ICAO GLOBAL PROVISIONS
CNS and Spectrum
focusing on Surveillance

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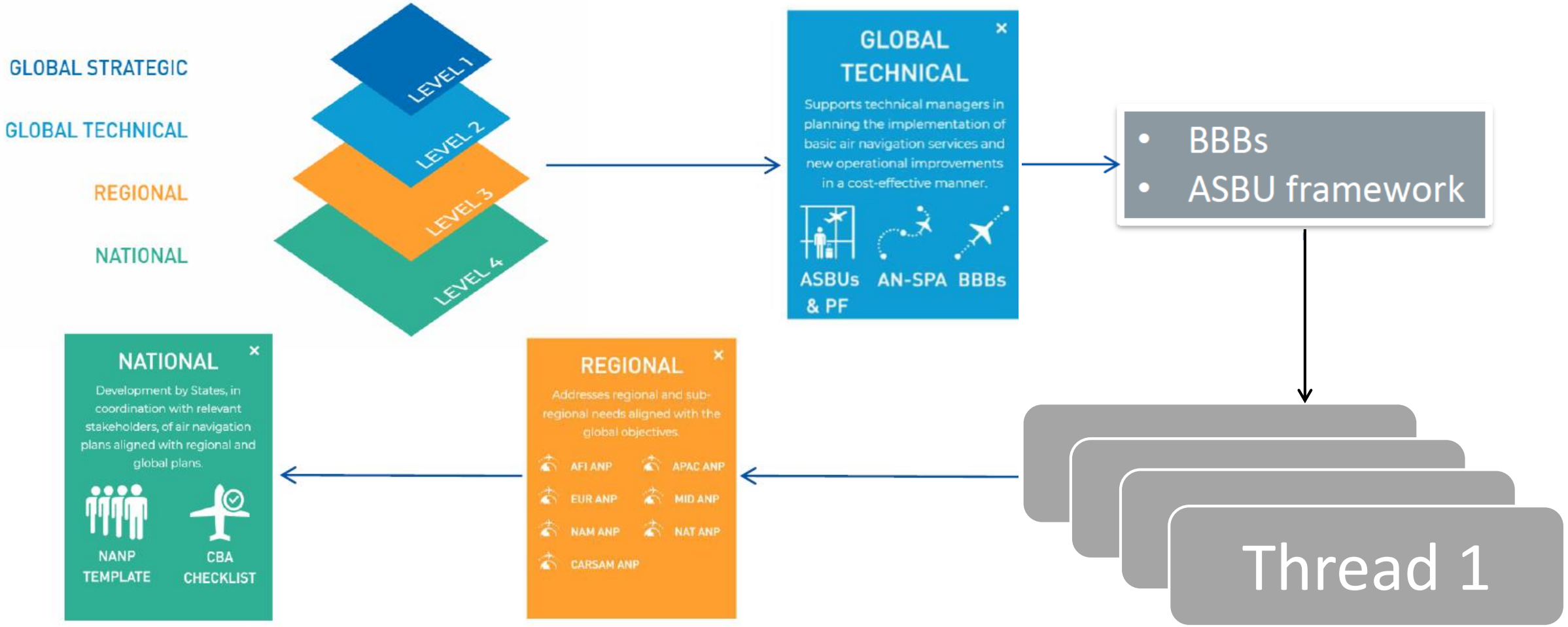
GANP and ASBUs related to Surveillance

WELCOME TO THE GLOBAL AIR NAVIGATION PLAN PORTAL

The GANP Portal is a web portal where all aviation stakeholders will be able to find the most relevant information related to the GANP

https://www4.icao.int/ganpportal/


GLOBAL STRATEGIC
GLOBAL TECHNICAL
REGIONAL
NATIONAL
LEVEL 1
LEVEL 2
LEVEL 3
LEVEL 4
GLOBAL TECHNICAL
Supports technical managers in planning the implementation of basic air navigation services and new operational improvements in a cost-effective manner.
ASBUs & PF
AN-SPA
BBBs
• BBBs
• ASBU framework
Thread 1
REGIONAL
Addresses regional and sub-regional needs aligned with the global objectives
AFI ANP
APAC ANP
EUR ANP
MID ANP
NAM ANP
NAT ANP
CARSAM ANP
NATIONAL
Development by States, in coordination with relevant stakeholders, of air navigation plans aligned with regional and global plans.
NANP TEMPLATE
CBA CHECKLIST

ASBUs

ASUR

ASUR-B0/1	Automatic Dependent Surveillance – Broadcast (ADS-B)	Technology
ASUR-B0/2	Multilateration cooperative surveillance systems (MLAT)	Technology
ASUR-B0/3	Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	Technology
ASUR-B1/1	Reception of aircraft ADS-B signals from space (SB ADS-B)	Technology
ASUR-B2/1	Evolution of ADS-B and Mode S	Technology
ASUR-B2/2	New community based surveillance system for airborne aircraft (low and higher airspace)	Technology
ASUR-B3/1	New non-cooperative surveillance system for airborne aircraft (medium altitudes)	Technology
ASUR-B4/1	Further evolution of ADS-B and MLAT	Technology

Refer to ICAO GANP Portal

ASBUs

CSEP

CSEP-B1/1	Basic airborne situational awareness during flight operations (AIRB)	Operational
CSEP-B1/2	Visual Separation on Approach (VSA)	Operational
CSEP-B1/3	Performance Based Longitudinal Separation Minima	Operational
CSEP-B1/4	Performance Based Lateral Separation Minima	Operational
CSEP-B2/1	Interval Management (IM) Procedure	Operational
CSEP-B2/2	Cooperative separation at low altitudes	Operational
CSEP-B2/3	Cooperative separation at higher airspace	Operational
CSEP-B3/1	Interval Management (IM) Procedure with complex geometries	Operational
CSEP-B3/2	Remain Well Clear (RWC) functionality for UAS/RPAS	Operational
CSEP-B4/1	Airborne separation	Operational

Refer to ICAO GANP Portal

ASBUs

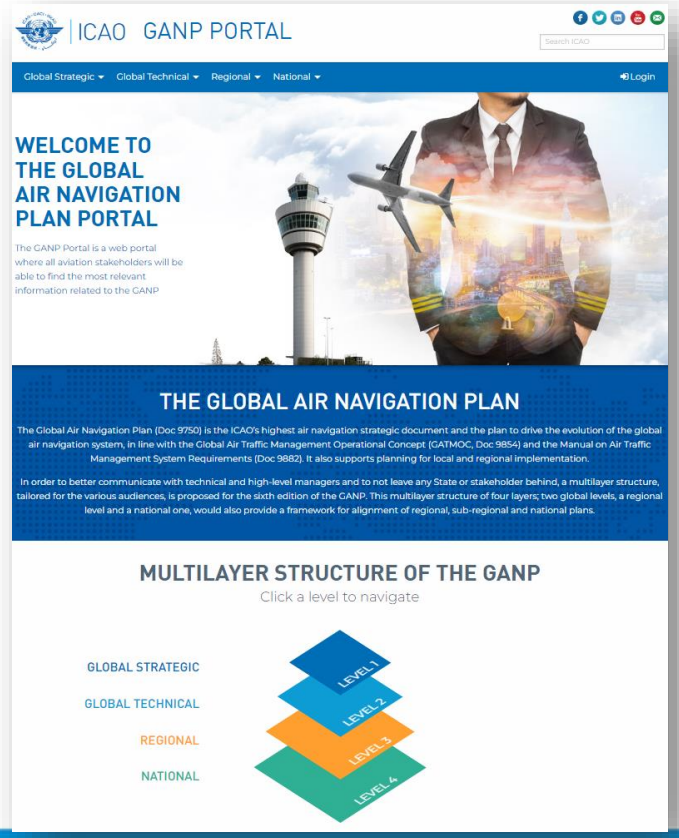
ACAS

ACAS-B1/1	ACAS Improvements	Operational
ACAS-B2/1	New collision avoidance system	Operational
ACAS-B2/2	New collision avoidance capability as part of an overall detect and avoid system for RPAS	Operational

Refer to ICAO GANP Portal

Assembly 41st Session
(27 Sep to 7 Oct 2022)

Assembly 41st Session (icao.int)



Draft GANP 7th Edition addresses:

It will be discussed under Item 30:
Aviation Safety and Air Navigation Policy

- GANP performance framework – safety
- Resilience in the GANP – cyber-resilience
- Linkage between BBB and USOAP
- Minor updates to the ASBU framework

Item 31: Aviation Safety and Air Navigation Standardization
A lot of WPs related to ICNSS, GNSS interference, Surveillance

ICNSS : A hot topic related to CNS!

For example, ICNSS related papers are as follows.		
A41-WP/58 TE/5	NEW ICAO STANDARDIZATION INITIATIVES TO IMPROVE THE EFFECTIVENESS OF THE STANDARDS DEVELOPMENT PROCESS – THE INTEGRATED COMMUNICATIONS, NAVIGATION, SURVEILLANCE AND SPECTRUM (ICNSS) PROJECT	Secretariat Paper
A41-WP/84 TE/13	A ROADMAP FOR INTEGRATED CNS AND SPECTRUM (ICNSS)	
A41-WP/108 TE/28	CHALLENGES IN IMPLEMENTATION OF NEW INTEGRATED CNS/ATM PROJECT	

Also, some ICNSS-relevant WPs will be discussed under Agenda item 23 as well.

ICNSS & SARPS Streamline Project

The Project

INTEGRATED CNS and Spectrum Task Force

ICNSS roadmap Task
Develop CNSS roadmap on flexible and continuing technical evolution

CNSS Standards Task
Define Performance Standards vs Technical Specifications

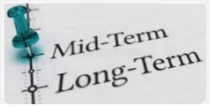
SECRETARIAT PROJECT TEAM
Define intra-organizational framework to support development/validation of International Industry Standards

End goal

ICNSS roadmap

(TBD Minimal Essential) SARPs framework

Global Technical Specification framework



Item 31: Aviation Safety and Air Navigation Standardization and Item 23: Innovation in Aviation

The Assembly WP: ICNSS

A41-WP/58 TE/5 explains the progress made by the Integrated CNS and Spectrum Task Force.

Action: The Assembly is invited to:
a) note the progress made by ICAO to date, related to the ICNSS project;
b) encourage States, Int Orgs and industry **to support the continued development and implementation of a medium to long-term roadmap for the evolution of ICNSS and a new streamlined framework for CNS and frequency spectrum standardization**; and
c) task ICAO to continue to **develop and finalize a new streamlined framework for CNS and frequency spectrum standardization**.

Pages - Integrated CNSS Project (icao.int)

Item 31: Aviation Safety and Air Navigation Standardization

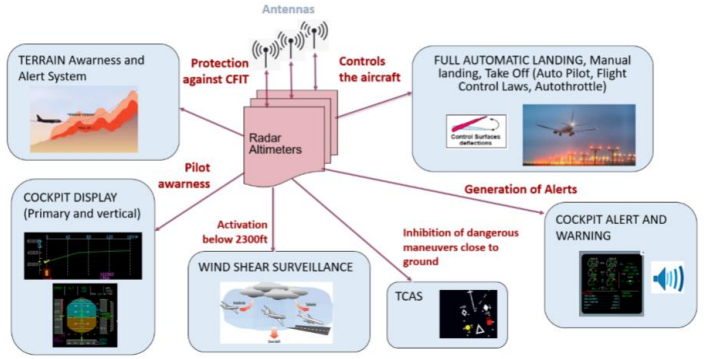
A lot of WPs related to ICNSS, GNSS interference, Surveillance

GNSS: A hot topic related to CNS!

For example, GNSS-related WPs are as follows.		
A41-WP/97 TE/23	IMPROVING COMMUNICATION NAVIGATION AND SURVEILLANCE (CNS) RESILIENCE THROUGH GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) INTERFERENCE MITIGATION	
A41-WP/196 TE/69	GNSS INTERFERENCE	
A41-WP/198 TE/71	MITIGATION OF GNSS VULNERABILITIES	
A41-WP/298 TE/116	PROGRESS ON THE IMPLEMENTATION OF GNSS/SBAS IN AFRICA	
A41-WP/304 TE/119	GNSS RADIO FREQUENCY INTERFERENCE (RFI) AND ITS IMPACT ON THE IMPLEMENTATION OF SBAS IN AFRICA *Information Paper	

Item 30: Aviation Safety and Air Navigation Standardization

A lot of WPs related to Spectrum…



Spectrum (WRC and 5G/Radio Altimeter: A hot topic related to CNS!

For example, WPs related to Spectrum are as follows.		
A41-WP/266 TE/99	COLOMBIAN CIVIL AVIATION AUTHORITY'S ENDORSEMENT OF THE ICAO POSITION ON RELATED MATTERS TO BE CONSIDERED AT THE WORLD RADIOCOMMUNICATION CONFERENCE (2023) (WRC-23) OF THE INTERNATIONAL TELECOMMUNICATION UNION (ITU)	
A41-WP/80 TE/11	STRENGTHENING PROTECTIONS FOR AVIATION SAFETY SYSTEMS FROM HARMFUL INTERFERENCE	

Item 31: Aviation Safety and Air Navigation Standardization

A lot of WPs related to ICNSS, GNSS interference, Surveillance

Surveillance:
A hot topic related to CNS!

For example, WPs related to Surveillance are as follows.	
A41-WP/162 TE/54	AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST SECURITY AND PRIVACY CONCERNS AND POSSIBLE SOLUTIONS
A41-WP/353 TE/137	REVIEW OF THE PERIODICITY OF IN-FLIGHT INSPECTIONS OF AERONAUTICAL SURVEILLANCE RADAR SYSTEMS

Also in this agenda, ATSEP-related WP will be discussed. A41-WP/122 TE/37: UPDATE EXISTING ATSEP CYBERSECURITY TRAINING OBJECTIVES AND DEVELOPMENT OF NEW ATSEP CYBERSECURITY TRAINING OBJECTIVE

Item 33: Other issues to be considered by the Technical Commission

Some relevant WPs also will be discussed such as :

For example, WPs related to Surveillance are as follows.	
A41-WP/337 TE/133	PROGRESS, CHALLENGES AND ADVANTAGES OF ADS-B IMPLEMENTATION IN THE SAM REGION

Surveillance

Ongoing standardization activities

Terms of Reference for the Surveillance Panel (SP)

[…]

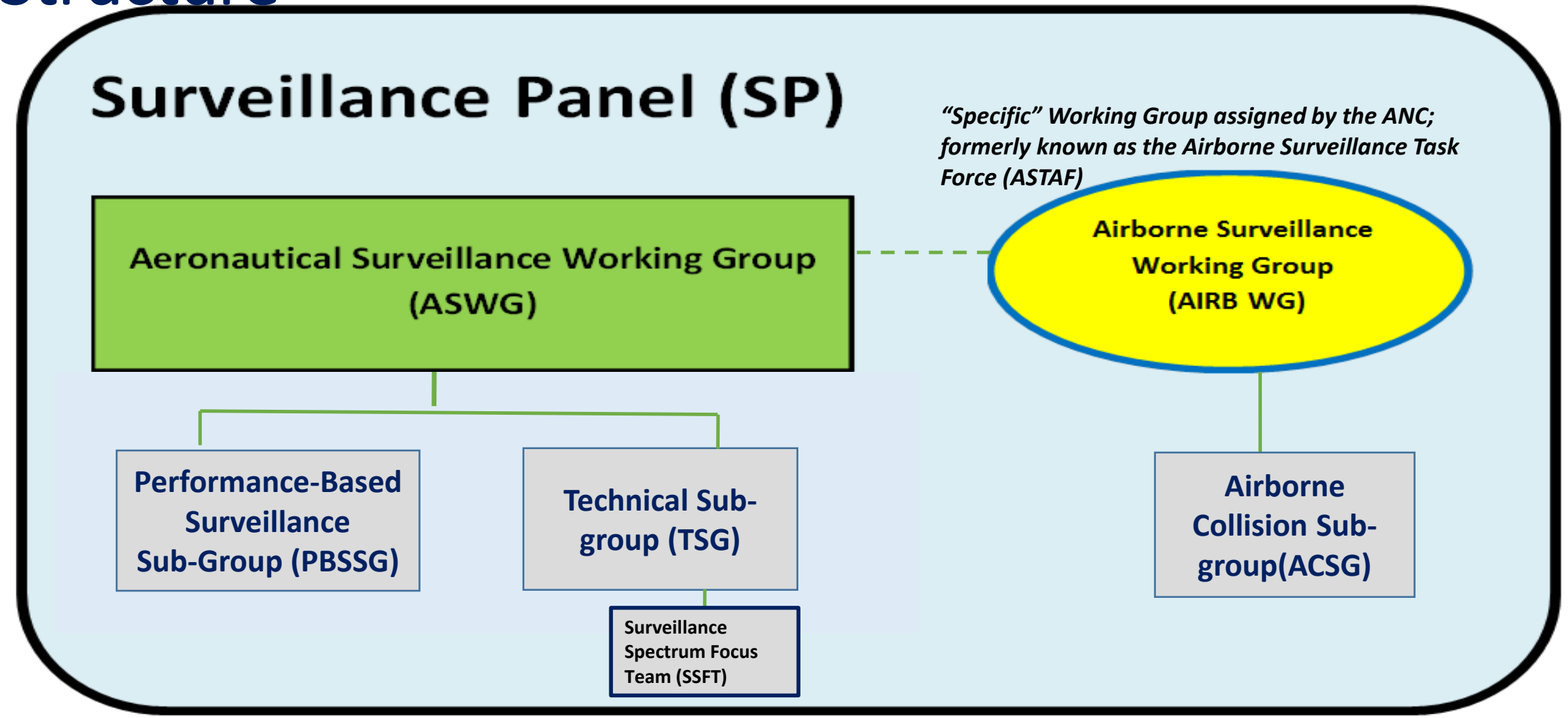
Objectives

1) Develop and maintain SARPS and guidance materials covering the procedural and technical aspects of:
   a) airborne and ground based aeronautical surveillance systems
   b) airborne collision avoidance systems (ACAS)
   c) related facilities and systems
   d) airborne surveillance capabilities (e.g. AIRB, VSA and SURF)
   e) advanced airborne surveillance applications (e.g. interval management and airborne separation)
   f) ground based safety nets

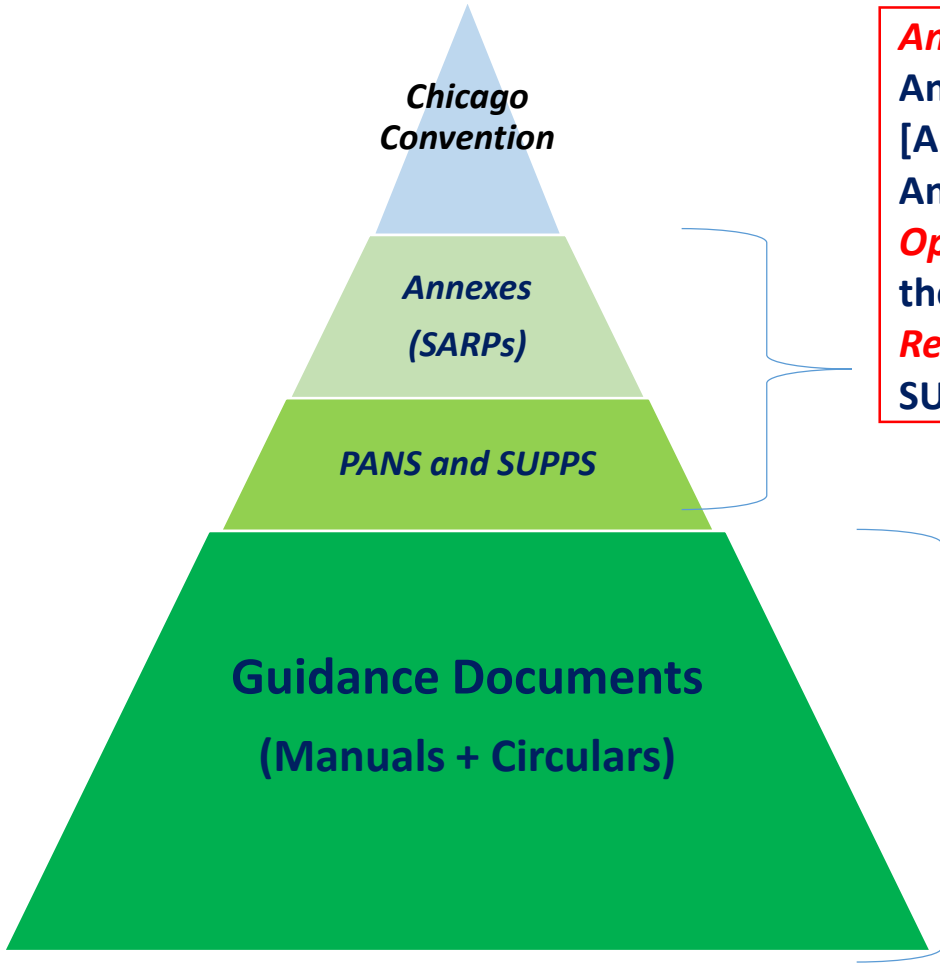
2) Develop provisions for detect and avoid capability for Remotely Piloted Aircraft (RPA) in coordination with the RPASP

[…]

Panel Structure



ICAO Framework …in relation to SP



Annexes (SARPs) :
Annex 10 Vol IV (SSR Mode S, ADS-B extended squitter, MLAT)
[Annex 10 Vol I (GNSS) , Vol III (VDL, 24-bit address), Vol V (frequency)]
Annex 2 and Annex 11
Operational procedure:
the PANS-ATM (Doc 4444) and the PANS-OPS (Doc 8168).
Regional requirements/procedure:
SUPPS

Technical Requirements :
Doc 9871, Technical Provisions for Mode S Services and Extended Squitter

Guidance Materials :
Doc 9863 ACAS Manual
Doc 9924 Aeronautical Surveillance Manual
Doc 9994 Manual on Airborne Surveillance Applications
Doc 8071 Volume III: Manual on Testing of Radio Navigation Aids
— Testing of Surveillance Radar Systems
Cir 326 Assessment of ADS-B and Multilateration Surveillance to Support Air Traffic Services and Guidelines for Implementation
And other related documents such as GANP/ASBU

Alternate View of ICAO Framework …in relation to SP

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— Testing of Surveillance Radar Systems
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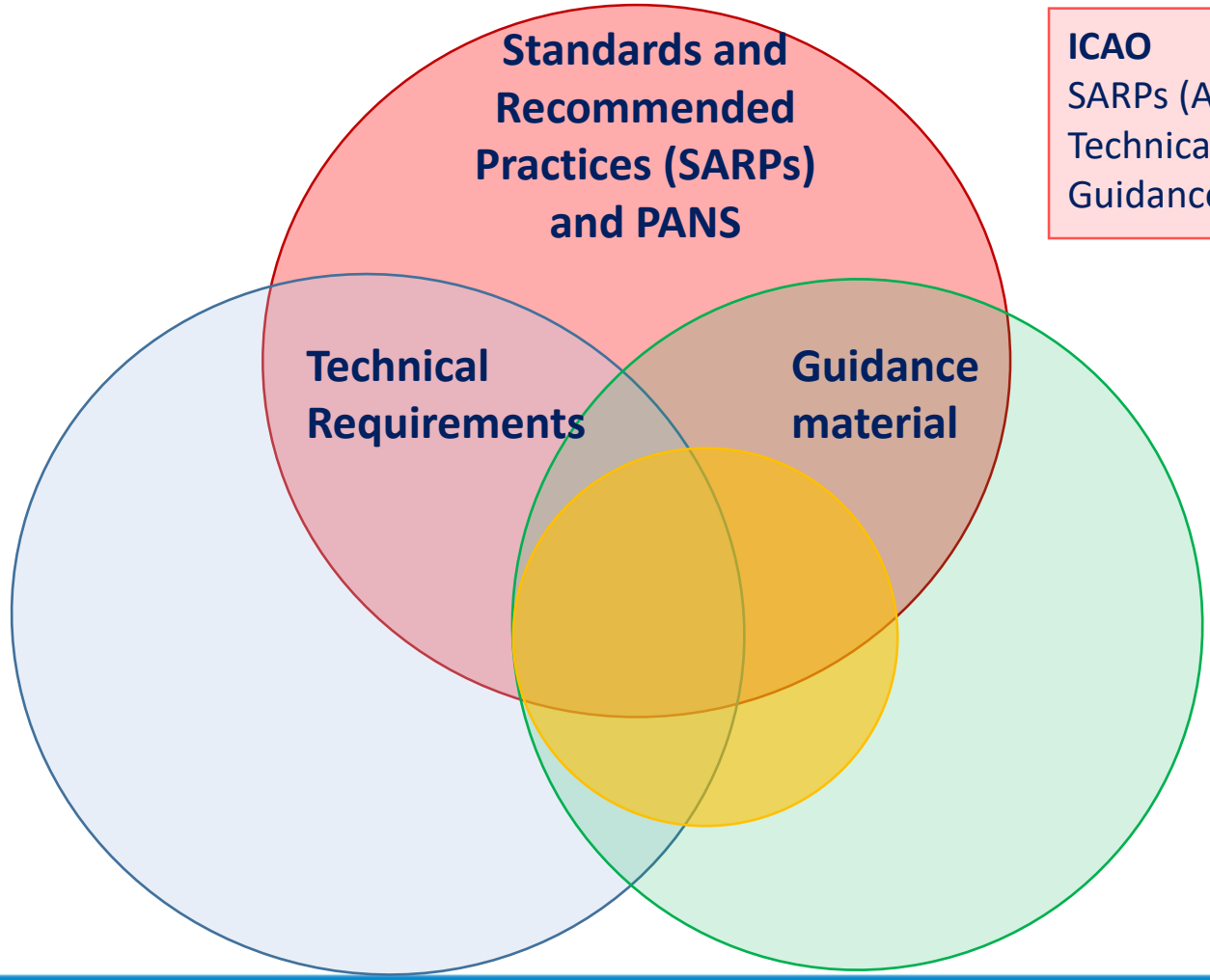
Standardisation/Regulatory Activities

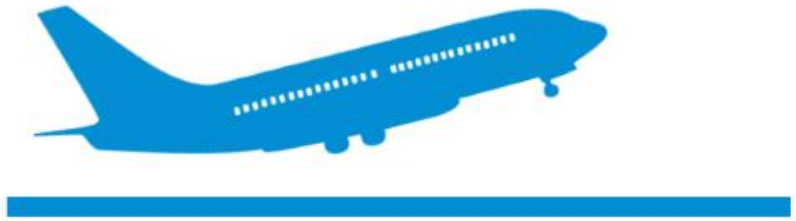


ICAO
SARPs (Annex 10 V IV), PANS, etc
Technical Requirements (Doc 9871)
Guidance Material (Doc 9924 & Doc 9994)

Standard-making Orgs (RTCA/EUROCAE)
Minimum Aviation System Performance Standards (MASPS)
Minimum Operational Performance Standards (MOPS)

State Regulators
National regulations
Guidance material (Advisory Circulars, etc)

Authorization

Certification Standards (TSO, eTSO, etc)

THANK YOU