



Quinta Reunión del Comité de Revisión de Programas y Proyectos (CRPP/5)
Ciudad de México, México, 16 al 18 de julio de 2019

**Cuestión 5 del
Orden del Día:**

Actividades de navegación aérea a nivel global, intra e interregional
5.4 Proyectos del Programa de Infraestructura de Comunicaciones
Tierra-Tierra / Aire-Tierra (B0 FICE y B0-TBO)

**DESCRIPCIÓN Y SEGUIMIENTO EN LA EJECUCIÓN DE LAS ACTIVIDADES DE LOS
PROYECTOS DEL PROGRAMA DE INFRAESTRUCTURA DE COMUNICACIONES
TIERRA-TIERRA Y TIERRA-AIRE PARA LAS REGIONES CAR Y SAM**

(Presentada por la Secretaría)

RESUMEN EJECUTIVO

Esta nota de estudio presenta información actualizada sobre el estado de implantación de las actividades de los proyectos *Arquitectura de la ATN (D1)* y *Aplicaciones Tierra-Tierra y Aire-Tierra de la ATN (D2)* del programa *Infraestructura de Comunicaciones Tierra-Tierra / Aire-Tierra* para la Región SAM y del Proyecto *Infraestructura ATN en la Región CAR y sus Aplicaciones Tierra-Tierra y Tierra-Aire (D)* para la Región CAR desde la Cuarta Reunión del Comité de Revisión de Programas y Proyectos CRPP/4 hasta la fecha.

Acción:	Las acciones sugeridas se presenten en la Sección 4.
Objetivos Estratégicos:	<ul style="list-style-type: none">• Capacidad y eficiencia de la navegación aérea• Protección del medio ambiente
Referencias:	<ul style="list-style-type: none">• Anexo 10 — Telecomunicaciones Aeronáuticas• Doc 9750 — Plan Global de Navegación Aérea• Informes de las Reuniones del Comité de Coordinación de Programas y Proyectos (CRPP)• Informe de la Décimo Octava Reunión del Grupo Ejecutivo de Planeamiento e Implantación de la Región CAR/SAM (GREPECAS/18), Punta Cana, República Dominicana, abril de 2018.• Informe de la Vigésima Tercera Reunión del Grupo de Implantación de la Región SAM (SAM/IG/23), Lima, Perú, mayo de 2019

1. Introducción

1.1 Desde la última Reunión del Comité de Revisión de Programas y Proyectos (CRPP/4) las Regiones CAR y SAM han desarrollado varias implantaciones específicas de cada región para cumplir con los proyectos del GREPECAS. El objetivo de esta nota de estudio es proporcionar una visión general de los avances en cada Región.

1.2 Las actividades interregionales conjuntas CNS de las Regiones CAR y SAM son tratadas en la Nota de Estudio 7.

2. Análisis

2.1 A continuación, se describen los avances de los proyectos del programa D desde la Reunión CRPP/4 en las Regiones CAR y SAM hasta la fecha.

REGIÓN CAR

2.2 La información de la región CAR se presenta bajo la Presentación No 2, del punto de agenda 3.3 de esta reunión.

REGIÓN SAM

Programa D SAM Infraestructura de Comunicaciones Tierra-Tierra / Aire-Tierra

2.3 El programa de Infraestructura de Comunicaciones Tierra-Tierra / Aire-Tierra de la Región SAM consta desde la reestructuración de la organización del GREPECAS (Decisión 16/45) del proyecto D1 Arquitectura de la ATN en la Región SAM y el proyecto D2 Aplicaciones tierra – tierra y aire – tierra de la ATN SAM.

2.4 A continuación, se describen las principales actividades realizadas por estos proyectos desde la Reunión CRPP/4, en la cual se realizó el último seguimiento de los programas y proyectos del GREPECAS hasta la fecha.

Proyecto D1 Arquitectura de la ATN en la Región SAM

2.5 En el marco de este proyecto, la Red Digital de la Región SAM está completamente implantada y funcionando, proporcionando a los Estados una plataforma digital de comunicación para apoyo de los servicios de navegación aérea. Como mejoría a la infraestructura de comunicación implantada, durante la última Reunión del Comité de Coordinación del Proyecto RLA/03/901 (REDDIG), fue aprobado un presupuesto para la compra de equipos de firewall para todos los nodos de la red, con entrenamiento incluido. Estimase que el proceso de adquisición, entrenamiento y implantación de los equipos de firewall esté concluido en el primer semestre de 2020.

2.6 La Oficina Regional Sudamericana de OACI está iniciando coordinaciones con otras regiones (NAM, EUR y PAC), con el objetivo de establecer interconexiones entre las redes IP regionales. En este sentido, hasta el desarrollo de la red MEVA Fase 4, FAA ya manifestó la intención de conectarse a la red terrestre (MPLS) de la Región SAM (REDDIG), contratando directamente con el proveedor de telecomunicaciones CenturyLink el acceso a la red. La interconexión con las redes PENS (Europa) y CRV (PAC) posiblemente se dará a través de acuerdos de interconexión entre los proveedores de telecomunicaciones.

Proyecto D2 Aplicaciones Tierra – Tierra y Aire – Tierra de la ATN SAM

2.7 Las actividades más significativas de este proyecto son la implantación operacional del AMHS y del AIDC. Asimismo, como apoyo a la automatización, la mitigación de los errores de los planes de vuelo es, también, una actividad de relevancia para los Estados. Otros asuntos que contribuyen para la automatización de los sistemas de navegación aérea y están siendo tratados por los Estados son el intercambio de mensajes en los nuevos formatos basados en XML/GML y la implantación ADS-B.

Implantación AMHS

2.8 En relación a la interconexión AMHS un progreso considerable fue alcanzado. Desde la CRPP/4, con establecimiento de nuevas interconexiones en los años de 2018 y 2019. Todos los Centros COM de la Región implantaron sus sistemas AMHS y ya empezaron las pruebas con los centros adyacentes. Actualmente, 18 interconexiones regionales fueron establecidas, restan solamente 10 circuitos AFTN operativos que deben ser reemplazados por una interconexión AMHS (P1):

SAEZ – SCSC	SAEZ – SLLP	SAEZ – SUMU	SBBR – SLLP
SBBR – SOCA	SBBR – SUMU	SEQU – SKBO	SKBO – MPPC
SOCA – SVCA	SVCA – SYCJ		

2.9 Además de las interconexiones regionales, 2 interconexiones AMHS interregionales fueron establecidas:

SBBR (Brasilia) – LEEE (Madrid); y SBBR – SITA

2.10 Para fines de julio de 2019, deberán estar operacionales las siguientes interconexiones AMHS:

SBBR (Brasilia) – KATL (Atlanta); y SAEZ (Ezeiza) – SITA

2.11 Coordinaciones están siendo realizadas para establecer las interconexiones AMHS entre **Atlanta – Lima, Atlanta – Caracas y Brasilia – Dakar.**

2.12 En el **Apéndice A** de esta nota de estudio se encuentra un diagrama con todas las interconexiones AMHS (azul) ya establecidas y los circuitos AFTN (verde), aún remanentes.

Implementación AIDC

2.13 Con respecto a la implementación AIDC, todos los Estados tendrán, a partir de 2019, sus centros automatizados instalados. Actualmente, se han establecido 12 comunicaciones AIDC entre centros automatizados de la región SAM: 10 entre centros nacionales y 2 entre centros de diferentes Estados. El 16 de Agosto de 2018, las interconexiones AIDC entre **Iquique ACC – Lima ACC y Guayaquil ACC – Lima ACC** pasaron de la fase preoperacional a la fase operacional.

2.14 Asimismo, los Estados fueron exhortados a dar prioridad a las comunicaciones en fase operacional entre centros nacionales e internacionales. El **Apéndice B** a esta Nota de Estudio contiene una tabla con comunicaciones AIDC que se establecerán en la región SAM. Las señaladas en amarillo deberán tener prioridad en 2019.

Mitigación de los errores y la duplicidad/multiplicidad de planes de vuelo en la Región SAM

2.15 En la última Reunión SAM/IG/23 (Lima, 20 al 24 de mayo de 2019), se trató de las principales iniciativas adoptadas para mitigar los errores de planes de vuelo, que fueron: la centralización del recibimiento del plan de vuelo, con tratamiento manual o automatizado de los errores existentes; el establecimiento de acuerdos con los operadores (aerolíneas) para que presenten directamente sus planes de vuelos, con el fin de evitar duplicidad; y, la implementación de mensajes de feedback a los originadores de planes de vuelo, a través de mensajes ACK y REJ.

2.16 Existe una preocupación con respecto a la falta de un estándar en el uso de los mensajes ACK y REJ, lo cual podría devenir en problemas de incompatibilidad a futuro, si cada Estado utiliza un formato distinto. Por este motivo, los Estados SAM entienden, que se debe promover la estandarización de la sintaxis de los mensajes ACK y REJ.

2.17 En este sentido, durante la Reunión SAM/IG/23, fue formulada la Conclusión SAM/IG/23-02:

CONCLUSIÓN SAM/IG/23-02 Estandarización de la sintaxis y formato de los mensajes ACK y REJ para FPL	
<p>Que: Los Estados a través de sus Puntos Focales AIM y CNS conformen un sub-grupo de trabajo dentro del GT INTEROP para:</p> <p>a). Estudiar los formatos existentes de mensajes ACK y REJ de FPL utilizados por los Estados que los tienen implementados, evaluando las ventajas y desventajas de cada uno, y la compatibilidad con los sistemas de la parte usuaria (aerolíneas).</p> <p>b). Proponer un estándar a nivel regional e interregional para establecer un formato único y óptimo de mensajes ACK y REJ para los FPL.</p>	<p>Impacto esperado:</p> <p><input type="checkbox"/> Político / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Económico</p> <p><input type="checkbox"/> Ambiental</p> <p><input checked="" type="checkbox"/> Técnico/Operacional</p>
<p>Por qué: Para promover la estandarización de la sintaxis de los mensajes ACK y REJ, con el objeto de prevenir incompatibilidad a futuro.</p>	
<p>Cuándo: De inmediato</p>	<p>Estatus: Adoptada por SAM/IG/23</p>
<p>Quién: <input checked="" type="checkbox"/> Coordinadores <input checked="" type="checkbox"/> Estados <input checked="" type="checkbox"/> Secretaría OACI <input type="checkbox"/> OACI HQ <input checked="" type="checkbox"/> Otros: Usuarios/Industria</p>	

Implantación del intercambio de mensajes OPMET en formato IWXXM

2.18 Durante la Reunión SAM/IG/23, fue formulada una conclusión sobre la adecuación de los terminales AMHS de usuarios de meteorología para poder transmitir/recibir mensajes operacionales de meteorología en el formato IWXXM (XML/GML).

CONCLUSION SAM/IG/23-03 Adecuación de las terminales AMHS de los usuarios de Meteorología Aeronáutica	
<p>Que los Estados: Considerando la norma de la implementación del intercambio de los mensajes OPMET en formato IWXXM GML para el 5 de noviembre de 2020, deberán:</p> <p>a). adecuar las terminales AMHS de los usuarios de meteorología aeronáutica para poder transmitir y recibir mensajes OPMET en formato IWXXM GML</p> <p>b). implementar las interconexiones de AMHS necesarias para facilitar la transmisión y recepción de los mensajes OPMET en formato IWXXM GML</p> <p>c). Los Estados, en condiciones de hacerlo, deberán realizar pruebas de intercambio de mensajes OPMET en formato IWXXM GML</p>	<p>Impacto esperado:</p> <p><input type="checkbox"/> Político / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Económico</p> <p><input type="checkbox"/> Ambiental</p> <p><input checked="" type="checkbox"/> Técnico/Operational</p>
Por qué: Para cumplir con las disposiciones de la Enmienda 78 al Anexo 3 de la OACI	
Cuándo: De inmediato	Estatus: Adoptada por SAM/IG/23
Quién: <input type="checkbox"/> Coordinadores <input checked="" type="checkbox"/> Estados <input type="checkbox"/> Secretaría OACI <input type="checkbox"/> OACI HQ <input type="checkbox"/> Otros: Usuarios/Industria	

2.19 Asimismo, la Reunión fue informada que el Banco Regional OPMET de Brasilia ya está adaptado para recibir/transmitir mensajes OPMET en el formato IWXXM y que Venezuela ha desarrollado un conversor (software) de mensajes en el formato tradicional (TAC) para el formato IWXXM, generando un archivo con extensión XML, que puede seguir como adjunto a un mensaje AMHS. A partir de julio de 2019, Venezuela realizará pruebas con el Banco Regional OPMET de Brasilia.

Implantación del ADS-B en la Región SAM

INICIATIVAS DE IMPLANTACIÓN DE ADS-B TERRESTRE

2.20 Varios Estados de la Región SAM (Argentina, Brasil, Colombia, Guyana, Guyana Francesa, Panamá, Paraguay y Perú) están implementando estaciones ADS-B terrestres o haciendo pruebas de intercambio de informaciones de vigilancia ADS-B a través de la REDDIG.

INICIATIVAS DE IMPLANTACIÓN DE ADS-B SATELITAL

2.21 Después de la realización del Estudio sobre la conveniencia y factibilidad del ADS-B Satelital en una implantación regional, disponible en los enlaces abajo, los Estados de la Región SAM aguardan las pruebas que serán realizadas por Brasil:

1) Versión en Español:

https://www.dropbox.com/s/bz0aqwp5b1xw4rw/SAM%20Estudio%20sobre%20ADS_B%20Sat%2010%20Enero%202019.pdf?dl=0

2) Versión en Inglés:

https://www.dropbox.com/s/3g9smip32z0avnu/SAM%20ADS_B%20Sat%20Study%2010%20Jan%202019%20.pdf?dl=0 SAM/IG/23-NE/18

2.22 Brasil ha firmado un acuerdo de cooperación técnica y operacional con la empresa AIREON para la recolección de datos de vigilancia de las aeronaves que utilizan el espacio aéreo bajo responsabilidad de DECEA, con la finalidad de tomar una decisión respecto a la adopción del servicio de ADS-B Satelital.

2.23 La evaluación del rendimiento técnico y operacional de la vigilancia ADS-B Satelital basada en la solución de AIREON aplicada al espacio aéreo del DECEA consistirá en dos fases:

FASE - 1 - Rastreo de aeronaves específicas

2.24 AIREON proveerá el rastreo de aeronaves durante el período de prueba planificado en las áreas de interés del DECEA, con el fin de probar las capacidades del ADS-B satelital.

FASE - 2 - Rastreo en tiempo real

2.25 Consiste en recopilar y enviar datos en tiempo real a través de un servidor de red privada virtual ("VPN") conectado a Internet, de aeronaves equipadas con el ADS-B y volando en áreas de prueba previas -seleccionadas por el DECEA. Estas pruebas tendrán como objetivo ampliar los análisis a partir de la Fase 1 para todas las FIR bajo la jurisdicción del DECEA y continuar las pruebas de los servicios ADS-B Satelital.

2.26 Chile también está en proceso de firmar un Memorando de Entendimiento con la empresa AIREON, para realizar pruebas de ADS-B Satelital.

2.27 Los Estados de la Región SAM fueron invitados a indicar participantes para el Subgrupo CNS del GT Interop a ser activado, para tratar los temas de interoperabilidad relacionados al intercambio de la información de vigilancia ADS-B y el potencial empleo del Servicio ADS-B Satelital en una implantación regional, utilizando la REDDIG para distribuir la información de vigilancia proporcionada por la empresa AIREON.

3. Otros asuntos

Reestructuración y formalización del Grupo SAT

3.1 Durante la última reunión del Grupo para el mejoramiento continuo de los Servicios de Tránsito Aéreo sobre el Atlántico del Sur (SAT/24), realizada en Luanda, Angola, del 3 al 7 de junio de 2019, la Secretaría presentó una Nota de Estudio con una propuesta de reestructuración del Grupo SAT y analizó el Manual de procedimientos del Grupo SAT, presentado en el **Apéndice C** (únicamente en inglés) a esta Nota de Estudio.

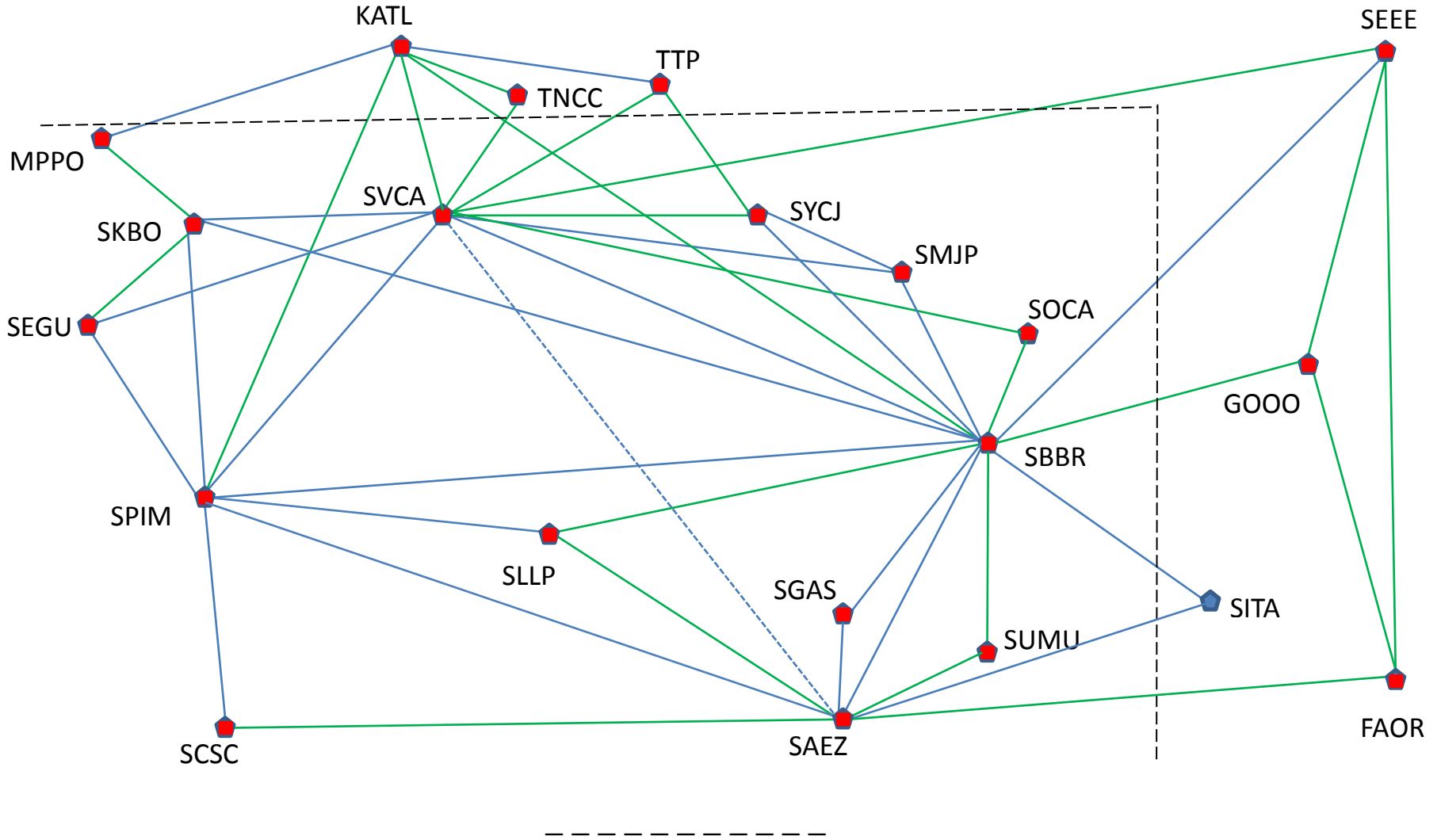
3.2 Las sugerencias y comentarios realizados durante la Reunión SAT/24 serán revisados por el PCI (Programa de Coordinación e Implementación), antes de su envío al GREPECAS para aprobación y de informar a ANC a través de ANB. La próxima reunión del Grupo SAT está programada para realizarse en Trinidad y Tabago el próximo año (2020).

4. Acciones sugeridas

4.1 Se invita a la Reunión a:

- a) tomar nota de la información presentada en esta nota de estudio y apéndices;
 - b) analizar las actividades interregionales entre las Regiones CAR y SAM; presentes en la sección 2 de esta nota de estudio; y
 - c) analizar cualquier otro asunto relacionada al respecto que la Reunión considere necesario.
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Interconexiones AMHS



COMUNICACIÓN AIDC – REGIÓN SAM

Num.	Centro A / Centre A	Centro B / Centre B	Operativa en / Operational in	Observaciones / Notes
1	Córdoba ACC INDRA AIRCON 2100 (2007)	Iquique ACC INDRA AIRCON 2100		Pruebas positivas (marzo de 2016)/Positive tests (March 2016)
2	Córdoba ACC INDRA AIRCON 2100 (2007)	La Paz ACC Thales TopSky		Previsión para 2020-2021/Estimation for 2020-2021
3	Córdoba ACC INDRA AIRCON 2100 (2007)	Ezeiza ACC INDRA AIRCON 2100 (2007)		Pre-operacional (Dic 2015)/Pre-operational (Dec 2015)
4	Córdoba ACC INDRA AIRCON 2100 (2007)	Mendoza ACC INDRA AIRCON 2100 (2016)		Pre-operacional (Dic 2018)/Pre-operational (Dec 2018)
5	Córdoba ACC INDRA AIRCON 2100 (2007)	Resistencia ACC INDRA AIRCON 2100 (2016)		Pre-operacional (Dic 2018)/Pre-operational (Dec 2018)
6	Resistencia ACC INDRA AIRCON 2100 (2016)	Asuncion ACC ATECH SAGITARIO (2019)		Previsión para 2020/Estimation for 2020
7	Resistencia ACC INDRA AIRCON 2100 (2016)	Curitiba ACC ATECH SAGITARIO		Previsión para 2020/Estimation for 2020
8	Resistencia ACC INDRA AIRCON 2100 (2016)	Ezeiza ACC INDRA AIRCON 2100 (2007)		Pre-operacional (Dic 2018)/Pre-operational (Dec 2018)
9	Resistencia ACC INDRA AIRCON 2100 (2016)	Montevideo ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
10	Ezeiza ACC INDRA AIRCON 2100 (2007)	Comodoro Rivadavia ACC INDRA AIRCON 2100 (2016)		Pre-operacional (Dic 2018)/Pre-operational (Dec 2018)
11	Ezeiza ACC INDRA AIRCON 2100 (2007)	Mendoza ACC INDRA AIRCON 2100 (2016)		Pre-operacional (Dic 2018)/Pre-operational (Dec 2018)
12	Ezeiza ACC INDRA AIRCON 2100 (2007)	Puerto Montt ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
13	Ezeiza ACC INDRA AIRCON 2100 (2007)	Johannesburg ACC		Previsión para 2020/Estimation for 2020
14	Ezeiza ACC INDRA AIRCON 2100 (2007)	Montevideo ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
15	Mendoza ACC INDRA AIRCON 2100 (2016)	Santiago ACC Thales TopSky		Previsión para 2019/Estimation for 2019
16	Comodoro Rivadavia ACC INDRA AIRCON 2100 (2016)	Punta Arenas ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
17	Comodoro Rivadavia ACC INDRA AIRCON 2100 (2016)	Puerto Montt ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
18	La Paz ACC Thales TopSky	Amazónico ACC ATECH SAGITARIO		Previsión para 2020-2021/Estimation for 2020-2021
19	La Paz ACC	Asuncion ACC		Previsión para 2020-2021/Estimation for 2020-2021

Num.	Centro A / Centre A	Centro B / Centre B	Operativa en / Operational in	Observaciones / Notes
	Thales TopSky	ATECH SAGITARIO (2019)		
20	La Paz ACC Thales TopSky	Curitiba ACC ATECH SAGITARIO		Previsión para 2020-2021/Estimation for 2020-2021
21	La Paz ACC Thales TopSky	Lima ACC INDRA AIRCON 2100 (2016)		Previsión para 2020-2021/Estimation for 2020-2021
22	La Paz ACC Thales TopSky	Iquique ACC INDRA AIRCON 2100		Previsión para 2020-2021/Estimation for 2020-2021
23	Amazónico ACC ATECH SAGITARIO	Brasilia ACC ATECH SAGITARIO	2017	
24	Amazónico ACC ATECH SAGITARIO	Bogotá ACC INDRA AIRCON 2100		Previsión para 2020/Estimation for 2020
25	Amazónico ACC ATECH SAGITARIO	Cayenne ACC ADACEL		Previsión para 2020/Estimation for 2020
26	Amazónico ACC ATECH SAGITARIO	Curitiba ACC ATECH SAGITARIO	2017	
27	Amazónico ACC ATECH SAGITARIO	Georgetown ACC INTELCAN		Previsión para 2020/Estimation for 2020
28	Amazónico ACC ATECH SAGITARIO	Lima ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
29	Amazónico ACC ATECH SAGITARIO	Maiquetia ACC ATECH SAGITARIO (2019)		Previsión para 2019/Estimation for 2019
30	Amazónico ACC ATECH SAGITARIO	Paramaribo ACC INTELCAN		Previsión para 2020/Estimation for 2020
31	Amazónico ACC ATECH SAGITARIO	Recife ACC ATECH SAGITARIO	2016	
32	Amazónico ACC ATECH SAGITARIO	Atlántico ACC ATECH SAGITARIO (2017)	2018	
33	Atlántico ACC ATECH SAGITARIO (2017)	Curitiba ACC ATECH SAGITARIO	2018	
34	Atlántico ACC ATECH SAGITARIO (2017)	Dakar ACC		Previsión para 2020/Estimation for 2020
35	Atlántico ACC ATECH SAGITARIO (2017)	Johannesburg ACC		Previsión para 2020/Estimation for 2020
36	Atlántico ACC ATECH SAGITARIO (2017)	Luanda ACC		Previsión para 2020/Estimation for 2020
37	Atlántico ACC ATECH SAGITARIO (2017)	Montevideo ACC INDRA AIRCON 2100		Previsión para 2020/Estimation for 2020
38	Atlántico ACC ATECH SAGITARIO (2017)	Recife ACC ATECH SAGITARIO	2018	
39	Atlántico ACC ATECH SAGITARIO (2017)	Cayenne ACC ADACEL		Previsión para 2020/Estimation for 2020
40	Brasilia ACC ATECH SAGITARIO	Curitiba ACC ATECH SAGITARIO	2016	

Num.	Centro A / Centre A	Centro B / Centre B	Operativa en / Operational in	Observaciones / Notes
41	Brasilia ACC ATECH SAGITARIO	Recife ACC ATECH SAGITARIO	2016	
42	Curitiba ACC ATECH SAGITARIO	Asuncion ACC ATECH SAGITARIO (2019)		Previsión para 2019/Estimation for 2019
43	Curitiba ACC ATECH SAGITARIO	Montevideo ACC INDRA AIRCON 2100		Previsión para 2020/Estimation for 2020
44	Curitiba ACC ATECH SAGITARIO	Recife ACC ATECH SAGITARIO	2016	
45	Santiago ACC Thales TopSky	Iquique ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
46	Santiago ACC Thales TopSky	Lima ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
47	Santiago ACC Thales TopSky	Puerto Montt ACC INDRA AIRCON 2100		Previsión para 2019/Estimation for 2019
48	Iquique ACC INDRA AIRCON 2100	Lima ACC INDRA AIRCON 2100	2018	
49	Puerto Montt ACC INDRA AIRCON 2100	Punta Arenas ACC INDRA AIRCON 2100	2017	
50	Bogotá ACC INDRA AIRCON 2100	CENAMER		Previsión para 2019/Estimation for 2019
51	Bogotá ACC INDRA AIRCON 2100	Guayaquil ACC INDRA AIRCON 2100		Pre-operacional desde 2015/Pre-operational since 2015
52	Bogotá ACC INDRA AIRCON 2100	Lima ACC INDRA AIRCON 2100		Pre-operacional desde 2015/Pre-operational since 2015
53	Bogotá ACC INDRA AIRCON 2100	Maiquetia ACC ATECH SAGITARIO (2019)		Previsión para 2019-2020/Estimation for 2019-2020
54	Bogotá ACC INDRA AIRCON 2100	Panamá ACC Thales TopSky		Previsión para 2019/Estimation for 2019
55	Bogotá ACC INDRA AIRCON 2100	Barranquilla ACC INDRA AIRCON 2100		Pre-operacional desde 2016/Pre-operational since 2016
56	Barranquilla ACC INDRA AIRCON 2100	Maiquetia ACC ATECH SAGITARIO (2019)		Previsión para 2019-2020/Estimation for 2019-2020
57	Barranquilla ACC INDRA AIRCON 2100	Panamá ACC Thales TopSky		Previsión para 2019/Estimation for 2019
58	Barranquilla ACC INDRA AIRCON 2100	Kingston ACC		
59	Barranquilla ACC INDRA AIRCON 2100	Curacao ACC		
60	Rio Negro APP INDRA AIRCON 2100	Panamá ACC Thales TopSky		Previsión para 2019/Estimation for 2019
61	Cali APP INDRA AIRCON 2100	Panamá ACC Thales TopSky		Previsión para 2019/Estimation for 2019
62	Guayaquil ACC	Lima ACC	2018	

Num.	Centro A / Centre A	Centro B / Centre B	Operativa en / Operational in	Observaciones / Notes
	INDRA AIRCON 2100	INDRA AIRCON 2100		
63	Guayaquil ACC INDRA AIRCON 2100	CENAMER		Situación de la Casilla 18 en el mensaje ABI/Field 18 of ABI message
64	Cayenne ACC ADACEL	Paramaribo ACC INTELCAN		Previsión para 2019-2020/Estimation for 2019-2020
65	Cayenne ACC ADACEL	Piarco ACC		
66	Cayenne ACC ADACEL	Dakar ACC		Previsión para 2019-2020/Estimation for 2019-2020
67	Georgetown ACC INTELCAN	Piarco ACC		
68	Georgetown ACC INTELCAN	Maiquetia ACC ATECH SAGITARIO (2019)		Previsión para 2019-2020/Estimation for 2019-2020
69	Georgetown ACC INTELCAN	Paramaribo ACC INTELCAN		Previsión para 2019-2020/Estimation for 2019-2020
70	Panamá ACC Thales TopSky	CENAMER		Previsión para 2019/Estimation for 2019
71	Panamá ACC Thales TopSky	Kingston ACC		
72	Paramaribo ACC INTELCAN	Piarco ACC		
73	Montevideo ACC INDRA AIRCON 2100	Johannesburg ACC		Previsión para 2019-2020/Estimation for 2019-2020
74	Maiquetia ACC ATECH SAGITARIO (2019)	Piarco ACC		
75	Maiquetia ACC ATECH SAGITARIO (2019)	Curacao ACC		
76	Maiquetia ACC ATECH SAGITARIO (2019)	San Juan ACC		

INTERNATIONAL CIVIL AVIATION ORGANIZATION



GROUP FOR THE CONTINUED IMPROVEMENT OF AIR TRAFFIC SERVICE OVER THE SOUTH ATLANTIC (SAT)

PROCEDURAL HANDBOOK

Edition - 2019

SAT PROCEDURAL HANDBOOK - GENERAL

RECORD OF AMENDMENTS

Amendment	Date	Part	Part and Page No.	Entered by
V ₀	28.05.2019	All	All	F.X Salambanga
V.1	10.06.2019	IV	IV A and Pages 17-18	F.X Salambanga
			IV B and Pages 19-20	

SAT PROCEDURAL HANDBOOK - GENERAL

FOREWORD

1. Background of the SAT Group and its auxiliary bodies

1.1 The Limited Africa/Indian Ocean (COM/MET/RAC) Regional Air Navigation Meeting (LIM/AFI, Lomé, Togo 12-27 April 1988), under its Recommendation 3/13- *Amendment of the AFI and SAM Regional Supplementary Procedures*-endorsed a proposal for amendment of the AFI and SAM regional Supplementary Procedures (Doc 7034/4 Part I-*Rules of the Air, Air Traffic Services and Search and Rescue*) to reduce the minimum of separation from 20 to 15 minutes using the Mach number technique in Canarias, Dakar Oceanic, Recife and Sal Oceanic FIRs.

1.2 Accordingly, Conclusion 3/14-*SAT Co-ordination Meeting*-was framed to call for the holding, under the auspices of ICAO, of co-ordination meetings of concerned States, international organization, and representatives from Administrations of Communication Service Providers in order to ensure a smooth transition to the application of reduced separation using the Mach number technique.

1.3 Furthermore, LIM/AFI formulated Conclusion 3/15-*Continued improvement of Air Traffic Service over the South Atlantic* that reads as follow:
That:

When necessary, informal meetings be convened under the auspices of ICAO with the States and international organizations concerned to examine any possible improvement of air traffic service over the south Atlantic.

1.4 The Seventh Africa/Indian Ocean Regional Air Navigation (RAN) Meeting (AFI RAN/7, Abuja, Nigeria, 12-23 Mai 1997) through its Recommendation 5/11- *Improvement of Air Traffic Service over the South Atlantic* recommended:

That:

a) In order to ensure a continue development of air navigation system in the South Atlantic parties of the AFI and SAM Regions, the concerned States and interested international organization should meet under the auspices of ICAO at least once a year to:

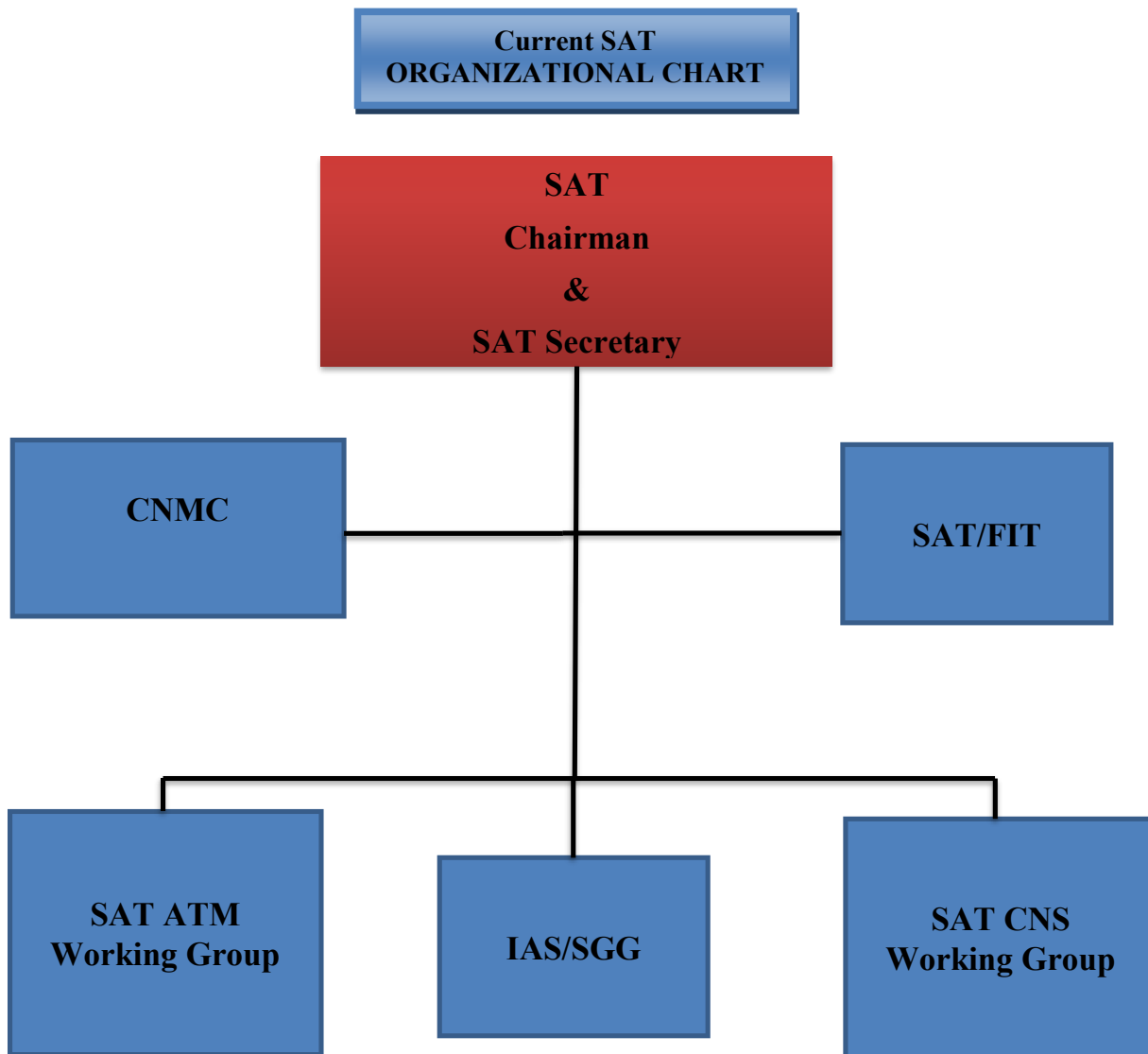
- 1) study, monitor and asses the air navigation system in light of the evolution of traffic characteristics and technology;
- 2) coordinate the implementation of improvements in the air navigation system, including new CNS/ATM systems;
- 3) develop as required, proposals for amendment of air navigation plan and regional supplementary procedures

b) The AFI –Indian Ocean Planning and Implementation Regional Group(APIRG) and all user states should be kept informed of new developments.

1.4 The SAT Group is currently organized under its two ATM and CNS Working Groups and receives reports from the following contributory bodies:

1. The SAT FANS/1 Interoperability Team (SAT/FIT) initiated to coordinate interoperability issues at the beginning of the implementation of ADS-C/CPDLC;

2. The CAFSAT Network Management Committee (CAFSAT) established to monitor the performance of the VSAT network by assessing its operational statistics and coordinate its modernization and;
3. The Study Group on the improvement of Airspace structure in the EUR/SAM Corridor (IAS/SG) established to develop a short, mid, and long term strategy for the implementation of a new airspace structure in the EUR/SAM Corridor with the end to improve the capacity and efficiency of the operations and to meet users' needs.

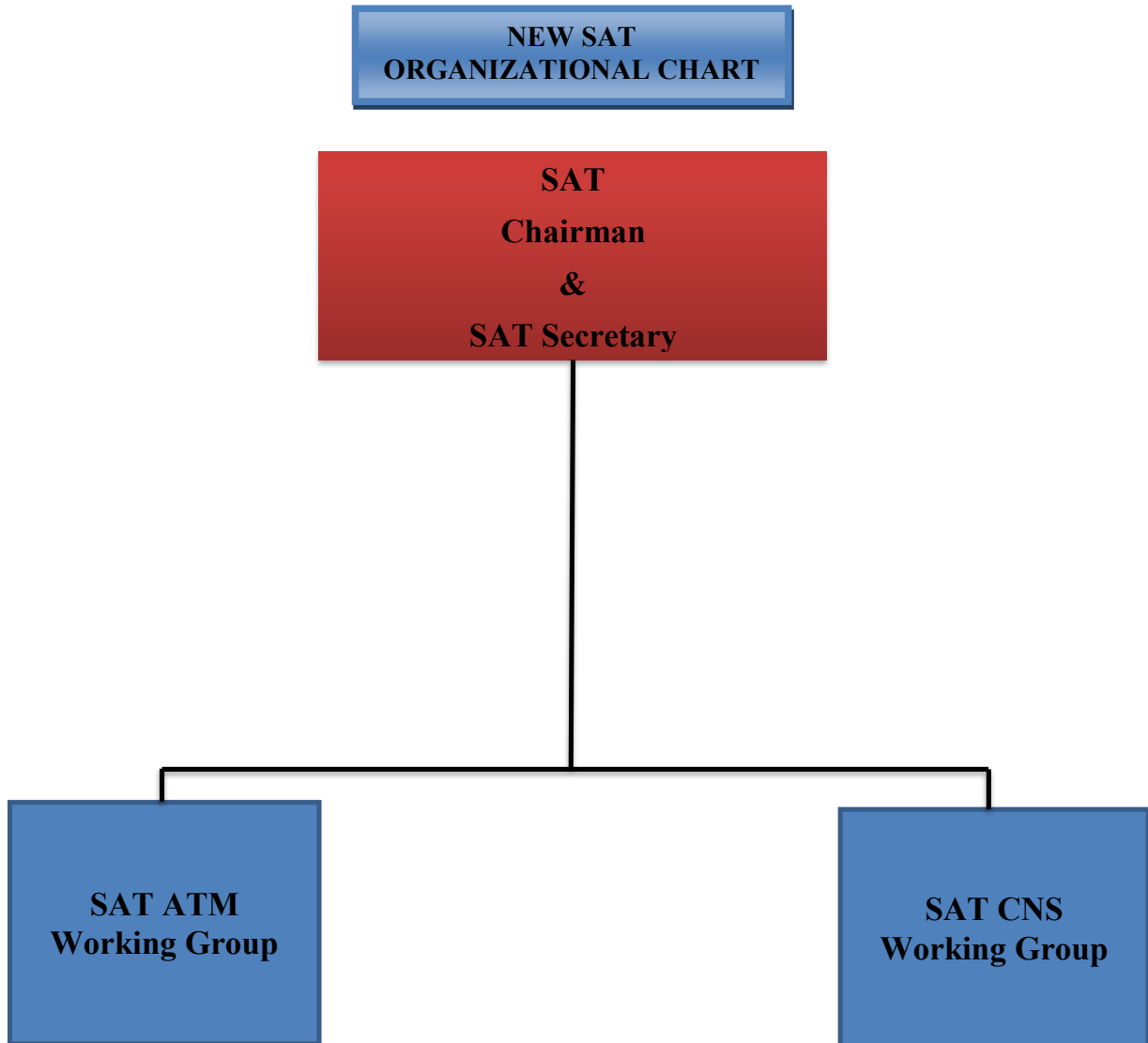


1.5 The SAT is led by a Chairman elected by its meeting and the ICAO WACAF Regional Office services the Secretariat. Since then, the SAT Group has been holding its yearly informal but structured meetings hosted in a rolling and volunteering principle for States and ANSPs in the AFI, EUR and SAM Regions. Opportunity is given to hold the meeting on CNMC and SAT/FIT in preparation of the SAT meeting held back to back during the same week.

1.6 This handbook formalizes the organisation composition work programme and work methodology of the SAT to provide more flexibility and efficiency in its work. In this regard the following major changes are envisaged:

- Refer all ATM operational issues related to the provision of air traffic services to the ATM Working Group
- Refer all technical issues related to the infrastructure supporting the provision of air traffic services to the CNS/WG;
- Clear identification of operational requirements and targets to be planned and implemented by the SAT Group;
- Ad Hoc auxiliary bodies or Implementation Teams may be established by the SAT Group from time to time to address specific issues.

The new organizational chart is as follows:



2. Introduction

2.1 The SAT Procedural Handbook is a publication adopted by SAT. It is intended to provide, for easy reference of all interested parties, a consolidation of material, particularly of a procedural nature, relevant to the work of the SAT and its contributory bodies. It also contains the working arrangements and internal instructions, developed by the Group for the practical application of its terms of reference and working methods.

Note:

In this Handbook, the words “working arrangements” and “working methods” have been used interchangeably. They do not however, always have the same connotation in all contexts.

2.2 This First Edition of the SAT Procedural Handbook reflects the recommendations from SAT members to review and revise the Terms of Reference, Organization, Working Methods and Arrangement in order to improve the efficiency of the SAT.

Organization of the Handbook

2.5 The Handbook is organized in Sections and Parts headings describing the terms of reference, composition, position in ICAO, working arrangements, rules of procedure and practices governing the conduct of business.

2.6 The framework of Section and Part headings, as well as the page numbering has been devised so as to provide flexibility, facilitating the revision or the addition of new material. Each Section is self-contained and includes an introduction giving its purpose and status and a detailed table of contents which serves also as the subject index and checklist for the current pages.

2.7 The Procedural Handbook will be made available to Members and Observers of SAT, the ICAO Secretariat, and to other States and international organizations participating in meetings, contributing to, or having interest in the work of the SAT and/or its contributory bodies.

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**GROUP FOR THE CONTINUED IMPROVEMENT OF AIR TRAFFIC
SERVICE OVER THE SOUTH ATLANTIC
(SAT)**

PROCEDURAL HANDBOOK

PART I

**TERMS OF REFERENCE, WORKING ARRANGEMENTS AND
RULES OF PROCEDURE FOR THE CONDUCT OF MEETINGS**

SAT PROCEDURAL HANDBOOK - PART I

PART I - TERMS OF REFERENCE OF THE GROUP FOR THE CONTINUED IMPROVEMENT OF AIR TRAFFIC SERVICE OVER THE SOUTH ATLANTIC (SAT)

1. Background

1.1 The Group for the improvement of air traffic service over the South Atlantic (SAT) was initiated by the Limited Africa/Indian Ocean (COM/MET/RAC) Regional Air Navigation Meeting (LIM/AFI, Lomé, Togo 12-27 April 1988), under its Conclusion 3/15-*Continued improvement of Air Traffic Service over the South Atlantic* calling upon for, when necessary, the convening of informal meetings under the auspices of ICAO with the States and international organizations concerned to examine any possible improvement of air traffic service over the south Atlantic.

1.2 The Seventh Africa/Indian Ocean Regional Air Navigation (RAN) Meeting (AFI RAN/7, Abuja, Nigeria, 12-23 Mai 1997) through its Recommendation 5/11- *Improvements to the air navigation system in the South Atlantic* recommended that to ensure continuity in the development to the air navigation system in the South Atlantic parts of the AFI and SAM Regions, States concerned and interested international organization should meet under the auspices of ICAO at least once a year to study, monitor and evaluate the air navigation system in the light of changing traffic characteristics and technology, coordinate the implementation of improvements to the air navigation system, including new CNS/ATM systems, and develop amendment proposals to the air navigation plan and Regional Supplementary Procedures (SUPPs, Doc 7030) as required.

1.3 The Council, at the tenth meeting of its 152nd Session on 1 December 1997, approved the above AFI RAN Recommendation 5/11 and requested the Secretary General to bring it to the attention of States.

2. Terms of reference

2.1 The SAT Group aims primarily to ensure, in the South Atlantic parties of the AFI and SAM Regions, a continuous, coherent and harmonized implementation of the air navigation system in accordance with the provision and schedule of the concerned Regional Plans aligned with the Global Air Navigation Plan (GANP Doc. 9750).

2.2 In addition, the objective of the SAT Group is to provide to States and international organizations concerned, the opportunity to examine any possible improvement of air traffic service over the south Atlantic through the conduct inter alia, of the following tasks:

- 1) Study, monitor and assess the air navigation system in light of the evolution of traffic characteristics and technology with due observance to the primacy of air navigation safety and the need for air navigation optimum capacity and efficiency over the South Atlantic;
- 2) Identify and address specific air navigation deficiencies;

- 3) Coordinate the implementation of improvements in the air navigation system, including new CNS/ATM systems;
- 4) Develop as required, proposals for amendment of air navigation plan and regional supplementary procedures.

2.2 The Planning and Implementation Regional Groups for the AFI Region (APIRG), the CAR and SAM Regions (GREEPECAS), the North Atlantic System Planning Group (NAT SPG) and the Europe Air Navigation Planning Group (EANPG) and all user States should be regularly kept informed of new developments, as well as the identification and resolution of air navigation deficiencies in the SAT.

2.3 SAT is an implementation and coordination enabler and, while implementation is the responsibility of States, SAT can play a significant role in supporting the harmonization of the implementation of ICAO SARPs as well as Regional requirements over the South Atlantic.

2.2 The SAT Group will cooperate with its neighbourhood specially, the NAT SPG by identifying priority areas for potential joint projects aiming at harmonization to achieve seamless operations.

3. Composition

3.1 In accordance with the relevant conclusions of the LIM AFI (COM/MET/RAC) and the Recommendations of the AFI/RAN/7 Meetings, ICAO Contracting States, Air Navigation Service Providers, International associations for Airlines (IATA), Air Traffic Controllers (IFATCA), Air Traffic Safety Electronic Personnel (IFATSEA), Pilots (IFALPA), Aeronautical Communication Service Providers (SITA) over the South Atlantic in the AFI, EUR, SAM and NACC Regions, should be included in the membership of SAT.

3.2 Air navigation systems suppliers are entitled to participate in any other SAT meeting as observers but non-members.

3.3 International Organizations recognized by the Council may be invited as necessary to attend as observers to the SAT meetings.

4. Work Programme

4.1 In order to meet its terms of reference, the SAT Group shall establish and assign to its contributory bodies, work programmes that are based on the objective of the SAT and give effect to the terms of reference of the Group and shall perform the following tasks:

- a) review, and propose when necessary, the target dates for implementation of services and procedures, facilities, to ensure the coordinated implementation of the Air Navigation Systems South Atlantic;
- b) in line with the Global Air Navigation Plan (GANP), facilitate the conduct of necessary systems performance, monitoring, identify specific deficiencies in the air navigation field, and propose corrective action;
- c) develop as required, proposals for amendment to update the Regional Air Navigation Plans of the SAT concerned regions necessary to satisfy any changes in the requirements;

- d) monitor implement air navigation facilities and services and where necessary, ensure interregional harmonization, taking into consideration organizational aspects, economic issues (including financial aspects, cost/benefit analyses and business case studies) and environmental matters;
- e) assess human resource planning and training issues and propose, where necessary, human resource development capabilities that are compatible with the concerned Regional Air Navigation Plans;
- f) Conduct when necessary, safety assessments prior to any implementation that may bring important changes to SAT CNS/AT systems with significant impact on safety;
- g) conduct the above activities in the most efficient manner possible with a minimum of formality and documentation and call meetings of SAT when deemed necessary;
- h) coordinate with other regional and sub-regional bodies as necessary to support implementation and monitoring.

4.2 In delivering on its terms of reference, SAT will at all times do so in accordance with the Strategic Objectives of ICAO as updated from time to time. The Strategic Objectives of ICAO are reflected in **Appendix** to this Handbook

5. Creation and dissolution of contributory bodies

5.1 In order to assist in its work, the Group may create contributory bodies, charged with specific functions and/or tasks to enable the Group in discharging on its terms of reference. A contributory body shall be dissolved when it has:

5.2

- a) completed its assigned task;
- b) been determined that the work can be more effectively addressed by another body; or
- c) become apparent that work on the subject or work programme in question cannot be usefully continued.

6. Position in ICAO

6.1 The Group shall be the co-ordinating and reporting organ for all activities conducted within ICAO concerning the Air Navigation System over the South Atlantic Region but shall not assume authority vested in other ICAO bodies such as the PIRGs. The activities of the Group shall be subject to review by the Planning and Implementation Regional Groups (PIRGs) concerned, in the spirit of **Recommendation 5/11- *Improvement of Air Traffic Service over the South Atlantic*** of the AFI/RAN/7 meeting.

6.2 The work of SAT Working Groups are auxiliary bodies of the SAT Group and shall co-ordinate all matters related to air navigation with the SAT Group Secretary to ensure consistency of all initiatives and activities regarding the development and operation of the system.

**GROUP FOR THE CONTINUED IMPROVEMENT OF AIR TRAFFIC
SERVICE OVER THE SOUTH ATLANTIC
(SAT)**

SAT PROCEDURAL HANDBOOK

PART II

WORKING ARRANGEMENTS OF SAT

SAT PROCEDURAL HANDBOOK - PART II

PART II - WORKING ARRANGEMENTS

1. Relations with members

1.1 Members are identified in the Terms of Reference, and SAT, shall be kept fully informed of activities of the SAT. To achieve this objective, members should, on a regular basis, receive or be informed through e-location on:

- a) The proposed agenda for meetings of the Group;
- b) The reports on meetings of the Group and, as appropriate
- c) The summaries or reports on meetings of its contributory bodies of high importance that could not wait for the forthcoming SAT meeting.

1.2 Members should ensure necessary facilitation for co-ordination and follow-up of the Group's activities within their Administrations.

1.3 The Group may obtain information from concerned members on specific planning and implementation issues and offer them advice in the form of specific proposals for action.

1.4 The Group should encourage the integration of the overall facilities and services required for international civil aviation operations with the national civil aviation plans of States, to avoid duplication of efforts.

1.5 Additionally, the Group should concentrate on a clear identification of existing deficiencies in the SAT air navigation system, on the establishment of priorities of overcoming them, on the development of methods of achieving implementation and on practical solutions to specific problems, particularly those matters that seriously affect the safety of international civil aviation operations over the South Atlantic.

2. Relations with other Organizations

2.1 SAT shall keep itself informed of the activities of other organizations to the extent that such activities are likely to have an impact on the planning and operation of the air navigation system over the South Atlantic.

When necessary, SAT shall provide information and advice to such organizations, if this is required, in order to avoid duplication of studies and/or effort.

3. Administration of the SAT

3.1 The SAT shall be administered as follows:

3.2 By a Chairperson elected from the representatives designated by Member States of the Group. A Vice-Chairperson shall also be elected from the said representatives.

- 3.3 By a Secretariat appointed by the Regional Office of Dakar.
- 3.4 The Chairperson, in close co-operation with the Secretariat, shall make all necessary arrangements to ensure efficient working of the Group
- 3.5 Between meetings of the Group or its Working Groups, some subjects may be dealt with by correspondence among appointed subject matter experts through the Secretariat of the SAT or of the contributory bodies concerned.

4. Meetings of the Group

- 4.1 The Secretariat will make with the hosting State/ANSP, the necessary arrangements on the date and duration of meetings of the Group.
- 4.2 Meetings shall normally be convened in the principle of rotation of the locations amongst members.
- 4.3 Delegates of members may be accompanied by advisers. Total attendance should, however, be kept to a minimum consistent with the topics to be discussed so as to maintain the desired informality of proceedings.
- 4.4 The ICAO Regional Offices in Dakar shall provide the Secretariat services to the Group. In the execution of its duties the Secretariat should be supported by the Regional Offices of Lima, Nairobi and Paris as required.

5. Establishment of ad hoc Groups and Implementation Teams

- 5.1 In order to assist in its work, the SAT Group may task its Working Groups to create ad hoc Groups or Implementation Teams charged with specific functions and/or tasks to enable the Working Groups in effectively discharging on its terms of reference.

General considerations

The establishment and work of ad hoc Groups and Implementation Teams shall be based on the following principles:

- a) an ad hoc Group or Implementation Team shall only be formed when it has been clearly established that it is likely to be able to make a substantial contribution to the resolution of a deficiency, shortcoming, challenge, implementation of SARPs or inter-regional requirements, for which it is established;
- b) it shall be given clear and concise terms of reference describing not only its task but also an expected target date for its completion;
- c) a balance shall be established between the formation, composition and working arrangement of an ad hoc Group or Implementation Team, and the ability of members and concerned organizations to participate effectively in ad hoc Group or Implementation Team, taking into consideration, amongst others, logistical and resource issues;
- d) its composition shall be such that, while being kept as small as possible, all members and observers likely to be able to make valid contributions are given the opportunity to participate in it;

- e) its activities shall be subject to review by the Working Groups, especially in order to ensure progress and to avoid duplication of efforts in fields already covered by other activities; and
- f) an ad hoc Group or Implementation Team shall be dissolved when it has:
 - i). completed its assigned task;
 - ii). been determined that the work can be more effectively addressed by another group; or
 - iii). become apparent that work on the subject or work programme in question cannot be usefully continued.

5.2 The secretaries and facilitators of ad hoc Groups or Implementation Teams will be appointed by the Working Groups.

Working Groups

5.3 The Working Groups reflected in Part IV of this Handbook have been established taking into consideration the principles highlighted under paragraph 5.2 of this Part.

5.4 Working Groups shall be composed of officials possessing the qualifications and experience in at least one of the aviation technical areas in the Working Group concerned. In order to facilitate focus, continuity and appropriate expertise, States and international organizations identified by SAT will nominate specific officials to the Working Groups to enable the respective Working Groups to optimally take advantage of the expertise available to them.

5.5 In addition, to enable the desired continuity and the benefits thereof, members should minimize changes of the nominated experts, and instead, allow the nominated experts to serve for a sufficiently lengthy period of time.

5.6 Each Working Group will be supported by a Secretary designated by the Secretary of SAT from among members of the ICAO Secretariat. In addition, the Secretary of SAT may assign other members of the ICAO Secretariat to support the Working-Groups as necessary.

6. Status of Observers

6.1 In accordance with the provisions of paragraph 3.3 of Part I, representatives of States which are non-members of SAT and international organizations will have the status of Observers at SAT meetings. Observers will be expected to contribute to the work of the Group.

8. Co-ordination and reporting lines

8.1 The Group reports to APIRG through its Secretary.

8.2 Strategic co-ordination among Working Groups will primarily be ensured by the Group, taking into consideration their terms of reference and work programme or when taking action on their reports

8.3 Routine coordination between the Group or its contributory bodies and other ICAO groups, including PIRGs and RASGs and meetings concerning the SAT Region shall be conducted through the SAT Secretariat or on its behalf, by the ICAO Regional Office of the Office of accreditation as required.

8.4 Coordination with representatives of Member States of the Group and representatives of international organizations attending regularly the meetings of SAT shall be conducted through the Secretary of SAT. ICAO Regional Offices in other SAT concerned Regions shall be kept informed of such correspondence whenever it may have an impact on the work of these Offices.

8.5 Relations with States and international organizations whether or not represented in the Group, as well as relations with organizations will normally be conducted through the Secretariat or on its behalf, by the ICAO Regional Office of the Office of accreditation as required.

8.6 Relations with experts provided by States as Members of SAT Working Groups shall be conducted by the Secretary of the Sub-group concerned.

**GROUP FOR THE CONTINUED IMPROVEMENT OF AIR TRAFFIC
SERVICE OVER THE SOUTH ATLANTIC
(SAT)**

SAT PROCEDURAL HANDBOOK

PART III

**RULES OF PROCEDURE FOR THE CONDUCT OF MEETINGS OF
THE SAT**

SAT PROCEDURAL HANDBOOK - PART III

PART III - RULES OF PROCEDURES FOR THE CONDUCT OF MEETINGS OF SAT

1. General

1.1 As set out in the Working Arrangements of the SAT related to its Administration, SAT shall at all times work with a minimum of formality and paper work. To achieve this aim, the rules of procedures for the conduct of meetings should be as flexible and simple as possible. The Group is expected to conduct its business by consensus of all interested parties. The following provisions do not include therefore any procedures for handling motions or voting.

1.2 There shall be no minutes for the meetings of the Group. Reports on SAT meetings should not include formal Statements by members or other participants. However, specific divergent views expressed in relation to decisions taken or conclusions reached shall be recorded as an integral part of the report.

2. Participation

2.1 Representatives of Member States of SAT should participate regularly in the meetings of the Group.

2.3 The Group shall normally invite industry representative international organizations recognized by the Council as representing important civil aviation interests to participate in the work of the SAT in a consultative capacity. Among the international organizations, IATA, IFALPA, IFATCA and IFATSEE should be invited on a continuous basis. Other international organizations may also participate when specifically invited by the Group.

2.4 The Secretariat should endeavour to ensure adequate representation by members, the industry international organizations, invited by the Group to participate in its meetings.

3. Convening of meetings

3.1 At each of its meetings, the Group should endeavour to agree on the date, venue and duration of its next meeting. States that offer to host SAT meetings including its Working Groups will be requested to confirm through a formal offer within three months succeeding the last meeting.

3.2 In accordance with its objectives, SAT shall:

- a) ensure the continuous and coherent development of the AFI Regional Plan as a whole and in relation to that of adjacent Regions; and
- b) identify specific problems in the air navigation field concerning the SAT area and propose remedial action addressed to parties concerned.

3.3 A convening letter for a meeting shall be addressed by the Secretary of the Group, normally **60** days prior to the meeting, to representatives of:

- a) Member States of SAT;
- b) Non Member States, having indicated interest to regularly participate in the meetings of the SAT; and
- c) International organizations invited to participate on a continuous basis in the activities of the Group.

3.4 The convening letter should include the agenda, together with explanatory notes prepared by the Secretary in order to assist participants in preparing for the meeting.

3.5 The ICAO Regional Office Dakar in liaison with other concerned ICAO Regional Offices, shall ensure that States and International organizations concerned, are informed of the convening of SAT meetings and the agenda with explanatory notes.

4. Establishment of the Agenda

4.1 The Secretary, in consultation with the Chairperson of the SAT shall establish a draft agenda on the basis of the work programme adopted and the ICAO documentation on latest developments pertaining to the work of the Group.

4.2 The draft agenda shall be circulated with the convening letter, as specified in sub-paragraph 3.4 above, for comments in writing by expected participants in that meeting.

4.3 At the opening of the meeting, a State or international organization may propose the inclusion of additional items on the agenda, and this shall be accepted if the majority of States attending the meeting so agree.

5. Languages

5.1 The languages of the meetings of the SAT shall be English.

5.2 The reports on meetings of the Group and supporting documentation will be prepared in English.

6. Officials and Secretariat of the SAT

6.1 In order to ensure the necessary continuity in the work of the Group and unless otherwise determined by special circumstances, the Chairperson, the Vice-Chairperson and of

the SAT should assume their functions at the end of the meeting at which they are elected, and serve for at least three calendar years or two meetings of SAT, whichever occurs latest.

6.2 Members of the Group may at any time request that the election of the Chairperson and/or Vice-Chairpersons be included on the agenda. Elected Officers may, in any circumstances, be re-elected.

6.3 The Secretary of the SAT will serve as Secretary of the meetings of the Group. He/she will be assisted by other members of the ICAO Secretariat as necessary.

7. Reports, Working Papers and other Documentation

7.1 Presentation of reports of Working groups should normally be made by the Secretary of the respective Working Groups.

7.2 Documentation for meetings of the SAT will be prepared by the Secretariat, Member States of the Group and international organizations participating on a continuous basis in the activities of the Group.

7.3 Any State, international organization and African body or organization, whether or not attending, may submit material for consideration by an SAT meeting. In cases where the material submitted is in the form of supporting documentation on a specific subject, the originator is expected to attend the meeting to which it is presented, at least during the discussions on the subject concerned.

7.4 Supporting documentation shall be presented in the form of:

- a) Working Papers;
- b) Information Papers.

7.5 **Working Papers** constitute the main basis of the discussions on the various items on the agenda.

7.6 Working Papers shall be presented in a standardized format. Each paper should be limited to one agenda item or sub-item and contain, as appropriate, introduction of the matter, brief discussion and conclusions with specific proposals for action.

7.7 Working Papers should be made available to all interested parties as early as practicable, preferably 05 days before the meeting at which they are intended to be considered.

7.8 Working Papers shall be made available by the Secretary to:

- a) Members of the Group;
- b) States having notified the Secretary of their intention of being represented at the relevant meeting; and
- c) International organizations attending SAT activities on a regular basis.

7.9 States or international organizations originating a Working Paper and not attending a specific meeting of SAT shall also be provided with a copy of that particular Working Paper.

7.10 **Information Papers** are intended solely to provide participants at a meeting with factual information on developments of technical or administrative matters of interest to the Group.

7.11 Information papers will be made available to all participants and may be made available to all interested parties as early as practicable depending on logistical and other document processing constraints.

8. Conclusions and Decisions of the Meetings

8.1 Action taken by the Group shall be recorded in the form of:

- a) Conclusions; and
- b) Decisions.

8.2 **Conclusions** deal with matters which, in accordance with the Group's terms of reference, merit directly the attention of States, or on which further action is required to be initiated by the Secretary in accordance with established procedures.

8.3 Conclusions are aimed mainly at the furtherance of studies and programmes being undertaken by the Group and its Working Groups.

8.4 **Decisions** relate to the internal working arrangements of the Group and its Working Groups.

9. Conduct of business

9.1 The meetings of the SAT shall be conducted by the Chairperson or, in the absence of the Chairperson, by the Vice-Chairperson of the Group.

9.2 At the first sitting of each meeting, following the opening by the Chairperson, the Secretary shall inform participants of the meeting arrangements, its organization and of the documentation available for consideration of the different items on the agenda.

9.3 Each meeting of the SAT will consider, as required:

- a) reports from the SAT and Working Groups;
- b) specific planning and implementation matters; and
- c) review and up-date of the SAT Work Programme.

9.4 At each of its meetings, the Group shall also establish a tentative meeting programme (including meetings of the SAT and Working Groups) for at least the following two calendar years.

9.5 The Group shall at each of its meetings review its outstanding Conclusions and Decisions in order to keep them current and their number at a minimum consistent with the progress achieved in implementation.

10. Reports

10.1 Reports on meetings shall be of a simple layout and as concise as possible and shall include:

- a) a brief history of the meeting (duration, attendance, agenda and list of Conclusions and Decisions);
- b) a summary of the discussions by the Group on the different items of the agenda including, for each of them, the relevant Conclusions and/or Decisions;
- c) the work programme and future action by the Group; and
- d) the tentative programme of future meetings of the Group and of its contributory bodies.

10.2 Draft Conclusions and Decisions will be prepared by the Secretariat for approval by the Group before the closing of each meeting.

10.3 The Meeting Report shall be made available on the meeting webpage by the Secretary to the attention of:

- a) Members of the Group;
- b) Other States and international organizations having attended the relevant meeting; and
- c) ICAO Headquarters for consideration by the Air Navigation Bureau, the Air Navigation Commission and the Council as required.

10.4 The report shall also be circulated, through the ICAO Regional Offices of accreditation, to all provider States in the concerned by the SAT as well as to international organizations concerned.

**GROUP FOR THE CONTINUED IMPROVEMENT OF AIR TRAFFIC
SERVICE OVER THE SOUTH ATLANTIC**

PROCEDURAL HANDBOOK

PART IV

**WORKING GROUPS OF SAT
TERMS OF REFERENCE, COMPOSITION AND WORK SCHEDULE**

PART IV-A - SAT ATM WORKING GROUP (ATM/WG)

**TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION OF THE SAT
ATM WORKING GROUP (ATM/WG)**

- Study, monitor and assess the air navigation system in light of the evolution of traffic characteristics in areas of routing AR1/HA1 and AR2/HA8 *as defined in the Global Air Navigation Plan (ICAO Doc 9750)*.
 - Ensure the continuous improvement of air traffic service over the south Atlantic trough:
 1. Optimum Airspace Organization and Management with the implementation, maintenance and monitoring of separation minima (RNP, RNAV and RVSM.), Random Routing
 2. Development of a new EUR/SAM Corridor Airspace Concept
 3. Conflict Management
 4. Contingency plans harmonization;
 5. Performance based (PBCS/PBN) separation minima implementation
 6. Coordination of South Atlantic Air Traffic Management with NAT's
 7. The ATM Working Group should explore ways and means to achieve further enhancements and implementation in ATM capacity and elements taking into consideration the timescales agreed by the requirements identified in the AFI and CAR/SAM CNS/ATM *AIR NAVIGATION* Implementation Plans.
- Note: The Working will adopt a pragmatic approach and may set up auxiliary bodies to carry out specific tasks, as necessary.*

WORK PROGRAMME

TASK No.	SUBJECT	TARGET DATE
1.	Analyze ATM deficiencies and make proposals for their elimination.	Continuous
2.	Monitor pre-implementation/post-implementation safety assessments (as applicable) for any changes in the systems/procedures with significant impact on safety such as but not limited to RVSM and RNP, PBCS and any new operations in the South Atlantic, including adjacent areas.	Continuous
3.	Study and evaluate RVSM, RNP/RNAV procedures applicable in the AFI/CAR/SAM and EUR/SAM Interface areas.	Continuous
4.	Monitor flight plan availability and propose appropriate corrective measures.	Continuous
5.	Oversee FANS 1/A system performance monitoring to ensure that the system continues to meet safety and interoperability requirements and that operations and procedures are working as specified.	Continuous
6.	Harmonize ADS/CPDLC programmes developed by SAT States/FIRs and analyze cost-benefit aspects related to their implementation.	Continuous
7.	Maintain ADS/CPDLC operational guidance material updated.	Continuous
8.	Conduct studies related to the implementation of the Global ATM Operational Concept and other enabling concepts within the SAT area.	Continuous
9.	Continue studies related to the extension of the AORRA airspace.	SATXX

10.	Analyze the operational requirements of AIDC implementation in South Atlantic	SATXX
11.	Analyze the feasibility of ITP application in the South Atlantic	SATXX
12.	Monitor the operation of Performance Based Communication and Surveillance in the SAT area.	SATXX
<ul style="list-style-type: none"> Note: The ATM/WG should take appropriate action on pressing issues and submit its proposal to the SAT Group meeting. 		
COMPOSITION		
<ul style="list-style-type: none"> <i>The Working Group of multi-disciplinary nature shall comprise of experts from States responsible of FIRs in AFI and SAM routing areas AR1/AH2 and AR2/AH8 as defined in the Global Air Navigation Plan (ICAO Doc 9750), and experts from adjacent FIRs and international organizations.</i> Rapporteur: Spain <i>Tasks Nos. 5, 6 and 7 are assigned to the SAT South Africa Team Leader.</i> Working arrangements: <i>The ATM/WG should complete its work and submit its proposal to the SAT Group. The ATM/WG should work through electronic correspondence prior to meetings.</i> 		

PART IV-B - SAT CNS WORKING GROUP (CNS/WG)

TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION OF THE SAT CNS WORKING GROUP (CNS/WG)

Considering the CAR/SAM and AFI Air Navigation Plans, the SAT CNS/WG should explore ways and means of achieving further enhancements in ATM efficiency within areas of routing AR1/HA1 AR-2/HA8 *as defined in the Global Air Navigation Plan (GANP ICAO Doc 9750)*, by resorting to emerging technologies and, in particular, by taking advantage of rationalization, integration and harmonization of systems where appropriate through:

1. Implementation, maintenance and monitoring of a robust satellite based aeronautical communication infrastructure (CAFSAT) to support current and future service (AFTN, AMHS, AIDC, VoIP, Surveillance Data sharing...);
2. Interconnection and interoperability of SAT CNS/ATM systems with enough flexibility to accommodate existing and future services in an evolutionary and cost-effective manner in accordance with the vision of the ICAO ASBU Bo-FICE and B0-SWIM;
3. Identification, assessment of Cyber risk / threats on the SAT CNS/ATM systems and coordination of remedial mitigation actions;
4. Identification, Evaluation of the performance of SAT CNS systems, identification of deficiencies and coordination of remedial actions
5. The associated institutional arrangements shall not inhibit competition among service providers complying with relevant ICAO Standards, Recommended Practices and Procedures.

WORK PROGRAMME

TASK No.	SUBJECT	TARGET DATE
1.	Analyze CNS deficiencies and make proposals for their elimination.	Continuous
2.	Review the performance of the CAFSAT Network and coordinate its modernization	Continuous
3.	Monitor pre-implementation/post-implementation safety assessments (as applicable) for any changes in the systems/procedures with significant impact on safety such as but not limited to RCP, RSPS, AMHS, AIDC, VoIP and any new CNS system in the South Atlantic, including adjacent areas.	Continuous
1.	Monitor the implementation of Performance Based Communication and Surveillance in the SAT area by ensuring that the SAT CNS & ATM systems meet the criteria required for Performance Based Communication and Surveillance operation	Continuous during the implementation phase
2.	Undertake investigations on the lack of flight plans, including individual cases, with emphasis on the aeronautical fixed telecommunication network (links, switching centers, routing directory and transit time statistics). Assess the reports of the ACCs on the results of the annual work of the local groups tasked to investigate/mitigate missing Flight Plans	Continuous
3.	Carry studies and make proposals to achieve end-to-end interoperability of ATM applications, in accordance with the ATM global operational concept.	SATXX
4.	In accordance with outcome of investigation on CAFSAT performance evaluate the feasibility of using existing or emerging digital VSAT networks to support ATS data link applications in an ATN environment.	SATXX

5.	Considering the implementation time-frames in the AFI and SAM CNS/ATM implementation plans, address cost-benefit aspects for the use of CNS/ATM applications (as required).	Continuous
6.	In coordination with the operational requirements identified by the SAT ATM/WG, share relevant technical data of different ADS/CPDLC Systems, to be implemented by SAT States addressing issues regarding work methodology, procedures, data interchange, maintenance, etc.	Continuous
7.	Analyze all aspects related to the implementation of ATS Voice switching and signaling protocols (VoIP) in the SAT area in accordance with guidance material contained in ICAO Relevant documents	SATXX
8.	Identify, assess Cyber risk / threats on the SAT CNS/ATM systems and coordination of remedial mitigation actions;	Continuous
COMPOSITION		
<ul style="list-style-type: none"> • The CNS/WG being of multi-disciplinary nature shall comprise experts from States responsible of FIRs in the area concerned, experts from adjacent FIRs and international organizations and the aeronautical industry. • Rapporteur: Senegal. • Task Team leaders: TBD • Working arrangements: The CNS/WG should complete its work and submit its proposal to the SAT. The CNS/WG should work through electronic correspondence and teleconferences prior to meetings. 		

Appendix

Strategic Objectives of ICAO for the 2020-2022 Triennium

- **Strategic Objective A: *Safety***: Enhance global civil aviation safety. This Strategic Objective is focused primarily on the State's regulatory oversight capabilities. The Global Aviation Safety Plan (GASP) outlines the key activities for the triennium.
- **Strategic Objective B: *Air Navigation Capacity and Efficiency***: Increase the capacity and improve the efficiency of the global civil aviation system. Although functionally and organizationally interdependent with Safety, this Strategic Objective is focused primarily on upgrading the air navigation and aerodrome infrastructure and developing new procedures to optimize aviation system performance. The Global Air Navigation Capacity and Efficiency Plan (Global Plan) outlines the key activities for the triennium.
- **Strategic Objective C: *Security & Facilitation***: Enhance global civil aviation security and facilitation. This Strategic Objective reflects the need for ICAO's leadership in aviation security, facilitation and related border security matters.
- **Strategic Objective D: *Economic Development of Air Transport***: Foster the development of a sound and economically-viable civil aviation system. This Strategic Objective reflects the need for ICAO's leadership in harmonizing the air transport framework focused on economic policies and supporting activities.
- **Strategic Objective E: *Environmental Protection***: Minimize the adverse environmental effects of civil aviation activities. This Strategic Objective fosters ICAO's leadership in all aviation-related environmental activities and is consistent with the ICAO and UN system environmental protection policies and practices.