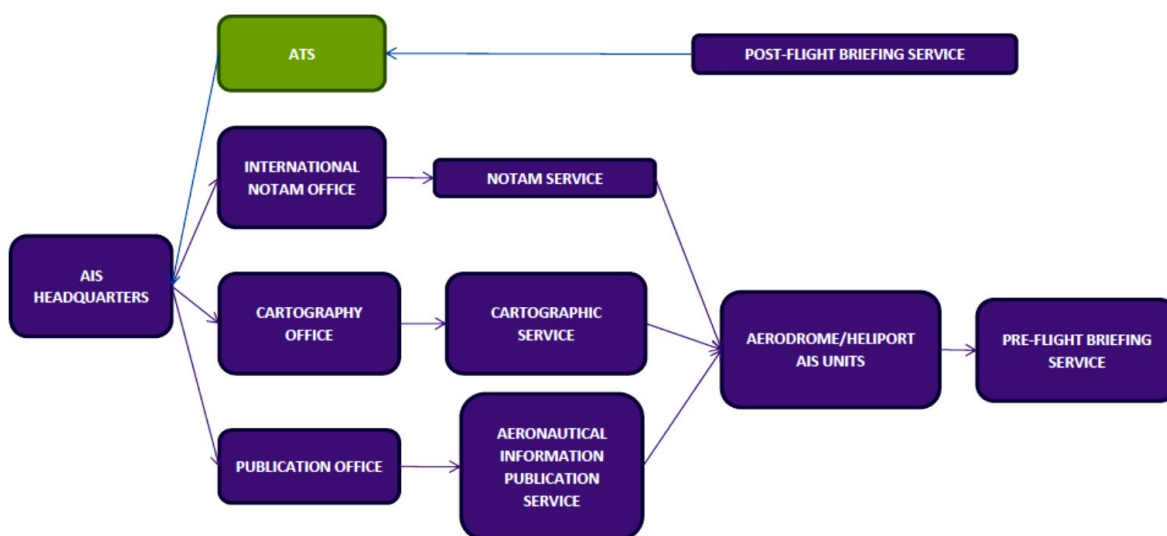
2.2 La Reunión revisó el nuevo Programa de Trabajo del AIM/TF que considera actualmente las disposiciones del GANP 6ta. Ed. y los requisitos de los Indicadores clave de desempeño (KPI) planteados por la seguridad operacional. En este sentido, el TF considera la integración del desarrollo del Plan de colaboración AIM y el sitio web de seguimiento de AIM de la OACI dentro de su Programa de trabajo. La Reunión tomó la siguiente Decisión:

DECISIÓN	
AIM/TF/04/01	INTEGRACIÓN DEL PROGRAMA DE TRABAJO DEL AIM/TF EL PLAN COLABORATIVO DE AIM Y EL SITIO WEB DE SEGUIMIENTO DE AIM DE LA OACI
Qué: Que, el AIM/TF apruebe la integración del Plan Colaborativo AIM y el sitio web de seguimiento AIM de la OACI dentro de su Programa de Trabajo.	Impacto esperado: <input type="checkbox"/> Político / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Económico <input type="checkbox"/> Ambiental <input checked="" type="checkbox"/> Técnico/Operacional
Por qué: Para completar un Plan Regional AIM 2022 – 2024	
Cuándo: Antes de la Reunión AIM/TF/5	Estado: <input checked="" type="checkbox"/> Válida / <input type="checkbox"/> Invalidada / <input type="checkbox"/> Finalizada
Quién: <input checked="" type="checkbox"/> Estados <input type="checkbox"/> OACI <input checked="" type="checkbox"/> Otros:	Organizaciones Internacionales

2.3 La Secretaría enfatizó a la Reunión la importancia de desarrollar el Marco Normativo AIM relacionado con los siguientes conceptos:

- Origen de datos
- Seguro de calidad
- Metadatos e informes de calidad
- Entrega de datos
- Manejo de errores

2.4 Además, se presentaron y explicaron los Módulos y Elementos Básicos del AIM (AIS) relacionados con el GANP y en relación con los BBB para la Planificación Estratégica e implementación:



Cuestión 3 del Orden del Día: Actualización del Plan de trabajo de AIM

3.1 Bajo este ítem de la agenda, la Secretaría presentó el NI 02, con una revisión y actualización del Plan de Trabajo actual de AIM incorporando nuevas actividades a ser entregadas durante el próximo año 2022, incluyendo todas las relacionadas con AIM 2.0.

3.2 La Reunión consideró y acordó los cambios mostrados en el seguimiento de cambios en el documento anterior original del Programa de Trabajo, incluido en el **Apéndice C** de esta Minuta para una mejor referencia.

Cuestión 4 del Orden del Día: Estado de los Estados: Sistema de Gestión de Calidad (QMS), Transición a la AIM, Datos Electrónicos de Terreno y Obstáculos (eTOD) e Implementación de Gestión de Información de todo el Sistema (SWIM) (AIM 2.0)

4.1 Bajo la NE/04, la Reunión discutió y recibió actualizaciones sobre las acciones y tareas de implementación hacia la Gestión de la información de todo el sistema (SWIM), estableciendo metas para 2022 a 2024. También se revisaron los avances de los Estados en la implementación de los PANS AIM (Doc 10066) y la identificación de dificultades para la implementación.

4.2 Esta NE, fue presentada por la Relatora del AIM/TF que comentó importante información, incluyendo gráficos que indican los avances por los Estados en la Región, a lo largo de las tres Fases (21 pasos) dentro de la transición de AIS a AIM, expresados en porcentajes de manera muy objetiva. Esta información sirve como soporte para la implementación regional de AIM con el fin de acelerar y monitorear el desarrollo de las fases de transición.

4.3 La Relatora del AIM/TF elaboró y presentó un archivo de Excel, mediante el cual se requirió que todos los Estados miembros participaran activamente en la actualización de su información sobre el estado de la transición de AIS a AIM, de manera que se represente un reflejo adecuado de cada Estado. La mayoría los miembros del TF obtienen la información requerida y la presentan de manera oportuna y precisa a la Relatora del TF cada año. Los Estados deben presentar y/o actualizar su información anualmente o siempre que se haya implementado un paso.

4.4 Se discutieron el avance en los Pasos de Transición de AIS a AIM y la Implementación de SWIM (AIM 2.0), debido a la falta de retroalimentación de los Estados y la pandemia de COVID-19 que afecta la continuación para muchos Estados, el avance es menor. Los factores que han contribuido han sido la disminución de los movimientos de vuelos y, por tanto, los limitados recursos financieros. La Reunión concluyó que, dado el esfuerzo por mantener el cumplimiento del Anexo 15 - *Servicios de información aeronáutica*, Doc 10066 - PANS-AIM y el Doc 8126 - *Manual de servicios de información aeronáutica* actualizado en cuatro secciones. Es importante que la Oficina Regional NACC de la OACI reconsidere regionalmente (y probablemente también globalmente), las fechas de implementación solicitadas de la actualización del ASBU. La Reunión adoptó el siguiente Proyecto de Conclusión:

PROYECTO DE CONCLUSIÓN	
AIM/TF/04/02	TRANSICIÓN DE AIM A AIM 2.0
<p>Qué:</p> <p>Que, para apoyar la implementación del concepto SWIM y alcanzar una evolución continua hacia AIM 2.0, los Estados/Territorios :</p> <ul style="list-style-type: none"> a) se enfoquen en formatos electrónicos para datos e información; b) se enfoquen en la necesidad de datos de calidad de fuentes autorizadas; c) implementen información aeronáutica en formato digital para intercambio; d) se enfoquen en la necesidad de entornos de colaboración entre las partes interesadas para mejorar la calidad del servicio; y e) informen a la OACI el estado de los incisos a) al d) a más tardar en diciembre de 2024. 	<p>Impacto esperado:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Político / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Económico <input type="checkbox"/> Ambiental <input checked="" type="checkbox"/> Técnico/Operacional
<p>Por qué:</p> <p>Para apoyar la implementación de SWIM</p>	
<p>Cuándo: Diciembre de 2024</p>	<p>Estado: <input checked="" type="checkbox"/> Válida / <input type="checkbox"/> Invalidada / <input type="checkbox"/> Finalizada</p>
<p>Quién: <input checked="" type="checkbox"/> Estados <input checked="" type="checkbox"/> OACI <input type="checkbox"/> Otros:</p>	

Cuestión 5 del

Orden del Día: Planes de contingencia NOTAM para las Regiones NAM/CAR y Tareas relacionadas con la Campaña Global de NOTAM: la eliminación de NOTAM permanentes o lo indicado por el Doc 8126 – Manual para los servicios de información aeronáutica de la OACI

5.1 A través de la NE/05 presentada por la Relatora del AIM/TF, se informó sobre la necesidad de un Plan de Contingencia Regional para asegurar la continuidad de los servicios AIM y/o NOTAM, manteniendo un alto nivel de seguridad, de acuerdo al estado de implementación de los Planes de Contingencia AIM y/o Aviso a los aviadores (NOTAM) en la Región. Además, se alentó a los Estados a firmar Cartas de Acuerdo (LoA) aprobadas entre Estados, Territorios y Organizaciones Internacionales.

5.2 La Reunión AIM/TF acordó desarrollar una especie de catálogo que se actualice periódicamente como el “Catálogo Regional de Planes de Contingencia NOTAM”. Los principales objetivos son que los Estados implementen las siguientes acciones:

- desarrollar planes de contingencia nacionales AIM - NOTAM
- actualizar los planes de contingencia existentes con referencia a desarrollos recientes y asegurar su integridad e interoperabilidad para el intercambio de conjuntos de datos
- coordinar NOTAM de contingencia con Regiones de información de vuelo (FIR) adyacentes para facilitar la funcionalidad de los planes de contingencia
- facilitar la publicación de planes de contingencia para su implementación en caso de interrupción
- iniciar el establecimiento de un equipo interregional de coordinación de contingencias, cuya función será coordinar la continuidad del flujo del tránsito aéreo internacional a nivel regional o interregional en caso de indisponibilidad total o parcial de cualquier porción del espacio aéreo
- Integrar los Planes de contingencia junto con los Planes de contingencia de Gestión de tránsito aéreo (ATM).

5.3 La Relatora del AIM/TF mencionó a los asistentes que los requisitos para la implementación de la Navegación basada en la Performance (PBN) y los sistemas de navegación autónomos introdujeron la necesidad de nuevos requisitos AIM para asegurar la distribución oportuna de información y datos de calidad. Esto se alinea con la intención de reducir o eliminar el posible impacto de los conflictos laborales y desastres naturales en la provisión continua de la ANS, brindando las medidas técnicas y de gestión necesarias para que los procedimientos de coordinación y operación sean adoptados antes, durante y después de cualquier contingencia. fase o etapa

5.4 Se informó el siguiente avance en los Planes de Contingencia AIM/NOTAM para las Regiones NAM/CAR y las tareas relacionadas con la Campaña Global NOTAM:

- El AIM/TF ha creado un grupo de trabajo Ad-hoc del Plan de contingencia de AIM
- Se han realizado varias reuniones por teleconferencia
- Se han creado Plantillas de Planes de Contingencia AIM y NOTAM, con el fin de facilitar a los Estados la implementación de dichos planes. Las Plantillas de Plan se presentan bajo los **Apéndices D y E** de esta minuta (*disponibles únicamente en inglés*).
- Se ha realizado una reunión con el Líder del Proyecto del Plan de Contingencia ATM de la Oficina Regional NACC de la OACI.

5.5 La Reunión recordó que durante reuniones anteriores de AIM/TF se enfatizó la necesidad de contar con planes de contingencia NOTAM desarrollados para apoyar a ATM en las rutas principales en términos de flujo de tránsito aéreo a través de las FIR. Es fundamental que el plan no se limite a las fronteras de los Estados, sino que cruce fronteras con otros Estados siendo, por tanto, interregionales. En este sentido, el Grupo Ad hoc AIM de Estados, Territorios y Organizaciones Internacionales seleccionados facilitó el desarrollo de una plantilla de plan de contingencia NOTAM regional sólida y eficiente.

5.6 Se invitó a la Reunión a firmar un Memorando de Entendimiento (MoU)/LoA para la implementación de los Planes de Contingencia AIM y/o NOTAM Autoridades Estatales, Proveedores de Servicios de Navegación Aérea (ANSP) y Organizaciones Internacionales para abordar las responsabilidades relacionadas con las Normas de Separación que se aplicarán. La NOTAM Acción debe asegurar la adecuada coordinación de los Planes de Contingencia con los usuarios del espacio aéreo civil y militar.

5.7 Además se discutió otra perspectiva es la interacción militar durante varios escenarios de contingencia incluyendo la seguridad, sus roles en salvaguardar la seguridad de los Estados, así como colaborar para asegurar que la seguridad de los sistemas de transporte aéreo internacional no se vea comprometidos, o las amenazas potenciales que afectan la infraestructura, los sistemas y las operaciones de la aviación. Para mejorar la planificación de contingencias, se alentó a los Estados a:

- Implementar las Comunicaciones por enlace de datos controlador-piloto (CPDLC), las Comunicaciones de Datos entre Instalaciones de Servicios de Tránsito Aéreo (AIDC) y el Sistema de tratamiento de mensajes de los servicios de tránsito aéreo (ATS) (AMHS).
- transición completa de AIS a AIM
- involucrarse con las partes interesadas militares
- garantizar la realización adecuada de la evaluación de la seguridad operacional antes de los planes de contingencia
- garantizar la aplicación de redes de seguridad de radar de vigilancia cuando estén disponibles
- colaborar en la implementación del intercambio de datos de vigilancia dentro de las Regiones NAM/CAR
- garantizar una revisión periódica de los planes de contingencia y los MoU
- considerar la inclusión de amenazas a la seguridad cibernética en sus planes de contingencia
- asegurar un flujo de información adecuado durante la contingencia
- publicar sus Planes de Contingencia antes del 31 de diciembre de 2021 para la implementación efectiva de 2 Ciclos de Reglamentación y control de información aeronáutica (AIRAC) después de 2022.

5.8 La P/01 “Seguimiento de Validez de NOTAM” presentada por la Relatora del AIM/TF informó sobre la importancia de los NOTAM con significado operacional directo y podría afectar inmediatamente las operaciones de las aeronaves que inician con Plan de vuelo (FPL) y todas las fases de vuelo. Además, los NOTAM deben proporcionar información que sea:

- Entrega oportuna (considere suficientes días de preaviso para los propósitos operativos de los usuarios)
- Acceso rápido
- Preciso y fácil de entender
- Relevante para el tipo de operación y la ruta que se realiza

5.9 La Relatora desarrolló una herramienta para archivar con el fin de ser revisada diariamente al principio y al final de cada turno, y tan pronto como se publique un NOTAM. Esta herramienta es tanto para el Originador de datos como para la Unidad AIS. La Herramienta de seguimiento de validez de NOTAM proporciona:

- Número NOTAM, título resumido y ubicación
- Fecha de creación/publicación
- Elemento B de la fecha de entrada en vigor
- Fecha de vencimiento del Elemento C
- Tiempo restante para el NOTAM una auto expiración o ser CANCELADO o REEMPLAZADO
- Duración del NOTAM

COMPANY		PUBLISHED NOTAM VALIDITY TRACKING TOOL					
Amount of current valid / published NOTAMs	NOTAM Number A####/YY	NOTAM Title and/or Brief Description (Item E)	Created (Published) date	Effective date (Item B)	Expire date (Item C)	Total time left to renew/cancel or self-expire	Duration of NOTAM in days <i>Must not exceed 90 days</i>

5.10 La Relatora presentó la NE/08 enfatizando la necesidad de Planificación de Contingencias en la Región CAR para asegurar la continuidad de los servicios NOTAM.

5.11 Además se presentó la Campaña Global de Mejora de NOTAM (NOTAM2021), con el objetivo de la reducción global significativa del número de NOTAM antiguos que aún se encuentran en circulación. Las tareas relacionadas con la Campaña mundial NOTAM dentro del AIM/TF buscan desarrollar medios para ayudar a los Estados a minimizar los NOTAM pendientes (perm) y asegurar que los NOTAM se publiquen de conformidad con el Anexo 15, Doc 8126 y PANS-AIM Doc 10066.

Cuestión 6 del

Orden del Día: Requisitos de instrucción AIM 2.0 - Documentación oficial

6.1 En la NE/06, se presentó el plan de capacitación basado en competencias recomendado por AIM/TF para el personal de AIM: personal AIS, NOTAM, Oficina de notificación de los servicios de tránsito aéreo (ARO) y/o FPL, incluido un plan de estudios de instrucción. En varios Estados falta o no existe capacitación en AIM, y no existe un plan o currículo de instrucción estandarizado de la OACI o del Estado

6.2 Por otro lado, el principal objetivo del AIM/TF era finalizar el currículo de formación desarrollado del plan de formación por competencias. Este fue presentado a las autoridades requeridas para su adopción a la implementación regional y global y está pendiente de aprobaciones.

6.3 Se llevaron a cabo varias tareas relacionadas con la Documentación Oficial de Requisitos de Instrucción AIM 2.0. El AIM/TF ha creado e introducido el plan de estudios de formación oficial y estandarizado para la formación básica y la formación especializada guiada del personal de AIM. El desarrollo de un Manual y Currículo Estandarizado de Capacitación del personal de AIM es beneficioso para el personal que ejerce sus funciones. El plan de estudios (**Apéndice F**) se divide en las siguientes secciones de formación:

- **Módulo 1.**
 - Instrucción básica, que sirve como sesión de instrucción básica sobre las funciones del personal de Aviación y AIM, los temas relacionados, en forma de instrucción básica (Apéndice F, Módulo 1), y

• **Módulo 2.**

- Esta sección incluye la sección Instrucción calificada, que es una instrucción especializada e interactiva para el personal de AIM: personal de AIS, ARO y/o FPL, una vez completado el Módulo 1. Esto asegura que las funciones relacionadas AIM (**Apéndice F** Módulo 2a) y ARO/FPL (Apéndice F Módulo 2b) se lleven a cabo correctamente e incluye instrucción en el trabajo también después de completar el curso teórico.

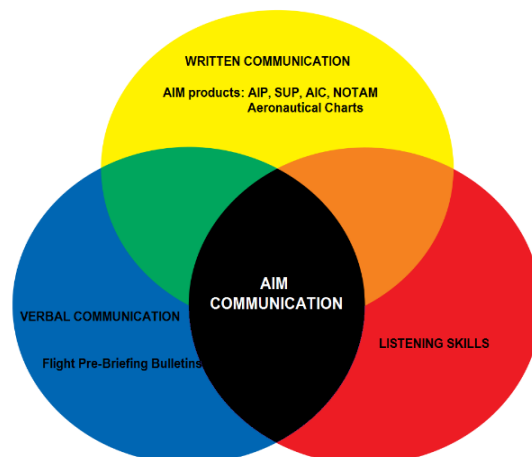


6.4 La Reunión concluyó que una formación estandarizada y del mismo nivel es más de lo necesario debido al método uniforme de funcionamiento dentro del AIM. Aún más, los altos requisitos de los PANS-AIM y el conocimiento y el apoyo esperados por parte del personal de AIM sobre la información entregada/publicada, requieren profesionales capacitados, que sean capaces de interactuar con otro personal de AIM al mismo nivel y comprensión.

6.5 La documentación de referencia se puede encontrar en:

<https://www.icao.int/NACC/Pages/meetings-2021-aimtf4.aspx>

6.6 Con la NI/03, la Relatora del AIM/TF presentó la importancia de que los estándares globales de dominio del idioma inglés (ELP) se incluyan en la escala de calificación de idiomas de la OACI, en el nivel 4 y superior para el personal de AIM, especialmente ahora con todos los requisitos técnicos para los datos. distribución de información operativa y de gestión. El inglés es el idioma más utilizado para las comunicaciones de la aviación internacional, y su componente principal de comunicación es el dominio del idioma. La forma de comunicación que se aborda en los requisitos de competencia lingüística de la OACI, que es este modelo tradicional, que enfatiza la comunicación verbal (oral).



6.7 El Relator dice que, como se indica en el Doc 9835 de la OACI, el dominio del idioma no es simplemente el conocimiento de un conjunto de reglas gramaticales, vocabulario y formas de pronunciar sonidos. Es una interacción compleja de ese conocimiento con una serie de habilidades y destrezas. El nivel operacional 4 de la OACI se considera el nivel mínimo aceptable para garantizar operaciones seguras, pero lo siguiente entra en conflicto con el objetivo del AIM. Es decir, el alcance y el enfoque de la Escala de calificación de competencia lingüística de la OACI son específicos y únicos en varios aspectos importantes, por lo que solo aborda las habilidades del lenguaje hablado (hablar y escuchar) y no aborda las habilidades de lectura y escritura.

Cuestión 7 del**Orden del Día:** Otros asuntos

7.1 No se presentaron otras discusiones bajo esta Cuestión del orden del día.

APPENDIX A – APÉNDICE A



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

LIST OF PARTICIPANTS / LISTA DE PARTICIPANTES

ANTIGUA AND BARBUDA / ANTIGUA Y BARBUDA

1. Luana Isaac

ARUBA

2. Leonel Jarzagaray
3. Linsey Dijkhoff

BAHAMAS

4. rashad penn

BARBADOS

5. Donna Archer
6. Kevon Hunte
7. Denielle Callender

BELIZE / BELICE

8. Ashaida Brackett
9. Gilberto Torres

COSTA RICA

10. Silvia Zúñiga
11. Bernardita Mora Segura
12. Gerardo Aguero

CURAÇAO / CURAZAO

13. Natasha Leonora-Belefanti
14. Jozef Nicolaas
15. Melissa Manuela
16. Renato Anasagasti

DOMINICAN REPUBLIC / REPÚBLICA DOMINICANA

17. Julio Cesar Rodriguez Alcantara

EL SALVADOR

18. Jose Balmaceda

GRENADA

19. Donisha Mitchell
20. Sheldon Thomas
21. Kennisha Stephen

JAMAICA

22. Kevin Miller
23. Sharon Edwards Francis
24. Tameka Williams

MEXICO / MÉXICO

25. Marco Antonio Coria
26. Verónica Vilchis

- 27. Edgar González Flores
- 28. Luis Ibarra
- 29. Aldo Figueroa
- 30. José Gil
- 31. Benjamín Estrella

NICARAGUA

- 32. Tomas Caceres

SAINT LUCIA / SANTA LUCIA

- 33. Ricardo Charles

TRINIDAD AND TOBAGO / TRINIDAD Y TABAGO

- 34. Nirmala Nohar
- 35. Steve Ramgoolam

UNITED STATES / ESTADOS UNIDOS

- 36. Katie Ludwig
- 37. Scott Leis
- 38. John Warner
- 39. Jennifer Ellison

COCESNA

- 40. Jenny Lee
- 41. Jose Morales

IATA

- 42. Jose Fernando Rojas Ocampo
- 43. Marco Vidal

IFAIMA

- 44. Alexis Amézquita
- 45. Fernando Cruz
- 46. Iliana Navarro

IDS AIRNAV

- 47. Luca Vincenzo Palocci
- 48. Marcello Davide Mannino

ICAO / OACI

- 49. Julio Siu
- 50. Raúl Martínez



OACI

APÉNDICE B

Organización de Aviación Civil Internacional
Oficina para Norteamérica, Centroamérica y Caribe

CUARTA REUNIÓN DEL GRUPO DE TAREA PARA LA IMPLEMENTACIÓN DE LA GESTIÓN DE LA INFORMACIÓN AERONÁUTICA (AIM/TF/4) DEL GRUPO DE TRABAJO DE NORTEAMÉRICA, CENTROAMÉRICA Y CARIBE (NACC/WG) (AIM/TF/4)

En línea, 11 de mayo de 2021

ORDEN DEL DÍA

- Cuestión 1 del Orden del Día:** Adopción del Orden del Día, del Horario y Método de Trabajo
- Cuestión 2 del Orden del Día:** Revisión y actualización de un nuevo Plan regional AIM actualizado, incluido el Plan colaborativo AIM
- Cuestión 3 del Orden del Día:** Actualización del Plan de trabajo de AIM
- Cuestión 4 del Orden del Día:** Estado de los Estados: Sistema de Gestión de Calidad (QMS), Transición a la AIM, Datos Electrónicos de Terreno y Obstáculos (eTOD) e Implementación de Gestión de Información de todo el Sistema (SWIM) (AIM 2.0)
- Cuestión 5 del Orden del Día:** Planes de contingencia NOTAM para las Regiones NAM/CAR y Tareas relacionadas con la Campaña Global de NOTAM: la eliminación de NOTAM permanentes o lo indicado por el Doc 8126 – *Manual para los servicios de información aeronáutica* de la OACI
- Cuestión 6 del Orden del Día:** Requisitos de instrucción AIM 2.0 - Documentación oficial
- Cuestión 7 del Orden del Día:** Otros asuntos
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NOTAS ACLARATORIAS

Cuestión 1 del

Orden del Día: Adopción del Orden del Día, del Horario y Método de Trabajo

Bajo esta cuestión del orden del día la Reunión revisará el orden del día y el horario y los adoptará. Se presentarán los objetivos y expectativas generales de la reunión.

Cuestión 2 del

Orden del Día Revisión y actualización de un nuevo Plan regional AIM actualizado, incluido el Plan colaborativo AIM

La Reunión tomará nota respecto al nuevo Plan de Trabajo AIM que considera las disposiciones del Plan Mundial de Navegación Aérea (GANP= 6ª. Ed. y los requerimientos de Indicadores Clave de Rendimiento (KPI) que plantea la seguridad operacional y se revisará también el desarrollo del Plan Colaborativo AIM y el sitio web *AIM Tracking* de la OACI.

Cuestión 3 del

Orden del Día Actualización del Plan de trabajo de AIM

Bajo esta cuestión del orden del día, la Reunión revisará y actualizará el Plan de trabajo AIM actual incorporando actividades a entregar durante la próxima Sexta Reunión del Grupo de Trabajo de Norteamérica, Centroamérica y Caribe (NACC/WG/6) y que se relacionan con el AIM 2.0

Cuestión 4 del

Orden del Día Estado de los Estados: Sistema de Gestión de Calidad (QMS), Transición a la AIM, Datos Electrónicos de Terreno y Obstáculos (eTOD) e Implementación de Gestión de Información de todo el Sistema (SWIM) (AIM 2.0)

Bajo esta cuestión del Orden del Día, la Reunión revisará y proveerá actualización de las acciones y tareas de implementación hacia el SWIM, estableciendo metas para la próxima reunión NACC/WG/06 así como la Decimonovena Reunión del Grupo Regional de Planificación y Ejecución del Caribe y Sudamérica (GREPECAS/19). También se revisará el avance de los Estados en la implementación del PANS AIM (Doc 10066) y la identificación de dificultades para dicha Implementación.

Cuestión 5 del

Orden del Día Planes de contingencia NOTAM para las Regiones NAM/CAR y Tareas relacionadas con la Campaña Global de NOTAM: la eliminación de NOTAM permanentes o lo indicado por el Doc 8126 – *Manual para los servicios de información aeronáutica* de la OACI

Bajo esta cuestión del orden del día, la Reunión trabajará el planteamiento de los planes de contingencia AIM, así como las Tareas relacionadas con la Campaña Global de NOTAM: la eliminación de NOTAM permanentes o lo indicado por el Doc 8126 de la OACI.

Cuestión 6 del

Orden del Día Otros asuntos

Bajo esta cuestión del orden del día se analizará cualquier otro asunto que no pudiera ser abordado dentro de las cuestiones precedentes.

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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/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/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/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/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/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/WG

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Work Programme / Programa de trabajo
AIM TASK FORCE (AIM/TF) / GRUPO DE TAREA AIM

No	Activity Actividad	Objective Objetivo	Responsible Responsable	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

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No	Activity Actividad	Objective Objetivo	Responsible Responsable	Deliverable Entregable	Date Fecha	Status Estado
7	Coordinate activities such as Workshops 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	ICAO AIM/TF OACI AIM/TF	Perform a Seminar or Workshop Realizar Seminario o Taller	2018-2023	Valid Valida
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 Incentivar la adopción de convenios de cooperación entre oficinas NOTAM (NOF) y la actualización de planes de contingencia (por eventos climatológicos y/o volcánicos) en armonización con los planes de contingencia ATM	Develop AIM to support the Air traffic management operational concept, including NOTAM contingency plans Desarrollar AIM para apoyar el Concepto Operacional de Gestión del Tránsito Aéreo, incluyendo los planes de contingencia NOTAM	ICAO AIM/TF OACI AIM/TF	Generate support through reference OR NACC ICAO Generar apoyo mediante referencia de OR NACC OACI	2018	Valid Valida Completed Completada
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 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	Ensure that AIM solutions should be harmonized and integrated at a regional and international level, in preparation for the SWIM implementation Asegurar que las soluciones AIM se armonicen e integren a nivel regional e internacional, en preparación para la implementación del SWIM	ICAO AIM/TF OACI AIM/TF	Make consult through reference OR NACC ICAO Realizar consulta mediante referencia de OR NACC OACI	2020	Valid Valida Completed Completada
12	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	Develop an agreement of high-level management of a nationwide eTOD programme Desarrollar un acuerdo de alto-nivel para gestión de un programa nacional eTOD	ICAO AIM/TF OACI AIM/TF	Agreement format Formato de acuerdo	2018-2023	Valid Valida
3	Examine the means of aeronautical data exchange used in other regions and application in the NACC Region Examinar los medios de intercambio de datos aeronáuticos utilizados en otras regiones y su aplicación en la Región NACC.	Take the Global experiences and best practices on the means of aeronautical data exchange Aprovechar las experiencias y mejores prácticas Mundiales sobre los medios de intercambio de datos aeronáuticos.	ICAO AIM/TF OACI AIM/TF	Report to the Task Force the findings in order to apply on NAM/CAR Regions Informar al Grupo de Trabajo los hallazgos para aplicar en las Regiones NAM/CAR	2024	Valid Valida
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 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.	Keep the AIM implementation context updated according to the changes in the Basic Documents in AIM and the 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	Continuous updating of the AIM TF work program Actualización continua del Programa de trabajo del AIM TF.	2024	Valid Valida

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No	Activity Actividad	Objective Objetivo	Responsible Responsable	Deliverable Entregable	Date Fecha	Status Estado
5	<p>Monitor and review technical and operating developments in the AIM field especially in the area of database management.</p> <p>Monitorear y revisar los desarrollos técnicos y operativos en el campo AIM, especialmente en el área de administración de bases de datos.</p>	<p>Support the implementation of the PANS AIM Data Sets</p> <p>Apoyar la implementación de los Coniuntos de Datos del PANS AIM</p>	<p>ICAO AIM/TF</p> <p>OACI AIM/TF</p>	<p>Report to the Task Force the findings in order to consider on NAM/CAR Regions</p> <p>Informar al Grupo de Trabajo los hallazgos para considerar en las Regiones NAM/CAR</p>	<p>2024</p>	<p>Valid</p> <p>Valida</p>
6	<p>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</p> <p>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</p>	<p>Support the interoperability of information and eAIP Data in the NACC Region and other regions</p> <p>Apoyar la interoperabilidad de la información y Datos eAIP en la Región NACC y otras regiones</p>	<p>ICAO</p> <p>OACI</p>	<p>State Letters, Seminars and guide material</p> <p>Cartas a los Estados, Seminarios y material guía</p>	<p>2024</p>	<p>Valid</p> <p>Valida</p>

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**APPENDIX D / APÉNDICE D
AIM/NOTAM CONTINGENCY PLANS TEMPLATE**

**LETTER OF AGREEMENT BETWEEN
ORGANIZATION**

AND

**ORGANIZATION
FOR**

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



TABLE OF CONTENTS

1. OBJECTIVE.....	3
2. SCOPE.....	3
3. BUSINESS PURPOSE.....	3
4. INTERRUPTION OF SERVICE.....	4
5. TERMINATION.....	4
6. COSTS.....	4
7. CONTACTS.....	4
8. LIABILITY.....	4
9. INTERNET SERVICES.....	4
10. EFFECTIVENESS.....	4
SIGNATURE PAGE.....	5
TABLE 1 – RESPONSIBILITIES AND ACTIONS REQUIRED BY PARTIES.....	6
ACRONYMS.....	10



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**.



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 SVM1 (alternate).	ORGANIZATION A shall route all ORGANIZATION B AMHS traffic. ORGANIZATION A to inform KATL/SVM1 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 SVM1 (alternate).	Route all AMHS traffic to ORGANIZATION B	ORGANIZATION B shall route all ORGANIZATION A AMHS traffic. ORGANIZATION B to inform KATL/SVM1 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/SVM1 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



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.	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	



SCENARIO	ORGANIZATION A RESPONSIBILITY	ORGANIZATION B RESPONSIBILITY	REMARKS
	<p>and access their own system via the Contingency Spatia Dynamic AIM.</p> <p>ORGANIZATION A informs KATL/SVMI that all AMHS traffic destined for ORGANIZATION A should be diverted to ORGANIZATION B.</p>	<p>ORGANIZATION B will accept all AMHS traffic from the AIM system from ORGANIZATION A and route it out to KATL/SVMI</p>	
<p>#8 ORGANIZATION B all equipment failure, not including an ISP Network Failure</p>	<p>ORGANIZATION A AMHS system accepts all AMHS traffic to ORGANIZATION B and from KATL/SVMI</p> <p>ORGANIZATION A will accept all AMHS traffic from the AIM system from ORGANIZATION B and route it out to KATL/SVMI</p>	<p>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.</p> <p>ORGANIZATION B informs KATL that all AMHS traffic destined for ORGANIZATION B should be diverted to ORGANIZATION A.</p>	



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.	<ol style="list-style-type: none">1. <i>Testing of scenarios must be carried out periodically (APR/MAY)</i>2. SAT Phone to carry internet possibility.3. Distribution list pre-set4. 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 NYX or phone or email.)5. ORGANIZATION B to activate switch link to KATL, routing it.6. NOTAM Item E:<ul style="list-style-type: none">• Total communication loss in the PIARCO FIR (AIM and ATM)• Activation of ACC (STATE) Contingency within the PIARCO FIR



SCENARIO	ORGANIZATION A RESPONSIBILITY	ORGANIZATION B RESPONSIBILITY	REMARKS
<p>#10 completely down in Curacao and no services are available on the site at ORGANIZATION B</p>	<p>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.</p> <p>Maintain continues contact with ORGANIZATION A via SAT phone.</p>	<p>Initiate connection to the Replication Monitoring System (RMS) Software, and log on as ORGANIZATION B</p> <p>Send out NOTAM immediately</p> <p>Maintain continues contact with ORGANIZATION B via SAT phone.</p>	<p>1. <i>Testing of scenarios must be carried out periodically (APR/MAY)</i></p> <p>2. SAT Phone to carry internet possibility.</p> <p>3. Distribution list pre-set</p> <p>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 AIS via ORGANIZATION ANYX or phone or email."</p> <p>5. ORGANIZATION A to activate switch link to KATL, routing it.</p> <p>6. NOTAM Item E:</p> <ul style="list-style-type: none"> • Total communication loss in the CURAÇAO FIR (AIM and ATM) • Activation of ACC (STATE) Contingency within the CURAÇAO FIR



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

APPENDIX E / APÉNDICE E



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 **Official** . **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” I 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 **one of the States to the other**, will contain the completed/encoded NOTAM for dissemination.
- 5.7 Should E-mail capabilities become unavailable, then NOTAM requests from **one of the States to the other and visa versa** 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 **stated emails** to facilitate updating of disseminated NOTAM information on the respective AIM website of the corresponding **State/Country**.

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.
Director/Manager AIM (State)

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

Signature:

Signature:

Place.....

Date.....

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

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

Name: Mr. /Mrs.
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 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:	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:	International NOTAM Office (NOF) Tel: 123456789 Hotline: 123456789 Fax: 123456789 E-mail:
Additional contact information	Additional contact information

DRAFT

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

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

#	Subject / Topic		Recommended References	Compliance Reference
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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				
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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				
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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. Wind 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.
4.3.3	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 conditions.
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, Weather 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. e.g. Historical overview, celestial, on-board, radio, satellites, navigation systems.
6.1.2	Be aware of navigation methods used in aviation.		0	

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.
6.2.3	Differentiate between UTC and local mean time.		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 (World Geodetic System -1984).
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.
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).
6.5.7	Be aware of the use of satellite based navigational systems.		0	GNSS, ADS-B and C (Station holding).

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,	

9.4.1	conduct in AIS.	1	quality and safety issues.
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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 INDO W 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, in order to carry out the function accordingly*

#	Subject / Topic	Credit	Recommended References	Compliance Reference
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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, (BIRDAM) 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	<i>Note: Refers to product before distribution.</i>	

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;
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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.	4		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		



APPENDIX A
Curriculum for AIM / ARO / FPL Training

Module 2B: ARO / Flight Plan Officer Training

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

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

#	Subject / Topic	Credit	Recommended References	Compliance Reference
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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 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

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

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		

